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"What's mathematics got to do with it?": notes against the curricular injustice of the right to justification

"¿Qué tienen que ver las Matemáticas?": apuntes contra la injusticia curricular del derecho a la justificación

"Qu'est-ce que les maths ont à voir avec ça?": notes contre l'injustice curriculaire du droit à la justification

"O que a matemática tem a ver com isso?": apontamentos contra a injustiça curricular do direito à justificação

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#### **Abstract**

In this essay, we aim to argue how what Rainer Forst defends as the Right to Justification is a contradiction in the production of knowledge that lends itself to offering theoretical foundations to the formative processes that Mathematics and Mathematics Education are subjected. In methodological terms, the exercise undertaken in this essay is inspired by Habermas' reconstruction of the history of theory. Thus, by pointing out one of the obstacles to emancipation that plague Mathematics Education as an area of knowledge production in modern times, the discussions and reflections in this article have sought, above all, to draw the attention of the Mathematics Education community to a problem of modern times.

**Keywords:** Rainer Forst, Justification, Reconstruction, Curricular Injustice, Curriculum.

### Resumen

En este ensayo, pretendo demostrar cómo lo que Rainer Forst defiende como Derecho a la Justificación es una contradicción en la producción de conocimiento que se presta a ofrecer

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fundamentos teóricos a los procesos formativos que atraviesan las Matemáticas y la Educación Matemática. En términos metodológicos, el ejercicio emprendido en este ensayo se inspira en la reconstrucción de la historia de la teoría de Habermas. Así, al señalar uno de los obstáculos a la emancipación que aquejan a la Educación Matemática como área de producción de conocimiento en los tiempos modernos, las discusiones y reflexiones de este artículo han buscado, sobre todo, llamar la atención de la comunidad de personas que componen la Educación Matemática sobre un problema de los tiempos modernos.

Palabras clave: Rainer Forst, Justificación, Reconstrucción, Injusticia curricular, Curriculum.

#### Résumé

Dans cet essai, je me propose de montrer comment ce que Rainer Forst défend comme le droit à la justification est une contradiction dans la production du savoir qui se prête à offrir des fondements théoriques aux processus de formation que subissent les mathématiques et l'enseignement des mathématiques. Sur le plan méthodologique, l'exercice entrepris dans cet essai s'inspire de la reconstruction de l'histoire de la théorie par Habermas. Ainsi, en mettant en évidence l'un des obstacles à l'émancipation qui pèsent sur l'enseignement des mathématiques en tant que domaine de production de connaissances à l'époque moderne, les discussions et réflexions de cet article ont cherché avant tout à attirer l'attention de la communauté des personnes qui composent l'enseignement des mathématiques sur un problème de l'époque moderne.

Mots-clés: Rainer Forst, Justification, Reconstruction, Injustice curriculaire, Curriculum.

#### Resumo

Neste ensaio, objetivamos discutir como o que Rainer Forst defende como Direito à Justificação se constitui numa contradição da produção de conhecimento que se presta(rá) a oferecer fundamentação teórica aos processos formativos que perpassam pela Matemática e a que a Educação Matemática se presta, sendo que, em termos metodológicos, o exercício empreendido neste ensaio se inspira na reconstrução da história da teoria em Habermas. Assim, ao apontar um dos obstáculos à emancipação que assolam a Educação Matemática enquanto área de produção de conhecimento nos tempos hodiernos, as discussões e reflexões pautadas neste artigo buscaram, sobretudo, chamar a atenção da comunidade de pessoas que compõem a Educação Matemática para uma problemática dos tempos hodiernos.

**Palavras-chave:** Rainer Forst, Justificação, Reconstrução, Injustiça curricular, Currículo.

# "What does mathematics have to do with it?": notes against the curricular injustice of the right to justification

In recent years, issues related to social markers—such as gender, sexuality, race, and ethnicity—have become more explicitly integrated into the scope of knowledge production in mathematics education in Brazil. In this regard, some authors (Gutiérrez, 2013, Valero, 2018) in the field have drawn attention to this paradigm shift<sup>3</sup>, in which, without abandoning the genesis of the commitment to knowledge production in the field, some people who produce in Mathematics Education have turned their attention to knowledge production via social markers<sup>4</sup>, seeking to challenge the idea of a supposed neutrality of mathematical knowledge in the face of social reality (Taveira, 2023, 2025). This paradigm shift has caused discomfort in a significant part of the Mathematics Education community—and also among individuals outside this community—precisely because it confronts the idea of the neutrality of mathematical knowledge, which still resonates strongly in the social imagination as infallible, unquestionable, and devoid of values<sup>5</sup>.

Based on the above, and understanding that the notion of curricular injustice reveals the contradictions inscribed in actions and prescriptions that shape educational processes (Taveira, 2025), we propose to discuss how what Rainer Forst conceptualizes as the right to justification presents itself as a structural tension in the production of knowledge intended to theoretically ground educational practices mediated by mathematics and mathematics education. In methodological terms, the theoretical exercise developed in this article draws upon the reconstruction of the history of theory, as outlined by Jürgen Habermas, seeking to explain how certain rationalities, by becoming normative without reciprocal and generalizable justifications, end up consolidating forms of exclusion and silencing within the educational field.

In terms of structure, we begin the essay by presenting an overview of the recent history of research in Mathematics Education in Brazil, highlighting the paradigm shift in the field based on three dimensions that characterize any area of investigation: scientific journals, academic events, and research groups. Next, we focus on the theoretical framework that underpins the reflections developed in this essay, highlighting Rainer Forst's contributions on

<sup>&</sup>lt;sup>3</sup> Here, we understand this paradigm shift as a political stance.

<sup>&</sup>lt;sup>4</sup> By social markers, we mean the factors that place an individual in a group, namely gender, sexuality, race, ethnicity, social class, among others.

<sup>&</sup>lt;sup>5</sup> While giving a lecture at a public institution located in the interior of the state of São Paulo at an event during Mathematics Degree Week, where Nancy Fraser's two-dimensional theory of social justice was discussed as a basis for discussions on curricular injustices related to gender and sexuality in initial training in the Mathematics Degree – the result of the first author's master dissertation (Taveira, 2023), developed under the guidance of the second author – a person present at the end of the lecture began to question the content of the speech, with aggressive statements in the sense of an attack, with the aim of "protecting" mathematics from any and all forms of criticism, feeding the idea of neutrality in this field of knowledge. Episodes such as these occur with people who work with social marker themes in Mathematics Education, as we have learned through personal communication.

the right to justification and its guiding principles, especially universality and reciprocity. Finally, we reconstruct recurring debates in public spaces when topics related to mathematics education are intertwined with social markers, concluding with considerations on how the path outlined here fits into the effort to reconstruct the recent history of theory in the field.

### An overview of current research in mathematics education

Even before the founding of the Brazilian Society of Mathematics Education (SBEM) in January 1988 (Miguel, Garnica, Igliori & D'Ambrosio, 2004, Muniz, 2013), research in mathematics education in Brazil was already being conducted in graduate programs at universities across the country, concentrated mainly in the Southeast region. With the founding of SBEM, research in the field was institutionalized and a community of people interested in investigating the various phenomena that permeate and permeate the processes of teaching and learning mathematics in Brazil was formed.

Recently, with the 'paradigm shifts' – for example, Rochelle Gutiérrez (2013) calls this movement the Sociopolitical Shift, while Paola Valero (2018) calls it the Cultural Politics of Mathematics Education<sup>6</sup> – research in Mathematics Education has begun to include research topics related to social markers<sup>7</sup>, such as gender(s) (and/or) sexualities, race, ethnicity, among other topics that affect and influence the production of knowledge. Examples of such productions are not scarce in contemporary literature in the field. Examples of discussions on mathematics and issues of diversity, gender(s), and/or sexuality include the works of Gonçalves (2020), Esquincalha (2022, 2024), Neto and Silva (2021), Peralta (2022a; 2022b), and Taveira (2023) on mathematics and issues of race, and the works of Fernandes (2021), Silva (2023), and Purificação and Neto (2024).

As much as Gelsa Knijnik (1996, p. xi) stated in the mid-1990s that "times have indeed changed" and that "in these new conditions we live in, times have also changed for mathematics education," it is only very recently—in a period of less than fifteen years—that these themes have really begun to take hold in research in the field<sup>8</sup>.

Three factors related to any area of research can effectively demonstrate the above statement – in addition to illustrating the current concerns in the field – namely: (a) the first –

<sup>&</sup>lt;sup>6</sup> In addition to Rochelle Gutiérrez and Paola Valero, Stephen Lerman (2000) advocates for a social shift in Mathematics Education.

<sup>&</sup>lt;sup>7</sup> As an example, we point out that recently – between June 17 and 21, 2024 – the first edition (virtually) of the School of Gender and Sexuality Studies in Mathematics Education - E<sup>2</sup>GSEM [https://www.even3.com.br/e2gsem/] took place and, according to the Organizing Committee, the event had 441 (four hundred and forty-one) participants, 165 (one hundred and sixty-five) authors, and 131 (one hundred and thirty-one) submitted papers, which is significant for the Brazilian Mathematics Education community.

<sup>&</sup>lt;sup>8</sup> For example, the text by Souza and Fonseca (2009), published in one of the most renowned journals in the field in Brazil, discusses Gender and Mathematics Education – although understanding gender as the Female/Male binary.

and main – journals in the field, which are still active today; (b) scientific and academic events in the field; (c) research groups coordinated by researchers investigating in the field.

Taking the first journals in the field as an example, when we turn our attention to the first journal in the field in Brazil, Boletim GEPEM<sup>10</sup>, in its second edition<sup>11</sup>, we can see that the published texts report on experiences of classroom activities and texts that, in short, discussed the organization, content, and development of mathematics classes at various levels of education—elementary, secondary, and technical. And, in that same journal, the first special edition of a Brazilian journal discussing topics related to Gender Studies and Mathematics Education was published. Entitled 'Gender Issues and Mathematics Education: contemporary issues<sup>12</sup>', the special edition was organized by Vanessa Franco Neto and Renata Arruda Barros (2023), bringing together fourteen articles.

Another good example is Educação Matemática Pesquisa<sup>13</sup> (Mathematics Education Research), whose first volume was published in 1999 and which recently presented the Brazilian mathematics education community with a special edition entitled 'Mathematics education for historically marginalized people in the school context<sup>14</sup>' (Esquincalha, Manrique, Nogueira, & Thiengo, 2023), which brought together discussions about the concerns of Mathematics Education with the various social markers that operate systematic exclusions in our social, historical, and political reality.

The Revista de Educação Matemática<sup>15</sup> (Journal of Mathematics Education), in turn, published a special edition in 2018 entitled 'Mathematics Education, Inclusion, and Human Rights', organized by Ana Lúcia Manrique, Geraldo Eustáquio Moreira, and Douglas da Silva Tinti (2018), presenting research reports that discussed the processes of teaching and learning mathematics for people with disabilities. It is worth noting that what happened with the first publications of the GEPEM Bulletin also happened with the first editions of Educação Matemática Pesquisa and Revista de Educação Matemática, where the texts of the first issues

<sup>&</sup>lt;sup>9</sup> Regarding these three factors, we operate sociologically, showing how issues related to them are recently the result of the aforementioned paradigmatic shift. We do this by attempting to contribute to an issue debated within Critical Theory itself, namely, the sociological deficit of Critical Theory. For more information, see Melo (2017).

<sup>&</sup>lt;sup>10</sup> The GEPEM Bulletin is the first journal in the field of Mathematics Education in Brazil, with its first issue published in 1976. It is the responsibility of the Group for Studies and Research in Mathematics Education – GEPEM, an interinstitutional group based at the Federal Rural University of Rio de Janeiro. Available at: [https://periodicos.ufrrj.br/index.php/gepem].

<sup>&</sup>lt;sup>11</sup> Available at: [https://periodicos.ufrrj.br/index.php/gepem/issue/view/76].

<sup>&</sup>lt;sup>12</sup> Available at: [https://periodicos.ufrrj.br/index.php/gepem/issue/view/113].

<sup>&</sup>lt;sup>13</sup> The journal Educação Matemática Pesquisa is published by the Graduate Program in Mathematics Education at the Pontifical Catholic University of São Paulo. Available at: [https://revistas.pucsp.br/index.php/emp/issue/view/2882].

The special edition corresponded to volume 24, number 4 of the magazine and can be viewed at: [https://revistas.pucsp.br/index.php/emp/issue/view/2832].

<sup>&</sup>lt;sup>15</sup> The Journal of Mathematics Education is a periodical published by the São Paulo Regional branch of the Brazilian Society of Mathematics Education, having published its first edition in 1993. For more information, cf. [https://www.revistasbemsp.com.br/index.php/REMat-SP/about].

that make up these editions focus heavily on aspects related to the organization, content, and development of mathematics classes.

Turning our attention now to scientific and academic events in the field, we highlight three events that stand out for their proposals: the National Meeting on Mathematics Education (ENEM), the International Seminar on Research in Mathematics Education (SIPEM), and the Brazilian Meeting of Graduate Students in Mathematics Education (EBRAPEM).

ENEM is a wide-ranging event, bringing together diverse audiences – from undergraduate students interested in mathematics education to researchers in the field – and its first edition was held between February 2 and 6, 1987, in the city of São Paulo, featuring conferences, mini-courses, coordinated sessions, and round tables led by researchers, with topics related to both the teaching and learning of mathematics curriculum content in basic education and the current state and prospects of research in mathematics education in Brazil at the time. ENEM is an important event for mathematics education both because of its audience coverage and because the Brazilian Society of Mathematics Education was founded during the second edition of the event, in the city of Maringá, state of Paraná. With its last edition held remotely in 2022 due to the Covid-19 pandemic, ENEM is held every three years, and the next edition will take place in 2025, in the city of Manaus, capital of the state of Amazonas.

SIPEM, on the other hand, is an event restricted to people associated with SBEM, under the responsibility of the society's National Executive Board. Bringing together research in development in Mathematics Education in Brazil – coordinated by researchers at Brazilian universities and postgraduate programs, as well as master's and doctoral students in the field – the event aims to promote the exchange of research experiences and deepen research topics related to the working groups<sup>16</sup> that make up SBEM. Held for the first time in 2000<sup>17</sup> in the city of Serra Negra, state of São Paulo, the next edition took place between November 26 and 30, 2024, in the city of Natal, capital of Rio Grande do Norte. Both in terms of the participating audience and the nature of the work, the proceedings of the SIPEM editions present an interesting sample of the topics that have been/are being researched in the field of Brazilian Mathematics Education by each of its working groups.

EBRAPEM, on the other hand, is an event dedicated exclusively to ongoing or completed research at the master's and doctoral levels, developed in a wide range of graduate programs throughout Brazil. Held annually since 1997, the first edition took place at the

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The Working Groups that make up the Brazilian Society of Mathematics Education can be found at.: [https://www.sbembrasil.org.br/sbembrasil/index.php/grupo-de-trabalho].

<sup>&</sup>lt;sup>17</sup> The proceedings of the first edition of SIPEM can be viewed at: [https://www.sbembrasil.org.br/files/sipeml.pdf].

Universidade Estadual Paulista (Unesp) in the city of Rio Claro. In 2024, the event was held at the Federal University of Rio Grande do Norte (UFRN), in the city of Natal.

These events are relevant because, whether due to their target audience or the nature of the work, they provide an interesting sample of the concerns, issues, and questions that permeate the themes of research being developed/developed in this field in Brazil, as do journals, but on a larger scale. Both the SIPEM and EBRAPEM proceedings directly demonstrate the concerns of the research, over time, developed on the issues that constitute the extensive scope of Mathematics Education. The ENEM proceedings, on the other hand, demonstrate the multiplicity of concerns that, since 1987, have motivated research in the area.

Finally, we can observe this paradigm shift<sup>18</sup> – without forgetting what we might call the 'status' of mathematics education – in the area related to research groups that undertake studies and investigations in the field. The Study and Research Group in Mathematics Education (Lopes, 1994), one of the oldest groups in the field, for example, expresses the importance of research groups for an area of investigation.

In this sense, we highlight here some research groups that, understood institutionally as groups in Mathematics Education, Education, or Teaching, conduct research in Mathematics Education in Brazil concerned with curricular issues. Both in terms of their respective nomenclatures and the content of their studies and investigations, these groups illustrate well the paradigm shift in Brazilian Mathematics Education, with a focus on considering themes related to social markers in current studies and investigations in the field.

The NIEMS – Center for Research in Mathematics Education and Society<sup>19</sup>, coordinated by Professor Vanessa Franco Neto and based at the Federal University of Mato Grosso do Sul (UFMS), conducts research from a curricular perspective that seeks to explain the relationship between mathematical knowledge and social reality, specifically based on the relationships between Gender, Race, and Mathematics.

The MatematiQueer – Studies of Gender and Sexualities in Mathematics Education<sup>20</sup>, coordinated by Professor Agnaldo da Conceição Esquincalha and based at the Federal University of Rio de Janeiro (UFRJ), develops studies, research, and extension projects that seek to relate Gender Studies and debates on Sexuality to concerns in Mathematics Education.

The GECUDEDIS – Curriculum, Decoloniality, Diversity, and Subalternity Study Group<sup>21</sup>, coordinated by Professor Elenilton Vieira Godoy and based at the Federal University

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<sup>&</sup>lt;sup>18</sup> Because we understand this paradigm shift as a political stance, we accept other interpretations that view this phenomenon as an expansion of the field, including emerging themes on the world stage stemming from the struggles of social movements.

<sup>&</sup>lt;sup>19</sup> For more information, cf. [https://dgp.cnpq.br/dgp/espelhogrupo/790596].

<sup>&</sup>lt;sup>20</sup> For more information, cf. [https://dgp.cnpq.br/dgp/espelhogrupo/725153].

<sup>&</sup>lt;sup>21</sup> For more information, cf. [https://dgp.cnpq.br/dgp/espelhogrupo/785555].

of Paraná (UFPR), develops studies and research in Mathematics Education that, from a curricular and decolonial perspective, seek to emphasize mathematical knowledge and its social relations, addressing issues of gender and race<sup>22</sup>.

The NIPAC – Interdisciplinary Center for Advanced Research in Curriculum<sup>23</sup>, coordinated by Professor Deise Aparecida Peralta and Professor Harryson Júnio Lessa Gonçalves, and based at São Paulo State University (UNESP), develops studies, research, and extension activities in Mathematics Education with a focus on the curricular dimension. Based on contributions from Critical Theory of Society and Anthropological Theories, the investigations developed within the group also seek to explore the links between mathematical knowledge and the social markers of gender, sexuality, race, and ethnicity.

With this overview, which covers some journals, academic and scientific events, and research groups active in the field, we seek to offer a representative sample of the areas of interest that have guided research in Mathematics Education in Brazil after the paradigm shift, especially from a curricular perspective.

It is important to note that this research does not abandon what can be considered the "status" of Mathematics Education: attention to the phenomena and processes of teaching and learning Mathematics. However, especially in the post-paradigm shift context, such investigations began to explore previously neglected dimensions, such as the social insertion of mathematical knowledge and the ways in which it relates to cultural, historical, political, and social contexts.

## Rainer Forst, Justice, and the Right to Justification

Internationally recognized for his contributions to the debate on tolerance, Rainer Forst is a philosopher born in August 1964 in central-western Germany. He received his doctorate in philosophy in 1993, under the supervision of Jürgen Habermas and with John Rawls as cosupervisor, particularly between 1991 and 1992. He currently holds the chair of Political Theory and Philosophy at Goethe-Universität in Frankfurt.

In his doctoral thesis, later published as a reference work (Forst, 2010), the author seeks to critically reconstruct the main philosophical currents that have structured the contemporary debate on justice: liberalism and communitarianism. According to Melo (2010, p. 209), liberalism is characterized by "seeking to morally ground a theory of justice by abstracting

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<sup>&</sup>lt;sup>22</sup> It is worth highlighting that NIEMS, MatematiQueer, and GECUCEDIS are less than five years old, which shows how the paradigm shift has driven the creation of groups like these.

<sup>&</sup>lt;sup>23</sup> For more information, cf. [http://dgp.cnpq.br/dgp/espelhogrupo/38111].

concrete social contexts and prioritizing individual freedoms over substantive conceptions of the good." On the other hand, communitarianism emphasizes "the rooting of the normative justification of conceptions of justice in self-understandings and traditions constitutive of political communities, so that only those principles that result from a given community context can be considered just, and only there can they claim validity."

In other words, while liberal approaches minimize or completely ignore the role of context in the formulation of principles of justice—insisting on their universal and abstract validity—communitarian approaches tend to absolutize that same context, relativizing principles to the point of denying any universal claim. Based on this theoretical tension, Forst proposes an alternative that seeks to articulate the merits of both positions, overcoming the dichotomy between universalism and contextualism through the idea of a "right to justification" anchored in criteria of reciprocity and generality.

Below, I will illustrate this proposal.

Recently, the Brazilian Supreme Court upheld<sup>24</sup> the Motion for Non-Compliance with a Fundamental Precept No. 787<sup>25</sup> filed by the Workers' Party (PT). In it, the party questioned the universality of access to the Unified Health System (SUS) for transgender people who had already ratified their name and who had not undergone transgender surgery<sup>26</sup>. By admitting a male name/gender<sup>27</sup> in the Brazilian public health system, for example, there is a contradiction between the universal promise of access and institutional practices that often operate on the basis of fixed normative categories. People are automatically decoded by the system based on binary markers, such as biological sex. Thus, a trans man who has not undergone transgenitalization surgery is identified as "male" and, therefore, linked to urology care—even if his real need is for gynecological care. In this scenario, the universal right to health, as guaranteed in the Federal Constitution of 1988, is not fully realized.

This type of situation shows that the mere formalization of universal rights does not, in itself, guarantee effective access to them. While a classical liberal perspective might argue that what is important is the abstract universalization of the right—valid for all, regardless of contextual particularities—the communitarian perspective would argue that effective access can only be understood by considering the social, cultural, and identity contexts in which individuals are inserted. Thus, the refusal to provide gynecological care to trans men reveals

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 $<sup>^{24}</sup>$  The progress of the process, which began in 2021, can be checked at.:

<sup>[</sup>https://portal.stf.jus.br/processos/detalhe.asp?incidente=6093095].

<sup>&</sup>lt;sup>25</sup> For more information, cf. [https://portal.stf.jus.br/noticias/verNoticiaDetalhe.asp?idConteudo=459957&tip=UM].

<sup>&</sup>lt;sup>26</sup> Transgender surgery is a medical/surgical procedure to alter one's biological sex.

<sup>&</sup>lt;sup>27</sup> To illustrate, let's consider a transgender man who has not undergone gender reassignment surgery. In this case, the person requires gynecological healthcare, not urological care.

itself as a concrete form of injustice, caused by the lack of adequate recognition of the specificities and real demands of these subjects.

This is not a matter of asserting the superiority of one perspective over the other. Each approach has its potential and limitations, and its application depends on the normative orders to which they are linked. Our goal in this example is to illustrate how these theoretical currents deal with the dilemmas of justice in concrete situations of contemporary social life in Brazil.

Based on this debate, Rainer Forst (2010) proposes a critical reconstruction of liberal and communitarian approaches by articulating their contributions and overcoming their limitations. He argues that issues of justice should be analyzed from four distinct contexts, each associated with a form of recognition and a specific normative order (Melo, 2010):

- (a) the ethical context linked to the recognition of the ethical person;
- (b) the legal context linked to the recognition of the legal person;
- (c) the political context linked to the recognition of the citizen;
- (d) the moral context linked to the recognition of the moral person.

Each of these contexts requires that the rules in force be justifiable according to criteria that can be accepted by all those affected by them. For Forst, the legitimacy of any normative order depends on the possibility that its norms can be justified according to the principles of reciprocity and generality: that is, that they can be accepted by all participants as reasonable, and that they apply to everyone without arbitrary distinctions (Melo, 2013).

This requirement for justification is what Forst calls the "right to justification" – a normative principle that recognizes all people as moral and political agents capable of demanding public and justified reasons for the norms that govern their lives. In the case of the example mentioned, the absence of adequate justifications for not providing gynecological care to trans men reveals the failure of this principle, showing that the institutional norm in force has not passed the tests of reciprocity and universality required by a truly just order.

In other words,

reciprocity means that no one can make a claim [...] that he or she denies to the other (reciprocity of content), and that no one can simply impose their own perspectives, values, interests, or needs on the other, or claim to speak on behalf of the other's "true" interests, or on behalf of a truth that is beyond justification for shareable reasons (reciprocity of reasons) (Forst, 2018, p. 83-84).

"Universality means that the reasons underpinning the normative validity of norms [...] must be shared by all those involved, taking into account their interests and legitimate claims in a reciprocal manner" (Forst, 2018, p. 84). In this context, where what matters are the

justifications for normative orders, Rainer Forst proposes that we think of justice as the justification for these orders—or, more simply, as Justice as Justification.

Starting from the idea that justification is the best way to ground a Theory of Justice, Forst emphasizes the importance of the essentially political elements of political philosophy, conceiving normative grounding as a practical matter. For him, justification is not just an abstract question, but a concrete one, since "it is formulated by historical agents who are no longer satisfied with the justification of the normative order to which they are subordinate" (2018, p. 14).

Considering that justification is the best way to ground a normative social order that coherently incorporates the four contexts of justice he proposes (Forst, 2010) — and that only then can this order be considered just — the philosopher argues that justification is so fundamental that it constitutes a human right. Therefore, he defends the existence of the human right to justification.

For philosophers, human rights are a complex phenomenon that have a moral, legal, political, and historical dimension<sup>28</sup>. Furthermore, he understands that "we have the right not to be subordinated to certain actions or institutions that cannot be adequately justified to us" (Forst, 2018, p. 71).

And, in contemporary philosophical discussions on human rights, it is possible to find approaches that, in a peculiar way, highlight at least one of the dimensions mentioned above: (1) there are essentially *ethical* theoretical approaches, such as the theories of James Griffin, James Nickel, and John Tasioulas; (2) essentially *political-legal* approaches, such as the theories of John Rawls, Joseph Raz, or Charles Beitz; and (3) essentially *political-moral* approaches, such as the theories of Michael Ignatieff and Joshua Cohen.

Given that these three approaches highlight completely different aspects, Forst questions how it is possible to find a viable path for human rights. And, understanding that they undoubtedly have a certain substance, function, and justification, he believes that none of the three approaches above can correctly define these three elements.

For the philosopher, even the approaches mentioned that are understood as political approaches tend not to consider the political and social message of human rights: that

the claims of being not only a fully integrated member of society, but also a social and political subject who, speaking in negative terms, is free from arbitrary political and

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<sup>&</sup>lt;sup>28</sup> In addition to these dimensions, the philosopher emphasizes that we cannot forget the social dimension of Human Rights: "one cannot neglect the central social aspect of human rights – namely, that human rights, when and where they were claimed, were also linked to a situation of oppression or exploitation of individuals or groups, who saw their dignity as human beings violated and revolted against it" (Forst, 2018, p. 70).

social domination, and who, speaking in positive terms, is someone who "counts," that is, who is considered a person—someone with effective rights to justification (Forst, 2018, p. 79).

It is worth noting that, by right to justification, the philosopher understands that "This right affirms that there can be no legitimate social or political order that cannot be adequately justified to its subjects" (idem). In this scenario, "the essential function of human rights is to guarantee, protect, and express the status of people as equals with regard to their right to justification" (Forst, 2018, p. 83).

Thus, in what follows, the philosopher argues that a moral foundation for human rights must raise a legitimate claim to universal validity and must be reflective in nature—reflective because the very idea of justification is recursive considering its own normative and practical implications.

Since every moral justification of human rights must be able to discursively redeem its claim to reciprocal and universal validity, moral justification presupposes at the same time the priority right to justification on the part of those to whom the rights are addressed and who must accept this justification [...] [Thus,] the people to whom the right is intended have the right of qualified veto in relation to any justification that does not meet the criteria of reciprocity and universality (Forst, 2018, p. 83).

In what follows, Rainer Forst discusses the main differences between the approach he advocates, and the theories aligned with the three approaches, beginning by exemplifying the differences between him and Griffin. In these notes, he shows how different theories that follow the same approaches and theories that follow different approaches make mistakes regarding the essential characteristics of human rights<sup>29</sup>. By operationalizing these distinctions, he goes on to explain, albeit in a rudimentary way, the form he considers most appropriate for a comprehensive theory of human rights, considering the dimensions he points out—moral<sup>30</sup>,

<sup>&</sup>lt;sup>29</sup> Taking an example, Forst states that proponents of "minimalist" foundations of human rights [political-moral] make the same mistake as those from a normative [political-legal] perspective, where "the 'lowest common denominator' approaches risk being 'political in the wrong sense'" (Forst, 2018, p. 99).

<sup>&</sup>lt;sup>30</sup> "The criteria for justifying moral norms are those of reciprocity and universality in the strict sense, since these norms, in reflexive terms, raise a claim to be valid in a reciprocal and universal way" (Forst, 2018, p. 111).

legal<sup>31</sup>, and political<sup>32</sup> [and historical].comprehensive theory of human rights, considering the dimensions he points out—moral<sup>33</sup>, legal<sup>34</sup>, and political<sup>35</sup> [and historical].

Thus, given that for Forst, the question of justification is central to his conception of human rights, the philosopher states that "The normative foundation for a conception of human rights is the right of every person to be respected as someone who has a moral right to justification, according to which every action or norm that claims to be legitimate must be adequately justified" (Forst, 2018, p. 111).

In the midst of his discussions, presenting his perspective on the foundation of human rights<sup>36</sup> through the right to justification, Forst points to a concept that is indispensable to any theory of human rights: the concept of dignity. For the philosopher, this concept is at the heart of the idea of human rights and is neither an ethical nor a metaphysical concept: "respecting a person's dignity means recognizing them as someone who is owed appropriate reasons for actions or norms that affect them in a relevant way" (Forst, 2018, pp. 111-112).

According to Forst, human rights themselves are reflective in nature: "they are basic rights to participate in the procedures by which the fundamental rights of citizens take on a concrete and legally binding form" (Forst, 2018, p. 115). Thus, he concludes his defense of his normative foundation for human rights based on the right to justification by stating that "in short, human rights are those fundamental rights without which the status of persons as holders of the right to justification could not be secured" (Forst, 2018, p. 116).

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<sup>&</sup>lt;sup>31</sup> "The criteria for legal norms are those of reciprocity and universality within political structures of justification that presuppose the possibility of free and equal participation and compliance with the respective deliberation and decision-making procedures" (Forst, 2018, p. 111).

<sup>&</sup>lt;sup>32</sup> "The political aspect of the right to justification is particularly important, as it refers to certain institutional implications of moral argumentation in favor of Human Rights. These are moral rights of a very specific type, since they are related to a legal political authority and need to be ensured in a legally binding way," where, "a basic and just legal political structure is a basic structure of justification in which members have the possibility to deliberate and decide together on the social institutions that concern them" (Forst, 2018, p. 114).

<sup>&</sup>lt;sup>33</sup> "The criteria for justifying moral norms are those of reciprocity and universality in the strict sense, since these norms, in reflexive terms, raise a claim to be valid in a reciprocal and universal way" (Forst, 2018, p. 111).

<sup>&</sup>lt;sup>34</sup> "The criteria for legal norms are those of reciprocity and universality within political structures of justification that presuppose the possibility of free and equal participation and compliance with the respective deliberation and decision-making procedures" (Forst, 2018, p. 111).

<sup>&</sup>lt;sup>35</sup> "The political aspect of the right to justification is particularly important, as it refers to certain institutional implications of moral argumentation in favor of Human Rights. These are moral rights of a very specific type, since they are related to a legal political authority and need to be ensured in a legally binding way," where, "a basic and just legal political structure is a basic structure of justification in which members have the possibility to deliberate and decide together on the social institutions that concern them" (Forst, 2018, p. 114).

<sup>&</sup>lt;sup>36</sup> "The right to justification is not only a right to political justification, but primarily a right to be considered an independent person, capable of acting socially and at the same time capable of co-determining the social structure to which one belongs" (Forst, 2018, p. 116).

Complementing these ideas, the centrality of the right to justification in the foundation of human rights highlights the need for continuous and inclusive dialogue between social subjects. This right ensures that all people can demand and receive legitimate reasons for the norms and actions that affect them, thus promoting a space for mutual recognition and respect for human dignity. In this way, dignity is not only an abstract value, but a concrete political practice that reinforces the legitimacy of normative orders and strengthens democratic participation in the construction of a just society.

## Against the curricular injustice that operates on the right to justification in research in Brazilian Mathematics Education

When we encounter research that relates mathematical knowledge to social markers, such as that conducted after the aforementioned paradigm shift, which ultimately seeks to question the supposed neutrality of mathematics in social reality (Taveira, 2023, 2025) – read Brazilian public opinion – it is not difficult to be confronted with questions, both from people who are not in the field of research and from people who are part of Mathematics Education as a field of research, such as: 'What does mathematics have to do with this?'. And such questions are asked so regularly that they even appear as titles of some publications in the field (Neto, Borges, Oliveira, 2022, Esquincalha, 2024).

Questions of this nature seem to further reinforce the social idea that mathematics is neutral, exact, and indisputable knowledge. Or, in the words of Gelsa Knijnik: "a conception of mathematics linked to a rationalist tradition of thought, which sees it as a neutral science, free of value, disconnected from how people use it" (Knijnik, 1996, p. 123).

And such questions sometimes do not seek better explanations, but rather systematically attack people who conduct research with social markers in the field of mathematics education. Take, for example, the case of Matematiqueer – Gender and Sexuality Studies in Mathematics Education<sup>37</sup>. The group is part of the Graduate Program in Mathematics Education at the Federal University of Rio de Janeiro (UFRJ) – the host institution – and develops studies,

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<sup>&</sup>lt;sup>37</sup> We use the group that primarily investigates Gender and Sexuality in Mathematics Education because we agree with Judith Butler (2024) that Gender acts as a ghost haunting public opinion and, therefore, this example categorically and intelligibly reveals what we seek to illustrate.

investigations, and extension projects related to social markers of gender (and/or) sexuality in the field of mathematics education.

For this reason, the group's activities are systematically targeted by ultra-conservative groups who, based on the mistaken idea that the group's activities are in the field of mathematics – since it is still common in public opinion to confuse mathematics with mathematics education – but it is worth noting that while Mathematics is an exact science, Mathematics Education is a human science – accuse the people who are part of it of 'ideologizing' Mathematics.

In Mendes, Reis, and Esquincalha (2022) and Detoni, Mendes, and Esquincalha (2024), the participants in the group report public attacks on their activities, both from people publicly considered to be on the far-right political spectrum and from digital newspapers that publish articles which, in addition to delegitimizing the group's activities, also encourage people who follow such articles to perpetuate the same thinking.

As an example, the authors report public attacks suffered via social media by a former secretary of Jair Bolsonaro's devastating misgovernment and articles in digital newspapers, such as Gazeta do Povo and Revista Oeste. As an example, we bring the titles of the articles in full: 'Mathematics to discuss gender issues? Learn what queer mathematics preaches' in Gazeta do Povo and 'Against prejudice, UFRJ offers a course in 'LGBT+ mathematics for doctoral students' in Revista Oeste (Mendes, Reis, Esquincalha, 2022, Detoni; Mendes; Esquincalha, 2024), in addition to the publication by the former privatization secretary of the Bolsonaro administration on his personal social media profile:

The UFRJ graduate program in mathematics was published on social media, with lines of research focused on sexual diversity, ethnic-racial policies, and gender. Public universities have become true training grounds for left-wing activists and functionally illiterate individuals (Mendes, Reis, Esquincalha, 2022, p. 24).

Such facts not only reinforce the public opinion that mathematical knowledge is neutral, infallible, and indisputable—as pointed out by Gelsa Knijnik (1996)—but also discourage and delegitimize research such as that carried out by Matematiqueer and other groups committed to the social effects of mathematical knowledge and its public perception. These studies challenge the idea of mathematics as unquestionable knowledge, showing that, both in its commonly told history (Santos, Taveira, Peralta, 2022) and in contemporary times, for example, based on

analyses of teaching materials (Neto, Silva, 2021), mathematical knowledge is a means of producing, reproducing, and perpetuating social injustices (Taveira, 2023, 2025).

Not only do agents outside Brazilian mathematics education question this link between mathematics and social markers; members of the academic community itself, who maintain the status quo of knowledge neutrality, often ask: "What does mathematics have to do with this?" Guse and Esquincalha (2024) report that, even in continuing education spaces, mathematics teachers tend to question the relationship between discipline and social issues, as if mathematical knowledge were exempt from these aspects. This stance is understandable, since, for a long time, theories of mathematics education have not been concerned with highlighting or denouncing the bias implicit in teaching and learning phenomena and processes, which ultimately reinforce and naturalize the social idea of neutrality in the face of social inequalities. We recognize that other lines of research also contribute to the theories that underpin the educational processes mediated by mathematics; however, although they are necessary, they are not sufficient.

Nevertheless, these questions often carry a specific intentionality. As explained above, they play two roles in mathematics education research: they reinforce the idea of mathematics as neutral and unquestionable knowledge and, at the same time, they function as mechanisms to prevent, inhibit, or curb investigations that challenge this neutrality.

In the Brazilian context, where scientific knowledge faces challenges and attacks—often from ultra-liberal conservative groups that relativize scientific facts, as in the case of the "flat Earth" or false claims about Covid-19 vaccines— there are actors who not only maintain the *status quo* that attributes neutrality to mathematical knowledge, but also seek to curb research that exposes its non-neutrality.

By asking "What does mathematics have to do with this?", these people are not seeking open dialogue or better explanations but rather maneuvering to prevent researchers who challenge the neutrality of mathematics from justifying their studies and investigations. In the words of Rainer Forst, this amounts to denying the right to justify these investigations. The logic behind this maneuver is simple: if mathematics cannot be related to social issues, research that proposes to do so would be invalid and irrelevant to the field.

Furthermore, this maneuver fails the test of reciprocity, as people within the mathematics education community who deny the relationship between mathematics and social markers end up denying themselves the right to freedom of knowledge production. By curtailing the right to justification, they impose their own perspectives on others, excluding from the field of mathematics education productions that, by questioning the neutrality of mathematical knowledge in social reality, are considered unworthy of being part of the repertoire of knowledge in the field in Brazil.

It seems that only productions and discussions that focus on traditional academic mathematics curriculum content—that which is taught in school subjects and higher education courses—are considered legitimate for discussions on mathematics education, a view with which we disagree. If we understand mathematics education as a field of plural knowledge production that, among many possibilities, investigates the various processes and phenomena related to the teaching and learning of mathematics, it becomes essential to investigate the ideas that this field reproduces in the social imagination, that is, in public opinion.

Thus, the maneuver to prevent the right to justification represents an obstacle to emancipation in Brazilian mathematics education, as it creates barriers to the development of research that explores aspects and processes of mathematics teaching and learning that, until then, were not the focus of knowledge production in the field. Furthermore, it discourages the work of researchers who seek, through their investigations, to challenge the social idea of the neutrality of mathematical knowledge—an ideal that, in our view, is harmful and contributes to the perpetuation of capitalist structures of social reproduction.

This obstacle to emancipation manifests itself in the delegitimization of works that seek to demystify the widespread belief in public opinion that mathematical knowledge is neutral, unbiased, unquestionable, and infallible. However, such investigations are fundamental to contemporary mathematics education, which for a long time has reverberated and perpetuated this false neutrality in social ideology.

## The right to justification as an ethical-political horizon for a pluralistic mathematics education

By revisiting the recent history of research in Mathematics Education in Brazil, especially with regard to the most contemporary concerns in the field, we seek to undertake an exercise in reconstructing the meanings attributed to the investigations that have been developed, rejecting any attempt to restrict the production of knowledge in Mathematics Education to traditional models focused exclusively on classic curricular content — such as algebra, arithmetic, or geometry.

Based on evidence from this recent historical process, we systematically demonstrate how certain objections directed at studies that engage with social markers — and which, for that very reason, deviate from the hegemonic pattern of the field — do not constitute legitimate demands for theoretical clarification, but operate, in practice, as attempts to curtail the right to justification. In other words, such objections serve to discredit the presence of research that questions the still widely disseminated idea that Mathematics is a neutral, infallible knowledge, detached from the social conditions of its production, teaching, and learning.

Understanding this impediment to the right to justification as a concrete manifestation of what we call curricular injustice (Taveira, 2025), we seek, throughout this text, to highlight the mechanisms that maintain such injustice operating within the field of Mathematics Education. This injustice not only silences certain epistemologies and experiences, but also acts as an obstacle to emancipation, by sustaining a vision of mathematical knowledge that is intended to be universal and untouchable, detached from the historical, political and cultural dynamics that constitute it.

Thus, by bringing to light one of the main obstacles to emancipation that affect Mathematics Education as a field of knowledge production, the discussions and reflections developed here have the fundamental objective of provoking the academic community in the area to engage with an urgent epistemological question: how have we (or have we not) guaranteed the right to justification to those who dare to produce knowledge from other perspectives, other bodies and other experiences?

Throughout this article, we seek to argue that the concept of justification, as developed by Rainer Forst, offers a fundamental theoretical and political key to understanding the tensions that permeate contemporary Brazilian Mathematics Education. More than a theoretical-analytical tool, the right to justification has presented itself to us as a non-negotiable ethical *Educ. Matem. Pesq., São Paulo, v. 27, n. 5, p. 209 - 232, 2025* 

requirement—especially when we seek to envision a Mathematics Education committed to the diversity of people and cultures with a view to social justice.

To say that all people have the right to demand public, reciprocal, and universalizable reasons for the norms that affect them imply bringing back uncomfortable, yet necessary, questions: who has been authorized to speak and produce knowledge in our field? Which themes and subjects are recognized as legitimate in the field of Mathematics Education? And which are systematically discredited, made invisible, or silenced?

The recurring question, "What does mathematics have to do with this?", so prevalent in critiques of research that articulates mathematical knowledge with social markers, reveals itself, in our view, as a political maneuver: it is less a genuine doubt and more a strategy of delegitimization. We have seen, read, and experienced situations in which such a question is used as an instrument of epistemological control—a mechanism to curtail investigations that shift the ideal of mathematics as neutral, infallible, and universal knowledge.

In this sense, we maintain that preventing such research from presenting its reasons and justifications—both within and outside academia—is a concrete way of denying the right to justification. It is to refuse the principle of reciprocity by denying the other the same right to argue, question, and propose that one claims for oneself. It is to compromise the very democratic status of knowledge.

When reflecting on the symbolic violence faced by research groups like *Matematiqueer*, as well as the challenges we face in our own investigations, we realize how much this denial of justification impacts subjectivities, trajectories, and knowledge politics. This is something that deeply hurts not only those who research, but the entire field of Mathematics Education, as it impoverishes its epistemological plurality and distances it from its broader formative vocation.

To claim the right to justification in Mathematics Education is, for us, to affirm that all subjects—students, teachers, researchers, activists, and communities—must have their voices heard and their knowledge considered in the construction of curricular and pedagogical practices. It is to defend that mathematics curricula should not be spaces of exclusion, but of recognition, listening, and transformation.

We are convinced that a truly emancipatory Mathematics Education cannot shy away from dialogue with social inequalities. It is not possible to think about teaching and learning

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processes disconnected from the multiple oppressions that permeate bodies and knowledge. To deny this is to reproduce injustices; to confront this is an imperative and unavoidable ethical-political commitment.

By resorting to the notion of justification as a basis for thinking about the possible paths of Mathematics Education, we propose not only a conceptual inflection, but a change of posture: a disposition for dissent, for confrontation with the historical silences of the area and for openness to other ways of knowing and teaching. It is within this horizon that we understand the centrality of diversities in Mathematics Education: not as an addition of "marginal" themes, but as a constitutive part of the struggle for a science committed to the dignity of all people.

We reaffirm our commitment: a just Mathematics Education will be one that is not built on imposed silences, but on shared justifications. A mathematics education that values the right to justification will also be an education committed to freedom, plurality, and the collective construction of a more habitable world—inside and outside the classroom.

By focusing on the recent history of research in mathematics education in Brazil, especially regarding recent concerns in the field, we seek to reconstruct the meaning of the research developed in the area, without restricting the production of knowledge in mathematics education. Based on evidence from this recent history, we systematically show how objections to studies and research that, while deviating from the historical pattern of knowledge production by working with specific curricular content in mathematics—algebra, arithmetic, geometry, among others—seek, through social markers, to challenge the idea that mathematics is a neutral knowledge, strongly present in public opinion, are presented not as requests for explanations, but as an attempt to impede the right to justification.

Understanding an impediment to the right to justification as a curricular injustice that plagues the production of knowledge in Mathematics Education, we seek to unveil this phenomenon that acts as an obstacle to emancipation, since it maneuvers in favor of perpetuating an ideal of mathematical knowledge as neutral, untouchable, irrefutable, and unrelated to the social reality in which it is created, taught, and learned.

Thus, by pointing out one of the obstacles to emancipation that plague Mathematics Education as an area of knowledge production, the discussions and reflections presented in this essay sought, above all, to draw the attention of the community of people who make up Mathematics Education to an epistemological problem of modern times.

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