## ENCOUNTERING A FEMINIST LITERATURE REVIEW WITH(IN) MATHEMATICS EDUCATION RESEARCH

ENCONTROS DE UMA REVISAO DE LITERATURA FEMINISTA COM PESQUISAS EM EDUCAÇÃO MATEMÁTICA

# ENCUENTROS DE UNA REVISIÓN DE LITERATURA FEMINISTA CON INVESTIGACIONES EN EDUCACIÓN MATEMÁTICA

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#### **ABSTRACT**

In the encounters between researchers interested in doing a literature review about feminist research with(in) mathematics education, a problematization of literature review methodologies in mathematics education was set in motion. Driven by the desire to have the literature review as a constitutive part of the research process, we create a circulation zone between a commonly used literature review method, the systematic literature review, and what we are calling here a feminist literature review. We argue that conventional literature review methods carry strong theoretical assumptions, many of which align with quantitativepositivist research approaches. These often conflict with the theoretical-methodological assumptions of the researchers who adopt them, as in our case, specifically with the feminist perspective guiding our research. We thus propose a feminist literature review, not merely as a review of feminist research in Mathematics Education, but as the mobilization of feminist theoretical-methodological concepts within the literature review process. This includes concepts such as situated knowledge and affect as apparatuses for engaging with/in the phenomenon while relating to the literature. In this way, the literature review process can be seen-sensed as an important terrain to create relationships-encounters with both research and researchers, while recognizing the agentic force of the literature on us. It allows us to come closer to different ways of knowing-doing research in entanglement with the literature,



mathematical practices, feminisms, humans and non-humans, languages, search engines, and so on. In this terrain, we affect and are affected by literature, and its encounters open up new directions-connections that allow us to move away from existing patriarchal, excluding norms in academia.

Keywords: feminist studies. literature review methodology. posthumanist methods. situated knowledges. affect.

#### **RESUMO**

Em encontros entre pesquisadoras interessadas em revisar a literatura de pesquisas feministas com/na Educação Matemática, emerge-se um processo de problematização dos métodos de revisão de literatura comumente utilizados na Educação Matemática. Guiadas pelo desejo de tomar a revisão de literatura enquanto uma parte constitutiva do fazer pesquisa, criamos uma zona de circulação entre um método de revisão de literatura comumente utilizado em nossa comunidade, qual seja a revisão de literatura sistemática, e o que estamos chamando aqui de revisão feminista de literatura. Nosso argumento é de que métodos convencionais de revisão de literatura carregam consigo fortes pressupostos teóricos, muitos dos quais estão alinhados com abordagens quantitativas-positivistas de pesquisa que muitas vezes vão em direções opostas dos pressupostos teórico-metodológicos das pesquisadoras e dos pesquisadores que os adotam, assim como em nosso caso, especificamente a perspectiva feminista que guia nossa pesquisa. Nós propomos então uma revisão feminista de literatura, não como meramente uma revisão de literatura de pesquisas feministas na educação matemática, mas como a mobilização de conceitos teóricometodológicos feministas no processo de revisão de literatura, como conhecimentos situados e afeto como dispositivo para se operar com/no fenômeno ao se relacionar com a literatura. Desse modo, o processo de revisão de literatura pode ser pensado-sentido como um importante terreno para se criar relações-encontros com ambos pesquisas e pesquisadoras(es), enquanto reconhecemos o potencial de agência que a literatura tem com a gente. Assim, nos aproximamos de outros modos de conhecer-fazer pesquisa em educação matemática, em emaranhamentos com a literatura, práticas matemáticas, feminismos, humanos e não humanos, linguagens, mecanismos de busca, entre outros. Nesse terreno, afetamos e somos afetadas pela literatura, e esses encontros abrem novas direções-conexões que nos permitem nos movimentar em direções outras de normas excludentes e patriarcais da academia.

Keywords: estudos feministas. metodologia de revisão de literatura. métodos pós-humanos. conhecimentos situados. afeto.

#### RESUMEN

En encuentros entre investigadoras interesadas en revisar la literatura de investigaciones feministas con/en la Educación Matemática, emerge un proceso de problematización de los métodos de revisión de literatura comúnmente utilizados en esta área. Guiadas por el deseo de considerar la revisión de literatura como una parte constitutiva del hacer investigación, creamos una zona de circulación entre un método de revisión de literatura común en nuestra comunidad, la revisión sistemática de literatura, y lo que aquí denominamos revisión feminista de literatura. Nuestro argumento es que los métodos convencionales de revisión de literatura llevan consigo fuertes presupuestos teóricos, muchos de los cuales están alineados con enfoques cuantitativos-positivistas que a menudo se contraponen a los marcos teórico-metodológicos de quienes los adoptan. Este es también nuestro caso, particularmente con la perspectiva feminista que guía nuestra investigación. Por ello, proponemos una revisión feminista de literatura, no como una simple revisión de investigaciones feministas en la Educación Matemática, sino como la movilización de conceptos teórico-



metodológicos feministas en el proceso de revisión de literatura, tales como los conocimientos situados y el afecto como dispositivos para operar con/en el fenómeno al relacionarnos con la literatura. De esta manera, el proceso de revisión de literatura puede ser pensado-sentido como un terreno crucial para crear relaciones-encuentros con investigaciones e investigadores, reconociendo al mismo tiempo el potencial de agencia que la literatura ejerce sobre nosotras. Esto nos permite aproximarnos a otras formas de conocerhacer investigación en Educación Matemática, enredándonos con la literatura, las prácticas matemáticas, los feminismos, los agentes humanos y no humanos, los lenguajes, los motores de búsqueda, entre otros. En este terreno, afectamos y somos afectadas por la literatura, y estos encuentros abren nuevas direcciones-conexiones que nos permiten movernos hacia horizontes distintos de las normas excluyentes y patriarcales de la academia.

Palabras clave: estudios feministas. metodología de revisión de literatura. métodos posthumistas. conocimientos situados. afecto.

#### **Encounters among readers**

When conducting research, doing a literature review (LR) is pointed out as an important and necessary step to: getting to know one's field of research; situating/validating one's research contribution/novelty within the research field; identifying different research fields in which the research takes place (e.g. transdisciplinary research); among others. This holds true in the Mathematics Education research field, followed by various methods that appear as a possibility for the researcher: systematic literature review, scoping literature review, narrative literature review, critical literature review, etc. (Gough et. Al., 2012). While these approaches may overlap, it's up to the researcher to decide which pre-established method best suits their goals.

In an encounter between us, the co-authors of this paper, discussing what method we should adopt to review feminist literature in mathematics education, we set in motion a problematization of the very process of literature review. Reflecting on some of the ethical-political research stances that guide our own research, i.e. feminist perspectives such as non-humans as agentic entities that can affect and be affect by us, we started posing questions such as: How does the literature that we "review" affect us and in which ways can such affect be a force to think about and relate to the literature? How does the literature review allow us to employ such effects into an analytical sensibility? We sought to understand the entanglement of literature, researchers, and affects as interconnected materialities guiding our embodied engagement with research. We wanted to learn from feminist studies in Mathematics Education and explore how encounters with this literature could shape our research in transformative ways. None of the pre-established LR methods we had seen so far seemed to accommodate these relational and affective dimensions. This led us to scrutinize the underlying assumptions of traditional approaches, such as scientific neutrality or objectivity.

In this essay, we argue that conventional methods of literature review carry heavy theoretical assumptions, many of which are aligned with quantitative-positivist approaches that sometimes clash with one's own theoretical-methodological frameworks, such as the feminist perspective that guides our research. Engaging with existing publications—their knowledge, theories, results, and methodologies—is not a neutral act but a relational encounter with the methods and researchers behind them.

By creating a circulation zone between some of those established literature review methods and what we are calling *feminist literature review*, i.e., a feminist approach to the literature review, we bring some considerations about the importance of making the literature review a constitutive part of the process of doing research. To do so, we mobilize feminist theoretical-methodological concepts, as situated knowledge (Haraway, 1988) and affect (Olsson, 2013) as an apparatus (Barad, 2003, 2007) to operate within the phenomena of reviewing feminist literature in mathematics education. Engaging with those



concepts, we identify first marks of what it can be to do a feminist literature review. For instance, preparing the body-researcher for the relationships that will be created with the LR process; drafting an LR scenario in which we delimit but not determine the terrain in which the affects will emerge; and opening and tracing affects arising from the LR scenario.

We propose a feminist literature review not as a new trend to be followed, but as an invitation to think critically about the literature review process within different theoretical-methodological frameworks in mathematics education. For us, the literature review process can be seen-sensed as an important terrain to create relationships-encounters with both research and researchers and come closer to ways of knowing-doing research in entanglements with literature, mathematical practices, feminisms, human beings, languages, machines, and so on. In this terrain, we affect and are affected by the literature, and its encounters open up for new directions-connections rather than the ones that support (patriarchal) excluding existing norms in academia.

#### **Encounters with feminisms**

For a long time, the strive for objectivity in knowledge production has been questioned within feminist theories (e.g., Haraway, 1988, 2001; Harding, 1992; Lycke, 2010). On the one hand, these feminist critics argue for knowledge that takes into account facets that have been erased from the scientific discourses, such as the socio-historical-material conditions in which a discourse is produced. On the other hand, the constant use of concepts such as scientific objectivity, neutrality, universality, and the use of reason to the detriment of other senses, is still persistent in a large part of the humanities and educational sciences. This further reinforces a perspective of science made by and for a single type of subject: rational disembodied, de-historicized, universal, and transcendent knowing self-being, etc.

Haraway (1988) argues that knowledge production cannot be distinguished from the object of knowledge, nor from the conditions that make its becoming possible. She questions the separation between the subject of knowledge and the object of knowledge that has been created under the label of objectivity. She states that there is not a position "from outside" where one can observe and analyze the world in a detached way, nor an objective picture of reality "out there". Instead, knowledge production takes place in a context where the agents involved —human and non-human— are co-responsible for what is happening. This is what she calls *situated knowledges* (p. 581).

In the topography of situated knowledges, it is important to emphasize the partial position of the subject of knowledge, since a knower is always regarded as never finished but complete, "and therefore able to join with another, to see together without claiming to be another" (Haraway, 1988, p. 586). The same idea is also present in Barad's work when she argues that "We' are not outside observers of the world. Nor are we simply located at particular places in the world; rather, we are part of the world in its ongoing intra-activity". The concept of intra-action is created as an alternative to the concept of interaction. The last presupposes two different entities in relation to each other as a phenomenon. To Barad (2003, 2007), there are no different entities a priori to the phenomenon, instead, the entities are always in the process of becoming, together with all the material-discursive practices that are constitutive and constitute the phenomenon. One example is the socio-historical-material conditions that shape the phenomenon and at the same time in which the phenomenon is possible to emerge.

Barad (2003) also uses Bohr's idea of *apparatus* to talk about specific cuts we make with/on phenomena when we operate research: "[A]pparatuses are dynamic (re)configurings of the world, specific agential practices/intra-actions/performances through which specific exclusionary boundaries are enacted" (p. 816). In the scientific context, an apparatus can be a telescope, microscope, cameras, computers, audio recorders, etc. We can also understand as apparatus the methodologies used for the production of data, as, for example, the methodology chosen for the literature review process or the conceptual tools we adopt to think-sense with the world. In the context of this article, we intend to use the concept of affect as an apparatus to produce agential cuts in the process of reviewing feminist literature.



We are interested in exploring how literature affects us and vice-versa, considering both us and literature as agentic materialities. We understand *affect* as the body's potentiality to transform and act (Olsson, 2013). In this way the body is not a blank page that acts according to our mind's commands; and consciousness is a very limited process that doesn't reflect the body's potential to act. Then, emotions are how we experience the body's potential to act changing. For example, emotions such as frustration, sadness, happiness, joy and excitement can be related to increasement and restrictions in the body's potential to act. Drawing on Deleuze, Olsson (2013) argues that it is important to distinguish emotions and affects, and to acknowledge the importance of emotions to notice affects, since emotions are marks of "vitality, aliveness and changeability" (Olson, 2013, 250).

The notions of situated knowledge and affect as an apparatus will be deployed in the next sections. Thinking-sensing with these notions generates tensions with(in) the narratives present in the field of mathematics education about literature review methodologies. We present our encounter with the process of producing a literature review as the creation of a *zone of circulation* between the systematic literature review and what we here call a feminist literature review. A zone of circulation is not a zone of comparison between two literature review performances —we are not interested in creating a dichotomy—but rather a zone of/for relationships. We want to unfold

[a] map of tensions and reasonances between the fixed ends of a charged dichotomy better represents the potent politics and epistemologies of embodied, therefore accountable, objectivity. [...] Feminist accountability requires a knowledge tuned to reasonance, not to dichotomy. (Haraway, 1988, p. 588)

In other words, establishing binaries mobilizes rational analytics which categorizes, distinguishes and orders —creates ranks on— the things in the world. In contrast, the notions we mobilize constitute an analytical sensibility that allows fluidity and lets us unfold a terrain where possible new relationships could be established. Thus, they provide different affordances of knowing-being while performing a literature review.

## Encounters with(in) the process of LR

Researchers' positions on what science is, what counts as theory, what methodologies could be adopted, and so on differ greatly in published studies. However, one point of agreement is the importance of connecting with existing literature for the purpose of finding a base in the field, identifying research gaps, constructing new research questions, or simply showing the researcher's standing in and understanding of the field (e.g., Bryman, 2016, Petticrew and Roberts, 2006).

Gough et al. (2012) argue that, among different methods-approaches, the systematic literature review is "a review of research literature using systematic and explicit, accountable methods" (p. 2). Its value hence differs from other LRs as it is characterized by being "rigorous and transparent in each step of the review process, to make it reproducible and updateable." (Zawacki-Richter et. al., 2020, p. vi, our emphasis). This methodology caught our attention for its vast representation within mathematics education (e.g., Depaepe et al., 2013; Ryve, 2011; Rahman et al., 2021), as well as for its use within educational policy and practice (Zawacki-Richter et. al., 2020). Also, it is connected with other types of literature review (e.g., scoping review and quick review) in discussions on the extent of methodical systematicity, or on the capacity for communicating preliminary results.

According to Hammersley (2020), systematic literature reviews became prominent in the second half of the 20th century. It is related to the problem of effectiveness in medicine treatments and its lack of "scientific verifiability", which is central to the evidence-practice-based movement, i.e., the idea that practice should be guided by scientific evidence that attests its efficacy. Later on, this idea also spread to other research areas, and education and mathematics education were not the exception.

As very well pointed out in Hammersley (2020), positivist practices and systematic literature reviews are closely tied. Mobilizing our notions of situated knowledge and intra-activity, concepts such as



transparency, replicability, and updatability are put under question as it becomes very difficult (not to say impossible) to make explicit all the entities that are operating within the phenomena. Accordingly, it is not possible to replicate a study considering the researchers' situatedness.

Regarding its procedures, Newman and Gough (2020) discuss the impossibility of defining a fixed structure to the systematic literature review across the fields, since each field has its specificities. However, they describe nine steps that seem to be present in systematic reviews within educational contexts:

- 1. Developing research questions to give "each review its particular structure and drives key decisions about what types of studies to include; where to look for them; how to assess their quality" (p. 7).
- 2. Designing conceptual framework "to develop awareness and understanding of the phenomena under scrutiny and to communicate this" (p. 7).
- 3. Constructing selection criteria makes the review "transparent and therefore consistent" (p. 8).
- 4. Developing search strategies for "how you will find relevant research in other sources including 'unpublished' or 'grey' literature" (p. 8–9).
- 5. Selecting studies using selection criteria by reading titles and abstracts to select the material (p. 11).
- 6. *Coding studies* to include details of each study, as well as the ways it was undertaken, to allow assessment of the quality and relevance.
- 7. Assessing the quality of studies by judging the appropriateness, quality of the execution, methods, and the study's relevance to "minimizing the effects of bias" (p. 13).
- 8. Synthesizing results of individual studies to answer the review research question in an "attempt to integrate the information from the individual studies to produce a 'better' answer to the review question than is provided by the individual studies" (p. 14).
- 9. Reporting findings by publishing and disseminating results.

It's certainly productive to conduct a systematic literature review for determined purposes, within determined theoretical-methodological assumptions. Hence, a literature review that aims to be exhaustive and conducted by a large team of researchers, needs a series of procedures to follow, as the ones above. It is a good guide to keep the group on track about what each one is doing.

However, researchers who might adopt theoretical-methodological frameworks that go in opposite directions than positivist stances – such as the feminist concepts employed here – need to be aware of how certain concepts —transparency, consistency, assessment of appropriateness, quality of execution, minimization of bias, and 'better' answers— (re)produces a very specific way of seeing-doing research. The idea of science deployed with such concepts implies a possibility of having one observer on one side and the observed on the other, which is a way of understanding-doing research that is not neutral and assumes ethical-political instances.

For us, the literature review process can be seen-sensed as an important terrain to create relationships/encounters with both research and researchers with(in) one's field or connections among fields. It is a terrain of intra-actions where we come closer to ways of knowing-doing research in entanglements with literature, mathematical practices, feminisms, human and non-human agencies, languages, computers and search engines, and so on. In this terrain, we affect and are affected by the literature, and its encounter opens up new directions/connections that would not be possible otherwise.



In the next section, we present brief considerations about our process of doing-sensing the literature review, that it's still going on. We enunciate three marks of the movements that we have done so far, in contrast with the list of steps of the systematic literature review, to create a terrain of tensions and resonances where one can inhabit. Instead of following systematic procedures, we are interested in the marks produced by the LR process since "what is important about causal intra-actions is the fact that marks are left on bodies. Objectivity means being accountable to marks on bodies" (Barad, 2003, p. 824).

#### **Encounters with a feminist literature review**

As we started talking about our common theoretical and methodological interests, we desired to study and discuss them together. This allowed us to create a common space to make the interwoven relationships from this first conversation grow. This action can be considered the first mark of a feminist literature review:

Preparing the body-researcher for the relationships that will be created with the LR process. This mark has to do with being "embedded" in the theory in such a way as to create other sensibilities that would not emerge otherwise. For example, it was important for us to sit together and discuss the role of literature in the LR process, to begin to notice the literature as intra-acting with us, i.e., the agentic force of the literature. Preparing the body-researcher is a process that crosses all the steps of the literature review. It is an ongoing process. The body-researcher is always in the process of becoming. For instance, we noticed that getting back to the theories-concepts that drive our research helped us to decide what papers to look for, or what we investigate in the papers we engaged with.

When discussing our previous encounters with gender and feminism within mathematics education, we shared files and folders on our computers. Interestingly, one is named "Genus" and another one is named "Gênero – pesquisas". These are the words gender in our own mother tongues (Swedish and Portuguese respectively). We discussed whether to include or exclude these files from our literature review. As they came from our readings of feminist theories, recommendations from conferences, seminars, informal discussions with colleagues, and so on, these texts had become a part of our bodies-researchers. Our concern was not replicability or transparency but to value our situationality, and therefore we decided that these previous encounters would be a constitutive part of our literature review.

To expand our preliminary folders, and to produce new encounters with research(ers) that were not yet familiar to us, we did a search using the platform EBSCO Information Services. We used the keywords 'feminism', 'mathematics', and 'education' and their synonyms ('feminist, women's studies, gender roles'; 'math'; and 'school, learning, teaching, classrooms, education system'). The synonyms were a feature of the platform, and we ended up with 20977 results. Here it comes to play the features given by the platform that decides which synonyms were to be included or not, but also our own 'limitation' of not being able to read 20977 papers. We noticed the agency of the searching motor in the process.

Rethinking the keywords in a way that was possible for us to work with the final results, we caught ourselves considering whether to include or not "gender studies" as a synonym for feminist studies. As our previous research pointed out (Viana, 2021), gender studies in mathematics education usually focus on gender differences in performance in mathematics activities, often employing only men and women categories, while feminist sutdies tends to be more broad and question the very structures that produces the gender differences that the gender studies address. We decided then to use only the keywords 'feminism' (and feminist as a synonym), and 'Mathematics' (or math or math education or mathematics education) in our new search, and it was possible because our focus was less on covering the field and more on what type of papers could potentially push our bodies-work in new directions.

While changing the key-words, we also noticed that we didn't have a research question to be answered by the literature to guide our process of decision-making of what key-words to use; instead, we had a



research scenario that made sense to opt to establish connections with certain types of literature and not others, which is the next mark of our process of literature review.

Drafting a research scenario allowed us to delimit (but not determine) the terrain to let the affects emerge. Many things were all part of our research scenario: the theories, the documents we had previously read, the platforms, the language(s), the keywords, etc. When we no longer consider a separation between who observes and the thing observed —or stop imagining the researcher being on one side and literature to be reviewed on the other—, we feel that "the primary epistemological unit is not independent objects with inherent boundaries and properties but rather *phenomena*" (Barad, 2003, 815, our emphasis). And the phenomena in question are the researcher-bodies in their affections with literature, and the computer, and the search tools, and the language, and ...

Thinking about our discussion on differences between gender and feminist studies in mathematics education (reference omitted for blind review), we decided to discard 'gender' and rather use the keywords 'feminism' and 'feminist' as synonyms and preserve the other keywords. This would narrow the extent of the literature. Then our concern became how to create ways to go individually over the new materials that we found, while still being able to catch up with each other, to mobilize the affect as an apparatus to intra-act with the new literature. This turned challenging since we had learned to respond with our mind-bodies according to a particular way of reasoning closely related to patriarchal practices. It is a constant struggle to sense-read the affect during the process. Barad (2003) points to this difficulty:

Apparatuses are constituted through particular practices that are perpetually open to rearrangements, rearticulations, and other reworkings. This is part of the creativity and difficulty of doing science: getting the instrumentation to work in a particular way for a particular purpose (which is always open to the possibility of being changed during the experiment as different insights are gained). (p. 816-817)

We needed (and still need) to constantly create ways to break with the strong discourse in which science is a standard-bearer for reason as a guide during our practices. In intra-actions with literature, our attention strives to be guided by the increased/decreased intensity of our body-researchers' capacity to act. In other words, which literature makes our body act and how? In one of our conversations, we realized that many times, while reading a text, we often become restless in our chair; we start to argue with the "author", and/or feel that the author has just translated our thoughts. Some other times one may even get upset! These reactions are indications that something within our capacity to act is happening, and it requires attention.

Here there is an example of an episode that particularly caught our attention. One specific article left one of us *astonished*. With a provocative title, 'Do people care if men don't care about carrying?' (Block et al., 2019), the paper questions why there is so much attention devoted to increasing women's participation in Science, Technology, Engineering, and Mathematics (STEM) fields, while little effort is being devoted to increasing men's participation in 'caring fields' such as preschool teaching or nursing. *Uneasiness* and a need to share the content of the article took hold of one of us. It was here that we realized the next mark.

Opening and tracing affects invites us to be open to the intra-actions in between us and the literature and to let ourselves be affected by it. It is a part of the sensibilities, for example, to notice and trace how our bodies react to the papers while we are reading them. Emotions can be accessing points to notice affects. To trace them has to do with perceiving the ways that the scenario changes and the capacity of action in our bodies increases or decreases.

The particular encounter mentioned before pushed us in the direction of rethinking our own practices of doing research and invited us to highlight the connections between mathematics education research with a feminist concern and capitalist practices (see Neto and Valero, 2020). It also provoked us to rethink the process of doing the literature review, since after this reading we decided to investigate what ethical-political assumptions were being deployed in feminist research within mathematics education. In other words, we started to investigate the justifications given by the researchers to develop their research.



The literature review then took another way of operating that would not be possible without preparing the body-researcher to manage the relationships that are being woven, to be open to the unknown by tracing a research scenario, as well as tracing the affections that the encounters provoke. *Astonishment* and *uneasiness* were the entrance door for us to explore something that became very important in our encounters with the literature: It is emotions that mark a change in the intensity in our bodies as we intraact with the literature. It produces affects that were constitutive of our LR.

## An open door for future encounters

In this paper, we bring some considerations about the importance of thinking about the literature review as a constitutive part of the process of doing research. To this end, we mobilized analytical sensibilities as situated knowledge and affects as an apparatus to start building what we called here a feminist literature review, in a circulation zone between the latter and a systematic literature review. In this movement, we noticed that the systematic literature review carries heavy theoretical assumptions, such as transparency, consistency, assessment of appropriateness, quality of execution, minimization of bias, and the production of 'better' answers to research questions. While this method might be appropriate in certain occasions, such as a literature review conducted by a large number of researchers or with a large data set, those principles(re)produces a very specific way of seeing-doing research closely tied with quantitative-positivist paradigms.

We also brought forward three marks of the feminist literature review process that emerged in the zone of circulation. *Preparing the body-researcher* is the first mark, but it crosses the entire literature review process, and it's related with preparing ourselves to the encounters between us and the literature. It implies being "embedded" in theory as a way to create sensibilities to touch and being touched by the literature. The second mark is to *draft a research scenario*, instead of a research question to the literature, i.e., a terrain in which the relationships between us and the literature can grow. It's part of this terrain the body-researchers, the theories that inspire us, the articles we read, the searching platforms, the language(s), the keywords used to search for new literature, and so on. Once in this terrain, we need to *opening and tracing the affects* that emerge in the intra-action between us and the literature. To be open for encounters that might bring feelings, such as the encounter described before that let us unease or might cause discomfort, is an important mark for our literature review process because it's exactly through the feelings that our body-researcher is moved in different directions, i.e., out body-researcher is affected by the literature and this movement creates new articulations and possibilities to connect with new theories/ideas/people/...

We hoped to make it clear that our aim wasn't to establish a new literature review methodology, or even a hierarchy between different literature review methodologies. Instead, what drove us was the desire to do a literature review as a dynamic part of our research, aligned with our theoretical and methodological assumptions, and to explore the potentialities that this encounter could bring to the research we are doing. We encourage the readers to also play with these possibilities with different theories-methodologies, such as, for example, a queer literature review, or a decolonial literature review. We believe that this process could generate "knowledge potent for constructing worlds less organized by axes of domination" (Haraway, 1988, p. 585).

One important remark is that the feminist literature review is not feminist because it is being mobilized by people who refer to themselves as women and/or feminists. This single reason is empty and could be even counterproductive since it emulates a binary logic which is the center of the feminist critiques that inspire us. It is a feminist literature review because it questions dominant narratives around the concept of humans, such as the possibility of having a researcher on one side and literature as a passive object on the other, or the possibility of reducing researchers' bias during the process of doing research, in this case in mathematics education.

Lastly, we acknowledge the importance of the encounters as a constitutive part of mathematics education research. The conversations among researchers, the research group meetings, the conferences, etc.,



create connections that affect our bodies-researchers to act. Nonetheless, research seldom acknowledges the agency in the togetherness because it is not the rational part of the 'scientific process'. Our point is that these encounters are important, even for the literature review. We should give more credit to the relationality and randomness of science, and restrain the desire to clean it and make it 'beautiful', right, and solid, according to certain patriarchal existing norms in academia. This is the same idea of the beauty of science that is reinforced by mathematical discourses such as neutrality, abstraction, axiomatization, and so on. We hope that this paper could be seen as opening the door for future encounters with new ways of doing the literature review, and with researchers who could be interested in discussing new ways of doing science.

#### References

Barad, K. (2003). Posthumanist performativity: Toward an understanding of how matter comes to matter. Signs: *Journal of women in culture and society*, 28(3), 801-831.

Barad, K. M. (2007). *Meeting the universe halfway*: Quantum physics and the entanglement of matter and meaning. Duke University Press. http://www.loc.gov/catdir/toc/ecip0619/2006027826.html

Block, K., Croft, A., De Souza, L., & Schmader, T. (2019). Do people care if men don't care about caring? The asymmetry in support for changing gender roles. *Journal of Experimental Social Psychology*, 83, 112–131. https://doi.org/10.1016/j.jesp.2019.03.013

Bryman, A. (2016). Social research methods. Oxford University Press.

Depaepe, F., Verschaffel, L., & Kelchtermans, G. (2013). Pedagogical content knowledge: A systematic review of the way in which the concept has pervaded mathematics educational research. *Teaching and Teacher Education*, 34, 12–25. https://doi.org/10.1016/j.tate.2013.03.001

Gough, D., Oliver, S., & Thomas, J. (Eds.). (2012). An introduction to systematic reviews. SAGE.

Hammersley, M. (2020). Reflections on the Methodological Approach of Systematic Reviews. In O. Zawacki-Richter, M. Kerres, S. Bedenlier, M. Bond, & K. Buntins (Eds.), *Systematic Reviews in Educational Research*: Methodology, Perspectives and Application (pp. 23–39). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-27602-7

Haraway, D. (1988). Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective. *Feminist Studies*, 14(3), 575–599. https://doi.org/10.2307/3178066

Harding, S. (1992). After the neutrality ideal: Science, politics, and strong objectivity. *Social research*, 567-587.

Lykke, N. (2010). Feminist studies: A guide to intersectional theory, methodology and writing. Routledge.

Neto, V. F.; Valero, P. (2020). A (in)equidade de gênero em educação matemática: pesquisando as pesquisas. In: Harryson Lessa Júnio Gonçalves. (Ed). *Educação Matemática & Diversidades*. 1ed. Porto Alegre: Editora Fi, p. 195-213.

Newman, M., & Gough, D. (2020). Systematic Reviews in Educational Research: Methodology, Perspectives and Application. In O. Zawacki-Richter, M. Kerres, S. Bedenlier, M. Bond, & K. Buntins (Eds.), *Systematic Reviews in Educational Research* (pp. 3–22). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-27602-7 1

Olsson, L. M. (2013). Taking Children's Questions Seriously: The Need for Creative Thought. *Global Studies of Childhood*, 3(3), 230–253. https://doi.org/10.2304/gsch.2013.3.3.230



Petticrew, M., & Roberts, H. (2008). Systematic reviews in the social sciences: A practical guide. John Wiley & Sons.

Rahman, N. A., Rosli, R., Rambely, A. S., & Halim, L. (2021). Mathematics Teachers' Practices of STEM Education: A Systematic Literature Review. *European Journal of Educational Research*, 10(3), 1541-1559.

Ryve, A. (2011). Discourse Research in Mathematics Education: A Critical Evaluation of 108 Journal Articles. *Journal for Research in Mathematics Education*, 42(2), 167–199. https://doi.org/10.5951/jresematheduc.42.2.0167

Zawacki-Richter, O., Kerres, M., Bedenlier, S., Bond, M., & Buntins, K. (2020). *Systematic reviews in educational research*: Methodology, perspectives and application. Springer Nature.

