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VAMOS CONVERSAR SOBRE AUTORIA?
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EDITORIAL

SHALL WE TALK ABOUT AUTHORSHIP?

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The editorial team of Revista Ensaio has been reflecting on the different issues that affect directly the research community in Science Education in Brazil, seeking, through dialogue, to build a space of debate, resistances, changes, in view of our commitment to quality in the production process and communication of research produced in the field. Topics such as open science, inclusive language, collaborative research, plagiarism and training for evaluation, among others, have been the focus of reflections and become central to our actions.

In this editorial, we chose to continue a debate that has already begun in many areas of knowledge about the authorship of scientific articles, seeking to formulate thoughts about the main tensions regarding publication of research processes and possible paths for transformation.

We currently observe that changes in the scientific practice, and new demands for transparency and clarity in scientific communication, have been generating the need to think about the issue of authorship in scientific production and about ways of stimulating the discussion about basic ethical principles related to the research and dissemination of its results. This movement is also justified by the growing importance of authorship in scientific works in many academic processes, such as for new professors, career promotion, evaluation of post-graduate programs and professors' accreditation, the search for funding projects with a funding agency, among others. Facing these demands, people are directed towards the need of promoting their production and, consequently, communicating the results of their research through well evaluated publications. However, more discussions about the ethical aspects implicated in authorship attribution in scientific production is needed, as well as the legal implications derived from inappropriate practices.

According to Claxton (2005), problems related to the definition of authorship are much more frequent than frauds in publications. According to the Committee on Publication Ethics (COPE),[1] authorship is the main generator of tensions reported by journal editorials. People who claim to be authors, but have been omitted; others that were included without their knowledge or authorization; or even those who are listed as authors, but don't assume responsibility for article's integrity, are the most commonly known (COPE, 2014).

In national and international literature, practices related to authorship attribution in scientific production have been strongly debated and are being considered incompatible with ethical principles advocated in normative documents about scientific conduct, elaborated through the last decades (Lima & Farias, 2020; Bošnjak & Marušić, 2012). In this way, some main kinds of inappropriate practices related to authorship have been presented, some of them listed in the White Paper Promoting Integrity in Scientific Journal Publications,[2] produced by the Council of Science Editors (CSE),[3] an informative document elaborated with the purpose of serving as a basis for the development of best practices in scientific publication.

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According to this document, *guest authorship* is the one based solely on the expectation that the inclusion of a given name in the text will guarantee the best chances of publication and/or increase its status. In this case, the "guest" person makes no significant contributions to the study and does not fulfill any authorship criteria (Harvey, 2018).

Similar to the guest authorship (or even synonymous with it, as in McNutt et al., 2018), there is also *honorific* authorship, which refers to the attribution of authorship to specific people because they occupy certain positions in the spaces where the research was carried out or for helping to secure funding, such as the department board, for example (Harvey, 2018; Quaia and Crimi', 2021). *Gifted* authorship, on the other hand, usually involves mutual benefit, that is, one person is included in another's article without having taken part in the research and, in exchange, provides them with co-authorship of their text (COPE, 2021).

For McNutt and collaborators (2018), still in relation to cases of inclusion of people who did not participate in the research, there is also *forged authorship*, in which recognized names in the field are included, without the involved person's knowledge or authorization, in order to increase the chances of publication.

On the other hand, *ghost authorship* is characterized by the non-attribution of authorship to those people who participated in important stages of the work, such as post-graduate students, statistical analysts, technical participants or other researchers who had significant participation in the work (Larkin, 1999). For McNutt and collaborators (2018), however, there are variations between the intentions of not attributing authorship to certain people: while phantom authorship is related to the lack of attribution due to internal tensions, such as conflicts of interest, *orphan authorship* occurs due to injustices committed by the team involved in the research.

The conflicts observed in the attribution of authorship help to highlight problems that also exist in Science Education research, such as the difficulty in establishing and distinguishing authorship, co-authorship and collaboration, defining the order of inclusion of names in an article, understanding and making explicit the emerging tensions of the current practices, among others. These are fundamental points for the debate, since the logic of quantitative evaluation based on the publications of researchers is still predominant, despite efforts to value qualitative parameters.

But which contributions would characterize authorship or co-authorship? This issue has been widely discussed and the understanding of aspects related to it may vary according to the area of knowledge, institution or even research group. According to the International Committee of Medical Journals Editors (ICMJE), a group that for several years has been discussing the ethical principles of scientific communication and whose authorship criteria have been used in other areas of knowledge, especially in the humanities (Bošnjak; Marušić, 2012), some conditions need to be met in the attribution of authorship: 1) Substantial contribution in the conception or planning of the research, or in the acquisition of data, or in the analysis and interpretation of results; 2) Article writing or critical intellectual review; 3) Approval of the final version to be published; and 4) Agreeing responsibility for all aspects of the work to ensure that issues relating to the accuracy or completeness of any part of the work are investigated and resolved. Regarding co-authorship, the ICMJE (2021) also recommends that, in addition to being responsible for their part in carrying out the work, people qualified as authors should be able to identify the role of each participant in the research, as well as have confidence in the integrity of their contributions.

However, criteria such as those established by the ICMJE have been constant targets of criticism. Item 4, for example, which establishes that all people involved in authorship must be responsible for all aspects of the work, has the potential to generate conflicts in multidisciplinary studies, in which an author in a given area could only superficially understand some elements present in the research, not feeling comfortable in taking responsibility for the entire article. Or, still, in articles with a large number of authors, not all criteria can be attributed to each participant.

Going further, in view of the important and desired growth of research developed in a collaborative and inter/transdisciplinary way, including in Science Education, it is evident that the way in which we attribute authorship is currently subject not only to errors and limitations, but mainly to abuses that favor certain groups and individuals and limits the recognition (and its profound consequences in a scientific universe based on productivity measured by published articles) of researchers in unfavorable conditions of production.

How, then, do we advance towards more inclusive and ethical perspectives? Should we standardize the possibilities of authorship in the search for clearer definitions and greater editorial rigor or should we more densely transform our conception of authorship?

As Lima and Farias (2020) point out, the conventions established to indicate and order authorship in scientific publications are outdated and do not represent the diversity of forms of participation that researchers play in the research process. Added to this, the authors emphasize the growing demand, by the editors of journals and funding agencies, for a more transparent process of publicizing research.

These are challenges faced by the CRediT Project, developed by a multisectoral group of British and American origin, which presents a taxonomy of possible contributions made during the scientific publication process (Brand et al., 2015). Following the proposal of Rennie and collaborators (1997), the group was willing to abandon the naturalized notion of authorship in favor of the idea of collaboration. This proposal suggests the explanation of the contributions made both to the research and to the manuscript, allowing the understanding of each person's participation, not only in relation to credits, but also their responsibility. However, the proposed taxonomy, with 14 collaboration roles,[4] should not be used as a definition of authorship, but as a tool to understand the participation of each individual, increasing transparency and access. The CRediT Project proposal transforms the presentation of authorship, moving from an ordered list of names to something more like movie credits, as already imagined by Garfield (1982) and Patterson (2007) as from the film and music industry.

For Brand et al. (2015), when using CRediT taxonomy, it is necessary to list all contributions, including those who appear in the acknowledgments. The corresponding author must assume responsibility for the assignment of roles and ensure confirmation that all persons who have the merit of authorship are included and have the opportunity to review and confirm the roles assigned. Other suggestions have already been added to CRediT, such as considering that collaborating people can have multiple roles and each role, multiple collaborations (even if to varying degrees). Revista Ensaio indicates this taxonomy as a reference to be used by the corresponding author to define the contribution of each participant in carrying out the scientific work. These information are important for the understanding, in the context of peer review, of credits and responsibilities for the text produced.

However, breaking with the logic of authorship already naturalized by the academy requires collective and wide-ranging actions. The team proposing this project recognizes the extreme difficulty of implementing the taxonomy and suggests implementation steps, starting with the collection of structured and standardized information, by the editors, on the contribution of each participant, followed by the association of this information with the ORCID and the DOI of the article. In this way, it would be possible to access information not only about who is the author of each publication, but also about the contributions of each person named as a contributor. In the long term, the order of inclusion of names in the publication, for example, would no longer matter (Brand et al., 2015).

Concluding this text, but not ending the conversation, we agree with the statement presented in COPE (2014) that authorship is a fluid and changing concept and, as it responds to the demands of its time, the ethical challenges associated with it are also transformed. In this perspective, the editorial board of Revista Ensaio reaffirms its concern with the theme and its commitment to fostering this debate and presenting the community of researchers with guidelines in line with the ethical principles advocated in existing regulations, as well as updates resulting from new understandings about scientific communication.

We also reaffirm that, certainly, we do not agree with unethical practices, but we see the need to critically analyze the current arrangement of publication that is put to the community, which does not justify, but explains, some of these practices. Thus, thinking of authorship as collaborative processes becomes an important move to be made, but, it is worth remembering, perhaps it is only a palliative measure, while we cannot find ways to really transform, from its base, a system of recognition and valuation between peers that can serve, sometimes, for the development of a faceted, fast, empty science, and not always in dialogue with the social issues attributed to it.

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NOTES

1 The Committee on Publication Ethics (COPE) is an association of British origin, founded in 1997 by editors of medical journals, aimed at strengthening educational processes and debates on ethics in scientific publishing. Currently, it has editors and publishers of journals from different countries and areas, although it is primarily conducted by members of the global north axis.

2 Available at http://www.councilscienceeditors.org/wp-content/uploads/entire_whitepaper.pdf

3 CSE is an international community of professionals in the editorial field, originally founded in the context of American journals in the field of biological sciences, dedicated to responsible scientific communication.

4 The 14 collaboration roles listed by Project CRediT are: Conceptualization; Data curation; Formal Analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Writing (original draft); Writing (review & editing). To learn about each of them in detail, access: https://casrai.org/credit/.

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