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Traces that tell experiences with graffiti and math

Rasgos que cuentan experiencias con el *graffiti* y las matemáticas

Traços que contam experiências com o graffiti e a matemática

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ABSTRACT

This article presents a cartographic production on a graffiti workshop. Using cartographic clues, the workshop aimed to investigate how mathematics manifests in wall and urban panel art and whether it can be linked to the educational process. From a perspective focused less on the product and more on processes, it is guided by encounters and the emerging multiplicities in the territory, where art and mathematics relate potentially, not dichotomously. Through the workshop, the mobilization of mathematical knowledge in the creative process of graffiti was observed, also seen as an expression of identity and culture. Therefore, in this article, a specific aspect of the research is highlighted, aiming to present such mathematical knowledge, shifting the focus to the multiple mathematic practices fostered in the work of different social groups. This recognition can inspire a path that considers mathematics actively in artistic practices during the teaching and learning process, going beyond formal spaces to understand how it shows up in hands-on practices.

Keywords: graffiti; mathematics; workshop; cartography.

RESUMEN

Este artículo tiene como objetivo presentar una producción cartográfica sobre un taller de graffiti. A partir de pistas cartográficas, el taller buscó investigar cómo las matemáticas se manifiestan en el arte de muros y paneles urbanos y si pueden articularse al proceso educativo. Desde una perspectiva basada menos en el producto y más en los procesos, se procura guiarse por los encuentros y por las multiplicidades emergentes en el territorio, en que arte y matemáticas se relacionan potencialmente, y no dicotómicamente. A través del taller, se observó la movilización de saberes matemáticos en el proceso creativo del graffiti, percibido también como manifestación de identidad y cultura. Por lo tanto, en este artículo, se hace un recorte en la investigación, que busca presentar dichos saberes matemáticos, desplazando la mirada hacia las múltiples matemáticas potenciadas en la práctica de diferentes grupos sociales. Ese reconocimiento puede inspirar un camino que considere una matemática presente en las prácticas artísticas en el proceso de enseñanza y aprendizaje, yendo más allá de los espacios formales para comprender cómo se manifiesta en prácticas empíricas.

Palabras clave: graffiti; matemáticas; oficina; cartografía.

RESUMO

Este artigo tem por objetivo apresentar uma produção cartográfica acerca de uma oficina de *graffiti*. Com base em pistas cartográficas, a oficina objetivou investigar como as matemáticas se manifestam

na arte de muros e painéis urbanos e se podem ser articuladas ao processo educativo. Sob uma perspectiva baseada menos no produto e mais em processos, busca-se pautar as práticas pelos encontros e pelas multiplicidades emergentes no território, em que arte e matemática se relacionam potencialmente, e não dicotomicamente. Por meio da experiência, observou-se a mobilização de saberes matemáticos no processo criativo do *graffiti*, percebido também como manifestação de identidade e cultura. A partir dessa constatação, este texto apresenta um recorte da pesquisa que busca expor tais saberes matemáticos, deslocando o olhar para as múltiplas matemáticas potencializadas no fazer de diferentes grupos sociais. Esse reconhecimento pode inspirar um caminho que considere uma matemática atuante em práticas artísticas no processo de ensino e de aprendizagem, indo além dos espaços formais para compreender como ela se manifesta em práticas empíricas.

Palavras-chave: *graffiti*; matemáticas; oficina; cartografia.

FIRST WORDS

Graffiti, recognized as an artistic expression of Brazilian culture by Law N. 14.996 of October 15, 2024 (Brasil, 2024), elevates urban painting to a reinterpretation of the city and the subjectivities it gives shape. The words “graffiti,” “graffito”, or “sgraffito” refer to scratching or scraping. Emerging as a form of protest, graffiti was reinforced by the American hip-hop movement – along with DJing, MCing, and breakdancing – and adopted as a social practice and form of communication, in which streets, trains, and walls were covered with inscriptions known as *tags*, through which young people from the outskirts express themselves by spreading their names across American cities.

Gitahy (1999) describes graffiti as a democratic form of artistic expression because it is not constrained by spatial or ideological limits. It is an artistic intervention everyone can read and interpret. It is a collection of inscriptions by graffiti artists in the resistance movement, expressing their demands within the country's sociopolitical landscape.

In Brazil, graffiti art emerged in São Paulo in the late 1970s as a form of protest against what was happening across society, including the military dictatorship that plagued the country. In the years that followed, this art, in the form we know today, gained prominence. Alex Vallauri is considered a leading pioneer of graffiti in Brazil (Fundação Bienal de São Paulo, 2013), and his iconic paintings, such as “A Rainha do Frango” [The Chicken Queen], brought an in-depth perspective to what was previously regarded as merely marginal.

In art, images bridge how we visualise who we are, where we are, and how we feel (Barbosa, 2012). Graffiti sparks dialogue between its creators and its viewers. It represents possibilities for both the artist and the viewer, and it intertwines art and mathematics in a rhizomatic way. In Flores' view (2014, p. 118), visualizing these textures is to recognize that “knowledge constitutes and has constituted our way of seeing, representing, and knowing. In this way, I can problematize and set in motion the so-called natural truths of our culture”. Viewing mathematics through art means shifting experiences to environments that are different from the usual ones; it means mobilizing knowings. This is possible because, as Gesser, Flores, and Schuck (2019, p. 8) state, “when looking at a painting, we are also cognitively constructing another way of seeing, among the various visual discourses that exist”. This movement takes shape along paths that interconnect during experimentation. We believe, as Moehlecke (2012) notes, that immersion in current or other territories offers an opportunity for events to occur between affection and the transpast.

With these clues in place, this study proposes investigating, drawing on experience in a graffiti workshop, how mathematics manifests in the art of walls and urban murals, and how it can be integrated into the educational process. We unveil an open path in which visuality presents itself as a possibility for looking beyond what is visible, aligning itself with becomings

revealed through discourses and narratives of graffiti and mathematics, and between these two constructs.

THE TERRITORY OF A GRAFFITI WORKSHOP

As an act of resistance to the usual ways of viewing urban art with mathematics and/or between mathematics, Hur (2021, p. 279) highlights cartography as a "surveyor, who marks and traces contours, boundaries, paths, and clearings, producing multiple meanings." Graffiti offers an opportunity to reorganize and redefine experiences as a discursive-visual intervention. In this context, it is important to pay open attention to encounters, multiplicities, and processualism.

In this study, the graffiti workshop was developed for women to encourage women and LGBTQIAP individuals to start and continue graffitiing. It was organized by the "Pikena das Cores" [Little One of the Colors] collective as part of the program for the third edition of the "Mocambo[1] das Minas" [Girls' Hiding Place] event, which takes place in various locations across São Luís, capital of the state of Maranhão.

The Oficina de Graffiti para Mulheres [The Graffiti Workshop for Women] was held from July 7 to 13, 2025, at a school in the Coroadinho hub, a neighborhood in the outlying area of São Luís, to give visibility to the community through artistic interventions. In line with Lavor Filho and Miranda (2020), actions like this use graffiti as a form of protest with the potential to change perceptions of the environment, promote feelings of belonging, and reconfigure the images residents have built of the spaces they live in. Figure 1 shows the layout of the Pikena das Cores Workshop.

Figure 1- Layout of the Pikena das Cores graffiti workshop



Source: Authors' personal archive (2025)

For Moehlecke (2012, p. 166), workshops are actions and constitute verbs, since:

> […] workshopping can serve as a research tool when we extract from multiple experiences a singularity in terms of meaning and variation. When faced with a little chaos, a narrative discards previous knowings and enjoys a small degree of freedom, risking an analysis in proliferation. We can create a dynamic between living the experience and its effects on participants' and researchers' knowledge. Hence, there

[1] This term is linked to refuge, hiding place, and quilombo. You can learn about the event through the documentary "O graffiti delas" [The Girls' Graffiti], directed by Paula Lobato and made available by the Mocambo das Minas collective (Documentary [...], 2025).

> is a connection between form and force, the authors and co-authors of an inventive process.

In a workshop, we operate through continuous restlessness, through possibilities that do not constrain, but rather expand our perspectives. For Kerscher-Franco and Flores (2023), restlessness, grounded in experimentation, is a space to exercise thinking, including mathematical thinking. For the authors, thinking about what is seen and what is apparent produces conceptions that shape how we interpret the world and talk about it.

In this study, the workshop in question is presented as a space for thinking about and experiencing art and other forms of knowings in diverse environments and practices, highlighting interconnections and dialogue. We understand experience, following Bondía's (2002) argument, not as something that simply happens or as something one participates in, but as something that happens to us, affects us, and transforms us, leaving marks on our ways of feeling, thinking, and being in the world. From this perspective, experience is not defined by performing an activity, but by the meanings that arise in the relationships each person establishes with what happens to them. Thus, although the participants share the same space and the same proposal, their experiences are not necessarily the same, as they involve different ways of perceiving, feeling, and relating to what is experienced. As the author states, "if experience is not what happens, but what happens to us, two people, even if they face the same event, do not have the same experience" (Bondía, 2002, p. 27).

In this sense, the graffiti workshop was an open space for the effects produced in the relationships among participants, materials, artistic expressions, and knowings mobilized. Although unique, those experiences were also shaped by the collective sharing, connections, estrangements, and exchanges that took place throughout the workshop. In this context, mathematics can be thought of not as previously defined knowing to be simply recognized or applied, but as something that is also produced and takes on other meanings in the relationships established with art, materials, and ways of making and perceiving the world.

CARTOGRAPHY

Research as a territory of events requires the researcher to be open and sensitive to processes of experiencing and perceiving. Based on the "clues of the cartography method" (Passos; Kastrup; Tedesco, 2016), we can state that:

> […] mapping therefore requires the event, to roll the dice, to be open to the affirmation of chance, to what poses a problem within it. To endure a problem, one always neighbors with territories of solutions. To be on the way. To walk in involution, neither from where nor to where; rather, to inhabit multiple temporalities in a single moment. And to ask, what is it that keeps insisting on here? What is it that requests that language opens the way to it? What gains prominence in what happens? (Costa; Angeli; Fonseca, 2012, p. 44).

Mapping is a journey. An open and in-process mapping that activates the non-inert. A construction unconcerned with dichotomies, yet attentive to the multiplicities of movements that accompany these two dimensions. To this end, we must inhabit existential territories (Alvarez; Passos, 2009) and leave subjectivities in abeyance so deterritorialization and immersion in the path taken can occur. But how can we navigate between art and mathematics without perceiving them as tools for each other and as mutually intertwined? Like rhizomes? Cartography is also an exercise, so this paper is presented as an exercise for thinking about

graffiti and mathematics on a plane of experience, through intersections. It shifts us away from familiar territories and lets us be touched by what happens in the encounter, making us willing to experience other ways of seeing, feeling, and thinking. Look at what may not have been seen yet.

A GRAFFITI WORKSHOP FOR WOMEN

The Graffiti Workshop for Women, organized by the Pikena das Cores collective, was aimed at all women interested in learning a little more about the art of graffiti. The workshop was not meant to teach anything, but to encourage reflection on various aspects, notably how actions, features, and drawings shape mathematical elements, and how these elements naturally emerge in the language of graffiti.

Regarding the workshop specifically, we think of it as a journey that offers "a vision beyond all perspectives, a gaze that transforms us (and is, therefore, an experience) while its clairvoyance guides us" (Masschelein, 2008, p. 37). In this sense, the workshop was presented as an experimental plan. In this plan, "the fields of relations that engender things in the world and that engender the world itself become visible, making them become-other, unscrewing the signs from a field of meanings and signifiers, transforming things into pure sensation" (Bom-Tempo; Guido, 2017, p. 27).

The graffiti workshop was held from July 7 to 13, 2024. In the first five days, we proposed a discussion group to share knowledge about the history of graffiti around the world, describing it as a movement, art form, and language. The listening sessions echoed this urban art as a point of provocation, since it questions and denounces.

Some of the women present, who previously only accompanied their partners, friends, or brothers on "*rolês*" [outings], began to express their internal need to create their own narratives on the city's streets, while at the same time claiming, reinterpreting, and reorganizing spaces. The silence of women was broken and transformed into colors and lines. In addition to the graffiti artists, teachers from different fields of knowings participated in the workshop, even without previous experience with graffiti — and, through art, they built bridges for coming together.

As a researcher-cartographer, the first author of this study followed this path with a perspective that made her open to being touched, since the cartographer, as Rolnik (1989, p. 68) states, "keeps inventing positions from which these vibrations find sounds, channels of passage, a ride to existentialization." The participant was receptive to what was to come and open to the visible and the invisible, as seen in the look at graffiti and mathematics.

After the more theoretical parts of the workshop, including the history of graffiti, techniques, lettering styles, among others, the spray-painting practice (Figure 2) was carried out in an open session, in other ways of inhabiting reality that, according to Kastrup (2012), are only possible by immersing oneself in the plane of experience. In this space, other ways of thinking are unlocked, along with new flows and variations, and thinking becomes an act of creation.

Figure 2 - Graffitiing during the workshop



Source: Personal archive of the first author (2025)

Graffiting is not just about using spray paint, as shown in the experiments in Figure 2. Throughout history, other tools (brushes, rollers, etc.) have been adopted to improve the outcome of graffiti on murals. As Furtado and Zanella (2009) point out, these incorporations result from configurations, aesthetic formats, and even political and social influences.

When they began graffitiing, participants were instructed to remove the air from inside the spray cans. To do this, the can is turned upside down (nozzle down), as shown in Figure 3, and pressed until the container cools. This technique removes some of the air inside the can, so the pigment mixes properly with the other components (resins, solvents, and propellant gas).

Figure 3 - Air removal process



Source: Bottled [...] ([2020?])

One goal of the workshop was to create a panel on the school wall where the meetings were held. Because the theme related to Maranhão culture, the elements and their arrangement in the painting were decided by consensus. Next, we marked the space to be used: the organic grid. In art, the grid is a technique commonly used by artists to organize and structure the space that will receive the painting. The surface is divided into an imaginary grid, allowing for balanced and harmonious transpositions of the elements of the work. As a readjustment, the design is transferred onto markings in the organic grid. On the wall chosen

for the collective painting, shown in Figure 4, the best layout was determined after marking it out using an app, and the construction of the mural began, shown in progress in Figure 5.

Figure 4 - Wall organized with the help of an organic grid and an app



Source: Personal archive of the first author (2025)

Figure 5 - Stages of the dashboard construction



Source: Personal archive of the first author (2025)

Graffiti, being a fertile ground, reveals cultural elements that emphasize local dialogues and narratives intertwined with art and mathematical practice. As a cartography researcher, her journey unfolded like that of a traveler

> So, there are two very different kinds of travel: the kind that opens you up to strangeness and invention, and the kind of tourist travel that feels more like a journey without going anywhere... without leaving your comfort zone. So, traveling in this way, as a traveler, is really cool. And it's also great when you travel, and that sense of unfamiliarity you feel comes back with you a little when you return to your own city, and you see things from a fresh perspective, a bit detached from your everyday life here. Often, you can be more sensitive and more open to traveling in your own city, in your own home, in your own life, right? (Abecedário [...], 2019).

Being a traveler is an opportunity to exercise subjectivity and unleash sociocultural practices[2] that function as bridges for shifting interpretations of reality. This reality becomes a studio, where mathematical thinking is produced with urban art. Graffiti uses walls as spaces for individual and collective encounters, sometimes leading to intersections that are not exposed, but dynamic.

For the researcher, as a participant in the workshop, a range of possibilities opened, which led to reflections on graffiti as a construction, a practice that intertwines with ways of thinking, representing and denouncing the world, where mathematics can play a role in organizing pictorial space. But what other paths can also be sensed from the one taken? Among the questions that arose was, for example, the reason for being of a metal ball inside the spray can. This element functions like a propeller that, when agitated in the can, helps mix the constituent elements of the paint uniformly. As a geometric solid (without edges or vertices), the metal sphere allows access to all spaces inside the paint can.

The way the pouring spouts (valves) on paint-can caps influence the work done was also interesting. For example, the closer this nozzle is to the application surface and the more pressure it is under, the finer and more continuous the line will be in the application area. If the intended result is a wider line, the person must keep the can nozzle farther away from the area to be painted. So, we must ask: What do female graffiti artists make work mathematically, even when they are not trying to do math?

WAYS TO WORK MATHEMATICALLY IN GRAFFITI

When handling the tools and materials presented by the graffiti artist instructors, it was possible to observe practices that involve mathematical knowings that do not necessarily constitute previously established academic content, but rather ways of working with the visual. These knowings are expressed in the forms that gain meaning, in the lines that are articulated, and in the color combinations that produce depth, perspective, symmetry, and volume. These are ways of thinking that do not depend on prior mathematical planning, but that arise in doing, allowing mathematics to emerge among lines, colors, and experimentation. Mathematics thus takes place between the body, the materials, and the surface, in encounters that transform a form, bring a line to meet another, and give a composition new meaning. From this perspective, mathematical knowledge is not limited to the abstract realm or the application of formalized concepts, as it is also constituted by practices, discoveries, and ways of operating that take on meaning in different contexts.

The experience with graffiti allows us to explore ways of thinking about the relationships between urban art and mathematics, shifting the usual ways of recognizing where and how mathematics occurs. A graffiti artist must deal with scale, dimension, distance, and relationships between parts. A design can be enlarged, a letter may need adjustment, and a composition can be modified depending on the surface limits. All of this may involve conventional measurements, estimates, visual comparisons, and adjustments made during execution. This dimension seems particularly relevant to us because it highlights mathematical thinking that occurs in decisions and experiments, without necessarily relying on explicit calculations.

[2] In constructing this text, we understand sociocultural practices as “the knowings and doings of social groups within a specific culture [...] in the search for solutions to unique problems that arise in the lives of various human communities” (Mendes; Silva, 2017, p. 106).

In light of this, we can think of mathematics in the workshop as emerging through the forms being constructed. This involves how female graffiti artists produce, articulate, and transform forms: lines, curves, contours, proportions, symmetries, repetitions, enlargements, and deformations. It is not that we can simply say that there is geometry in graphite. But then observe how the forms are constructed, how one line leads to the next, how the dimensions are adjusted, and how the relationships between the parts produce a composition.

A mathematics of spatial production also emerges, since space is not merely a medium: it is produced and transformed by practice. This is evident in the way female graffiti artists work with wall space, surface dimensions, and the visual effects they want to produce — they mobilize relationships between surface, depth, volume, and position. For example, letters can appear thicker, figures can seem to move back and forth, and lines can create depth effects, as seen in the third image in Figure 2 and the second in Figure 6.

Figure 6 - Effects of spray on letter styles



Source: Personal archive of the first author (2025)

The gesture of spraying the paint, the distance between the body and the wall, the direction of the arm, the speed of movement and the pressure exerted can affect the thickness, curvature, and continuity of the lines. Movement not only executes a previously conceived form, but it can also produce deviations, create solutions, and transform what was being done.

Colors also play a role in building mathematical and visual relationships. Overlaps, contrasts, gradations, alternations, and repetitions can produce effects of continuity, separation, depth, and volume. When preparing, for example, the wall that would be in the background, the so-called “base”, the moment of searching for the most suitable paint color for the mural was striking. Painting quantification was also involved. Initially, 3.6 liters of paint were used, which were subsequently mixed with the dye in a 50 ml tube. However, they needed to add four more tubes like the previous one to get a result closer to what they expected. The graffiti artists' guidelines for this type of handling state that it is more appropriate to add the paint directly to the can of paint, since the mixture would be divided among all the graffiti artists and, if added later, it would be difficult to achieve the same shade, given the need to maintain the proportionality between the resulting paint and the amount of paint to be added.

When we visualize mathematical knowledge through experimentation with graffiti, we engage in a creative process in which concepts such as proportionality become evident, from the choice of colors to be used to the shape of each line to be drawn. When simulating the case of the volume contained in a can of paint (3.6 l = 3,600 ml) and in the five tubes (250 ml) that together defined one of the colors used on the panel, we observed the following proportion:

$$\text{Ratio: } \frac{corante}{tinta} = \frac{250\ ml}{3600\ ml} = \frac{25\ ml}{360\ ml} = \frac{5\ ml}{72\ ml}$$

This result shows that, to maintain the same shade in the mixture, we must use 5 ml of dye for every 72 ml of paint.

Each action highlights experiential knowledge that prevails within graffitiing, reaffirming that mathematical knowledge is not separate from cultural practices (Castro, 2025). Previous experiences enable female graffiti artists to apply practical and intuitive actions based on mathematical concepts as a means of mobilizing strategies for artistic creations. In all of this, mathematics appears not only as something recognizable in the outcome, but as something that happens during the creative process.

The fact that the Mocambo das Minas workshop and event were held at a school shows how this art form has reached beyond the city streets. Furthermore, this confirms the school environment as a place where the surroundings are contextualized and there is cultural appropriation by the individuals, while it is possible to observe artistic and mathematical knowledge.

Amid the reflections that emerged throughout the workshop, graffiti emerged as a proposal for collective learning to "create alternative ways of teaching and perceiving the landscape and the school grounds" (Almeida, 2021). It combines with mathematical thinking, while, through visualization, it opens possibilities for geometric, algebraic, and arithmetic thinking intertwined with paintings.

The interaction proposed through the graffiti murals awakens a critical form of education by raising discussions about social and cultural issues. The mural resulting from the workshop (Figure 7) sought to highlight cultural elements from Maranhão that the school community may not have known about, and it sparked connections to individuals' daily experiences with local culture.

Figure 7 - Wall created during the workshop



Source: Personal archive of the first author (2025)

Strengthening cultural identity in the school environment helps to demystify mathematical knowings, which is considered neutral, universal, and free from social relations. It creates opportunities for experience and expression, making the teaching and learning process more dynamic and thought-provoking, and helping students develop perspectives that help them understand their own world.

A BRIEF STOP

The shared experience in the Graffiti Workshop for Women revealed a space where art and mathematics intersected. This was a move that made it possible to visualize flows and relationships of knowledge through practices previously understood from the predictable and dichotomous perspective of art and mathematics as distant fields of knowledge. Measurements, shapes, colors, and other elements, including the practical application of the concepts of symmetry and geometry, notions of proportionality, space, and planning, and three-dimensionality, come together and help to create subjectivities and modes of existence for those who are willing not only to see what is immediately before them, but also to perceive the shifts in what is happening. Thus, graffiti has become, beyond an inscription or image, an expression of identity and culture and, among other possibilities, a space for thinking and doing mathematics. In encountering graffiti art, mathematics can also be expressed through practice that emphasizes sensibilities and experimentation over formulas and representations. We thus see graffiti and mathematics as social practice rooted in the ways humans live and are.

It would be no different in urban art, as we saw during the mapped workshop: other forms of mathematics took shape and revealed potential for the teaching process in this context. It involves thinking about mathematics and art in everyday life as a continuous process of becoming, bringing mathematics education into informal contexts and viewing the individual as a creator, builder, and transformer of territories.

The mapping in the workshop was not intended to present a single path or even the endpoint of these discussions about the different ways mathematics presents itself. On the contrary, this workshop was taken as a midpoint in the process of recognizing and embracing the knowings that interact and are generated in learning territories.

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REFERENCES

ABECEDÁRIO Virgínia Kastrup: Cartografias da Invenção. [*S. l.*: *s. n.*], 2019. 1 vídeo (2 h 24 m 49 s). Publicado pelo canal CINEAD LECAV. Disponível em: https://www.youtube.com/watch?v=mTWns8ACYDU. Acesso em: 2 abr. 2026.

ALMEIDA, Pedro Paulo de. **A construção de murais por meio do grafite em escolas como meio de aprendizagem de conteúdos geográficos, socialização e valorização dos espaços**. 2021. 20 f. Trabalho de Conclusão de Curso (Licenciatura em Geografia) – Instituto Latino-Americano de Tecnologia, Infraestrutura e Território, Universidade Federal da Integração Latino-Americana, Foz do Iguaçu, 2021. Disponível em: https://dspace.unila.edu.br/items/cc4484ec-1a56-480c-bb87-253310a7b688. Acesso em: 12 mar. 2026.

ALVAREZ, Johnny; PASSOS, Eduardo. Cartografar é habitar um território existencial. *In*: PASSOS, Eduardo; KASTRUP, Virgínia; ESCÓSSIA, Liliana da (org.). **Pistas do método da cartografia**: pesquisa-intervenção e produção de subjetividade. Porto Alegre: Sulina, 2009. p. 131-149.

BARBOSA, Ana Mae. **Inquietações e mudanças no ensino da arte**. 7. ed. São Paulo: Cortez, 2012.

BOM-TEMPO, Juliana Soares; GUIDO, Humberto. Apresentação - Dossiê Artes e Oficinas: incursões na filosofia de Deleuze-Guattari. **Educação e Filosofia**, Uberlândia, v. 31, n. 63, p. 1525-1537, 2017. DOI: https://doi.org/10.14393/REVEDFIL.v31n63a2017-43114. Disponível em: https://seer.ufu.br/index.php/EducacaoFilosofia/article/view/43114. Acesso em: 21 mar. 2026.

BONDÍA, Jorge Larrosa. Notas sobre a experiência e o saber de experiência. **Revista Brasileira de Educação**, Rio de Janeiro, v. 19, p. 20-28, 2002. Disponível em: https://www.scielo.br/j/rbedu/a/Ycc5QDzZKcYVspCNspZVDxC/?format=pdf&lang=pt&ilang=pt_BR. Acesso em: 21 mar. 2026.

BRASIL. Lei n.º 14.996, de 15 de outubro de 2024. Reconhece as expressões artísticas charge, caricatura, cartum e grafite como manifestações da cultura brasileira. **Diário Oficial da União**, seção 1, Brasília, DF, p. 2, 16 out. 2024. Disponível em: https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2024/lei/l14996.htm. Acesso em: 17 dez. 2025.

CASTRO, Raimundo Santos de. **Etnomatemática**: o infinito dos povos – trilhas dos saberes, ecos da história. Porto Alegre: Appris, 2025.

COSTA, Luis Artur; ANGELI, Andréa do Amparo Carotta de; FONSECA, Tania Mara Galli. Cartografar. *In*: FONSECA, Tania Mara Galli; NASCIMENTO, Maria Livia do; MARASCHIN, Cleci (org.). **Pesquisar na diferença**: um abecedário. Porto Alegre: Sulina, 2012. p. 43-46. Disponível em: https://vocabpol.cristinaribas.org/wp-content/uploads/2016/08/Pesquisar-na-Diferenca_Um-abeceda%CC%81rio.pdf .Acesso em: 15 mar. 2026.

DOCUMENTÁRIO "O Graffiti Delas". [*S. l.*: *s. n.*], 2025. 1 vídeo (14 m 25 s). Publicado pelo canal Mocambo das Minas. Disponível em: https://youtu.be/WHjQqOag4OA. Acesso em: 18 jan. 2026.

ENVASADO de sprays: una solución rápida y eficiente. Besa Lab. [2020?]. Disponível em: https://www.bernardoecenarro.com/es/besa-lab/como-envasar-sprays-a-maquina/. Acesso em: 10 fev. 2026.

FLORES, Cláudia Regina. Professora, por que relacionar Arte e Matemática para discutir Matemática? *In*: MORAES, João Carlos Pereira de. **Experiências de um corpo em Kandinsky**: formas e deformações num passeio com crianças. 2014. 217 f. Dissertação (Mestrado em Educação Científica e Tecnológica) – Universidade Federal de Santa Catarina, Florianópolis, 2014. Disponível em https://repositorio.ufsc.br/xmlui/bitstream/handle/123456789/130964/332274.pdf?sequence=1&isAllowed=y. Acesso em: 12 fev. 2026.

FUNDAÇÃO BIENAL DE SÃO PAULO. **Alex Vallauri ao alcance de todos**. Bienal de São Paulo, 17 abr. 2013. Disponível em: https://bienal.org.br/alex-vallauri-ao-alcance-de-todos/ .Acesso em: 9 fev. 2026.

FURTADO, Janaína Rocha; ZANELLA, Andreia Vieira. Graffiti e cidade: sentidos da intervenção urbana e o processo de constituição dos sujeitos. **Revista Mal-estar e Subjetividade**, Fortaleza, v. 9 n. 4. p. 1279-1302, dez. 2009. Disponível em: https://ojs.unifor.br/rmes/article/view/4910. Acesso em: 17 jan. 2026.

GALLO, Silvio. Em torno de uma educação menor. **Educação e Realidade**, Porto Alegre, v. 27, n. 2, p. 169-178, 2002. Disponível em: https://seer.ufrgs.br/index.php/educacaoerealidade/article/view/25926/15194. Acesso em: 01 mar. 2026.

GESSER, Gabriel José; FLORES, Cláudia Regina; SCHUCK, Cássia Aline. Matemática e arte cubista: sobre uma experiência com crianças no ensino fundamental. **Ensino & Multidisciplinaridade**, São Luís, v. 5, n. 1, p. 1-17, 2019. Disponível em: https://periodicoseletronicos.ufma.br/index.php/ens-multidisciplinaridade/article/view/14660. Acesso em: 10 fev. 2026.

GITAHY, Celso. **O que é graffiti**. São Paulo: Brasiliense, 1999.

GUATTARI, Félix; ROLNIK, Suely. **Micropolítica**: cartografias do desejo. Petrópolis: Vozes, 1996. Disponível em: https://drive.google.com/file/d/1godeZnkd-95hjymobwDzmrJ-XeHdlOwC/view?ts=694d2fd9. Acesso em: 15 fev. 2026.

HENCKEMAIER, Luciane Izabel Ferreira. Educação pela arte do grafite em uma escola pública: uma proposta de participação. **Revista Educação, Artes e Inclusão**, Florianópolis, v. 12, n. 2, p. 141-157, 2016. DOI: https://doi.org/10.5965/1984317812022016141. Disponível em: https://www.revistas.udesc.br/index.php/arteinclusao/pt_BR/article/view/8130. Acesso em: 15 jan. 2026.

HUR, Domenico Uhng. Cartografia das intensidades: pesquisa e método em esquizoanálise. **Revista Práxis Educacional**, Vitória da Conquista, v. 17, n. 46, p. 275-292, 2021. Disponível em: http://educa.fcc.org.br/pdf/apraxis/v17n46/2178-2679-apraxis-17-46-275.pdf. Acesso em: 12 abr. 2026.

KASTRUP, Virgínia. O funcionamento da atenção no trabalho do cartógrafo. *In*: PASSOS, Eduardo; KASTRUP, Virgínia; ESCÓSSIA, Liana da (org.). **Pistas do método da cartografia**: pesquisa-intervenção e produção de subjetividade. Porto Alegre: Sulina, 2012. p. 33-51.

KERSCHER-FRANCO, Mônica Maria; FLORES, Cláudia Regina. Oficinas como Experimentações com Matemática e Arte. **Bolema**: **Boletim de Educação Matemática**, Rio Claro, v. 37, n. 76, p. 371-391, 2023. Disponível em: https://www.scielo.br/j/bolema/a/CS8HBFvVLbrstZFPyjkbzhd/?format=pdf&lang=pt. Acesso em: 05 fev. 2026.

LAVOR FILHO, Tadeu Lucas de; MIRANDA, Luciana Lobo. Traçando notas de conhecimento sobre graffiti, escola e juventudes: uma revisão sistemática integrativa. **AMAzônica**, [*S. l.*], v. 25, n. 2, p. 14, 2020. Disponível em: https://dialnet.unirioja.es/servlet/articulo?codigo=9950872. Acesso em: 28 mar. 2026.

MASSCHELEIN, Jan. E-ducando o olhar: a necessidade de uma pedagogia pobre. **Educação e Realidade**, Porto Alegre, v. 33, n. 2, p. 35-47, maio/ago. 2008. Disponível em: https://www.redalyc.org/pdf/3172/317227051005.pdf. Acesso em: 15 mar. 2026.

MENDES, Iran Abreu; SILVA, Carlos Aldemir Farias da. Problematização de práticas socioculturais na formação de professores de Matemática. **Revista Exitus**, Santarém, v. 7, n. 2, p. 100-126, maio/ago. 2017. Disponível em: https://portaldeperiodicos.ufopa.edu.br/index.php/revistaexitus/article/view/303/251. Acesso em: 28 fev. 2026.

MOEHLECKE, Vilene. Oficinar. *In*: FONSECA, Tania Mara Galli; NASCIMENTO, Maria Livia do; MARASCHIN, Cleci (org.). **Pesquisar na diferença**: um abecedário. Porto Alegre: Sulina, 2012. p. 165-168. Disponível em: https://vocabpol.cristinaribas.org/wp-content/uploads/2016/08/Pesquisar-na-Diferenca_Um-abeceda%CC%81rio.pdf. Acesso em: 15 abr. 2026.

PASSOS, Eduardo; KASTRUP, Virgínia; TEDESCO, Sílvia. (org.). **Pistas do Método da Cartografia**: a experiência da pesquisa e o plano comum - vol. 2. Porto Alegre: Sulina, 2016.

ROLNIK, Suely. **Cartografia sentimental**: transformações contemporâneas do desejo. São Paulo: Estação Liberdade, 1989.

SANCHOTENE, Virginia; BELLO, Samuel Edmundo Lopez. O Procedimento Deleuziano de Criação: aportes para pensar o currículo (de matemática). **APRENDER-Caderno de Filosofia e Psicologia da Educação**, [*S. l.*], n. 25, p. 109-120, 2021. Disponível em: https://periodicos2.uesb.br/index.php/aprender/article/view/8406. Acesso em: 21 mac. 2026.

SARAMAGO, José. **O conto da ilha desconhecida**. São Paulo: Companhia das Letras, 1998.

SOUZA, Guiomar de; SANTOS, Suelen Assunção. Por que falar em entredisciplinaridade na educação matemática? *In*: BELLO, Samuel Edmundo Lopez; AURICH, Grace da Ré; SANTOS, Gilberto Silva dos (org.). **Deleuze e educação e matemática e... rachar as coisas, rachar as palavras**. São Leopoldo: Oikos, 2022. *e-book*. Disponível em: https://lume.ufrgs.br/handle/10183/242126. Acesso em: 15 mar. 2026.

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