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What can a research in Mathematics Education that echoes the narratives it produces?

O que pode uma pesquisa em Educação Matemática que faz ecoar as narrativas que produz?

Endrika Leal Soares[1]

Vivian Nantes Muniz Franco[2]

Luzia Aparecida de Souza[3]

RESUMO

Fundamentando-nos em princípios e procedimentos da História Oral como metodologia de pesquisa, temos buscado em nossos trabalhos distintos exercícios que dialogam com interlocutores com os quais ainda não havíamos estabelecido situações de entrevistas. Aqui, abordamos a discussão a partir de dois trabalhos, em um deles foram produzidas entrevistas com adultos analfabetos, visando inicialmente compreender estratégias matemáticas cotidianas e, no outro, estabeleceu-se uma interlocução com crianças de 4 e 5 anos, que frequentam a Educação Infantil, buscando olhar para noções sobre escola e matemática por elas constituídas. O grupo História da Educação Matemática em Pesquisa (HEMEP), do qual fazemos parte, tem trabalhado com História Oral desde 2011 em distintos exercícios de investigação. A cada projeto, uma comunidade se estabelece como interlocutora, e nesse movimento algumas problematizações acerca da construção e mobilização de fontes orais são possíveis. Neste texto, discutimos alguns dos aspectos teóricos e metodológicos que permeiam a produção de fontes dessa natureza.

PALAVRAS-CHAVE: História Oral. Narrativa. Educação Matemática.

ABSTRACT

Based on oral history principles and procedures as a research methodology, we have searched in our works different exercises that dialogue with interlocutors with whom we had not yet established interview situations. Here, we approach the discussion from two works, in one of them interviews were produced with illiterate adults, aiming initially to understand daily mathematical strategies and, in the other, an interlocution with children of 4 and 5 years old, who attend kindergarten, was established, seeking to look at notions about school and mathematics

[1] Federal University of Mato Grosso do Sul. endrika.leal@gmail.com. https://orcid.org/0000-0003-4748-0198. CAPES scholarship holder.

[2] Federal University of Mato Grosso do Sul. viviannmfranco@gmail.com. https://orcid.org/0000-0001-8144-0320. CAPES scholarship holder.

[3] Lecturer at the Federal University of Mato Grosso do Sul. luapso@gmail.com. https://orcid.org/0000-0001-8428-4503.

constituted by them. The History of Mathematical Research in Education (HEMEP) group, of which we are part, has been working with Oral History since 2011 in different research exercises. With each project, a community establishes itself as an interlocutor, and in this movement some problematizations about the construction and mobilization of oral sources are possible.

KEYWORDS: Oral History. Narrative. Mathematics Education.

Introduction

Since 2011, the History of Mathematical Education Research Group (HEMEP) has been working with Oral History and narrative production in different research exercises, dedicated to research about the formation and/or performance of teachers who teach and/or taught math in the state of Mato Grosso do Sul.

Thus, at each project, a community establishes itself as an interlocutor (teachers, coordinators, retired school principals, researchers in Mathematics Education, students of Mathematics Degree courses, children in literacy, illiterate people, etc.) and in this movement some problematizations about the construction and mobilization of oral sources are possible and, why not say, necessary.

In the last few years, the group has also been approaching other research exercises, which are beyond the historiographic work and teacher training, but which, in particular, has allowed us to look at school, mathematics and its own investigative action in another way: these are works that establish as illiterate adult interlocutors and children of 4 and 5 years, who attend kindergarten. More specifically, this article addresses two master's dissertations defended in early 2019: i) “Education (,) mathematics and other fundamental banalities of life: dialogues from our daily illiteracy” by Endrika Leal Soares, and ii) “Between childhoods, narratives and delusions: out of school, out of math, out of risk...” by Vivian Nantes Muniz Franco.

Initially Endrika's work was to identify mathematical strategies constructed and mobilized by illiterate people to deal with everyday situations, narratively outlining their perspectives on the term mathematics and its daily uses. The notes made by the research interlocutors, however, dragged the discussion to the reference discourses that support, for example, the social notion of illiteracy. Interested in decentralizing the discussion, from decolonial/decolonial [4] perspectives, the dissertation was constituted as an analysis from

[4] Decolonial / decolonial studies speak of a theoretical perspective that seeks to break with a domination imposed by coloniality - through the discourse of modernity - in several aspects, also moving from dominant

captures, strangeness and problematization of research and teaching practices and discourses in Mathematics Education. There are evidenced processes of social constitution of narrative subjects that, despite being seen as “outside” the school, are deeply crossed by their discourses and logic. They are bodies that echo judgments and uniqueness of reading from a school discourse that produces true effects and normalizes them.

Vivian's dissertation, on the other hand, from the encounter with children from 4 to 5 years old, constitutes an infant practice, which subverts - or delirium[5] - normalized practices in Mathematics Education. The encounter with the children has put us in dialogue with the new, the astonishment, the unexpected and the creation of another power of looking at the world, a sensitive eye to the subtleties of the encounter with the other. Here, the narratives were problematized in the context of childhood, being presented as lines, drawings and images that result from different exercises of production and composition with children. The rapprochement with them, poetry and narratives has fostered, for several moments, many concerns in an outside of mathematics, deconstructing a research-centric look at other issues that permeate childhood, education, scientific research, school and also mathematics. This work brings, in non-risk narratives, reflections about childhood, child, school and mathematics, which take delusions when narrated by children, destabilizing and changing their eyes in the face of such research.

Not only the displacement of issues that these works promote, but the specificities of the encounters generated by these researches put us to revisit practices and guiding principles of Oral History.

Thus, we intend to establish a discussion about the way we understand Oral History and narratives, addressing discussions about the theoretical and methodological aspects that permeate the production of sources of this nature, as well as discussions that arise when we propose to produce narratives based on principles and procedures of Oral History in contexts such as those presented here.

Oral History and the treatment of interviews

epistemologies. Mignolo (2008, p. 290) says that in this context of decoloniality / decoloniality, “[…] the decolonial option means, among other things, learning to unlearn […], since our (a vast number of people around brains had been programmed by imperial / colonial reason”.

[5] This expression comes as we approach Manoel de Barros's poetry, which provokes us to subvert the crystallized meanings of our daily lives. "So, if the child changes the function of a verb, he delights. [...] The verb has to get delirium." (BARROS, 2015, p. 83)

When we consider the construction of narratives to serve as sources of our investigations, we chose to mobilize Oral History, as it is widely discussed and used in the research in our group, which involves interview situations, whose main feature refers to the creation and valorization of oral narratives as sources of research (SILVA and SOUZA, 2007).

When thinking about work with Oral History, it is believed, as Souza tells us (2014, p. 262), that

> This, seen as a coherent articulation between research procedures and theoretical foundation, transits, although not restricted to it, through historiography in order to continually rethink the process of creating sources through the recording of interviews, the structuring of narratives.

In this sense, Garnica (2010) reminds us that, among some frequent assumptions, is what considers Oral History necessarily linked to historiographical studies, but it is interesting to note that sources built on Oral History can help us write a History, but it is not just for such an exercise. Although it does not require such commitment, we can say that the sources produced are historiographical in the sense of

> [...] register perspective in a committed, responsible, ethical way; they are historiographic because they are the record of a truth - the truth of the subject -; they are historiographical because they "speak" of a time, a condition, a space, a way of existing, of speaking, of behaving; they are historiographic, therefore, in a broad sense, in which the conception of historiography now accepts as legitimate the presence of subjectivities to understand the duration, alterations, and permanence of "things" in time and space. Thus, concerns about the concept "history" [...] are at the heart of the oralist's work, even if its sources are not specifically constituted to trigger "properly historiographic" works (GARNICA, 2012, p. 89).

To produce narratives based on Oral History is to intentionally produce sources, and in this way, we believe that "a work in Oral History is, therefore, always an inventory of perspectives hopelessly permeated by subjectivity, a parade of narrated memories, a multifaceted block of truths announced" (GARNICA, 2010, p. 31).

Thinking about Oral History as a methodological resource requires considering some procedures (network criteria, interview script, interview recording, transcription, textualization, assignment of rights, among other ethical cares), but, in addition, requires a constant exercise of regulation that does not allow their crystallization as a model to be followed. We agree with Garnica, Fernandes and Silva (2011, p. 232-233) in considering methodology as a set of procedures that do not make sense without being substantiated. For the authors, it is about "opting for a set of actions (procedures) that allow us to approach/understand something, but,

moreover, it is about knowing the potentialities and the limits of these actions, what their foundations, what the ground on which such actions are based".

Sources are produced from orality, starting with the interviews. And because these are at least two involved, it is essential to emphasize that there has to be a meeting. Thus, even though Oral History calls our attention to the technical and theoretical precautions to be taken during interviews, to procedures in the construction of historical sources, even though our scripts brought guiding questions and strategies, it was in dialogue that the plot of conversations became built it. For the interviews with the children, different scripts were conceived, involving fictional stories in order to direct the telling to a character, drawing proposals and also the non-existence of a script. With illiterate adults the scripts were adapted to the routine of each interviewee, exploring their life stories. Yours? Ours! Because in an interview this happens: Draw!, as Marina calls Vivian's attention to draw with her; or "*You don't know what you're missing from life, my dear*", as Dionesia said when she found out Endrika didn't know how to dance. There are dates!

Some technical precautions are indispensable, such as the positioning of the recorder in a location close to the interlocutor, seeking to avoid the capture of many undesirable noises that overlap the voices, the transcription and textualization of the interviews by the researcher himself who tries to record the fleeting perceptions of these registration forms. In this direction, we could signal here these last two procedures that have been the most questioned as to how they are produced and presented. We could say that, in possession of the recorded material, our first move was to transcribe these oral narratives, with the concern to preserve as much as we think we characterize the interviewees' particularities, such as speech, repetition and pauses. Or we could establish as analytical the process of constructing a more fluent, reorganized narrative called textualization. The importance of this type of discussion is also recognized by the amount of works that thematize. We leave to these, then, the care with these perspectives.

Here, we will commit ourselves to presenting some issues that, having populated our investigative practices, need to leak.

Video recording is one of these issues. The importance of this in the recording of gestures and expressions of young children is fundamental not only for its potency for the interpretation of the said, but how the body participates in the narrative under construction; as this is also body. The presence of a camcorder in encounters with children was as important as its absence in encounters with illiterate adults, but not with the same power, it is relevant to say.

After one of Endrika's first interviews, a fissure: when would her interview pass on the television station so she could show it to her friends? Asked a 76-year-old lady. That meeting weighed and weighs until today this issue, not only by its statement, but by what it carries when it signals a non-recognition of other interests involved, a devolution of research that makes sense, that operates within the community in which the collaborators live of a research in which they feel and make feel. In vainly trying to implement a standard script, Endrika already noticed something to think about:

> answer me these same questions
> that I need
> that I need to listen
> that I need to write down
> that I need to research
> that only I need
> that I only need
> to feel
> and I don't feel [...] (SOARES, 2019, p. 32)

An important factor that has been shown throughout these two surveys in particular is the surroundings, the people who were close to those they thought were somewhat vulnerable. Parents who explained the child's stuttering language, children who explained unusual parenting terms. Somehow this environment told a little about our interviewees, how they are read by those around them; and they also said a bit about the researchers (those for whom it was important to translate ways of saying clearly incomprehensible to academia).

We could argue for a textualization of interviews to make corrections, rearrange ideas to make reading more fluent, but in another direction, we keep questioning which interventions would make sense within another language. How and why tame unfamiliar expressions of people considered illiterate to make it readable to a literate person? How would it be possible to characterize children's speech without the text being composed of stutters, words still mispronounced, mismatched and gestures? Textualizations are ways of saying, but these modes, brought by Endrika and Vivian, are stammering, mobilize wrong or nonexistent words when considered a reference framework of the norms established in the Portuguese language.

What to do by recognizing one's own way of constituting sayings? The first guideline seems obvious, in the sense of keeping the pronouncements made "wrong", but it is not the most obvious measures, it is thinking of an aesthetic that does not reinforce the existence of a referent language, which, in addition to the more obvious markings, brings into question how it is possible to constitute a text in Portuguese language that accentuates words, organize speeches through punctuation often missing in the words of children and illiterates. What to do

with the common practice of these two groups of disaccustoming words, making them delirious, constituting them through other uses?

We believe that, in this process, the researcher composes with the interviewee. This text is no longer configured as the narrative of the interviewee or as a production of the researcher only, but a collaboration between the two, who leave their marks in this new text produced. This process we call textualization.

The letter of assignment of rights for the academic mobilization of the narratives produced in this process is also a delicate moment in these researches. Some essays were made from the speech of children, but like these, as in the case of people who did not read, this assignment was provided from the trust in these researchers or third parties. Parents have authorized the mobilization of their children's speech and we, as a legal provision, rely on this to get on with the work. What sense does a checking process have for a child about what has been said? Is that still her/his story, or is it another because it's actually now told by another, in the voice of another? What sense does it have for an adult to hear another read what his supposed words would be and then ask if there is recognition in them? Would the researcher herself read? Anyone from that family? A specific software with an automatic voice? Could there be recognition in lifeless speech?

If, in the case of children, there is a legal guardian of age who signs the necessary documents to release the sources for use, in the case of the interviewed adults, they assumed this role. But what procedures has oral history developed to deal with situations like this? Who would answer this? The question is what do we do while working with Oral History, while thinking of an ethics, aesthetics and politics that constitutes it? What we do when we signal the possibility that a fingerprint will stain ink and then stain the paper as a mark not only of authorizing something not read - not by it - but with a brand recurrently linked to an idea of the other by its denial: the unlettered.

Garnica, Fernandes and Silva (2011) help us in a discussion about the sources produced from Oral History. Video and/or audio recording, transcription and textualization are different sources and as such allow for different discussions in an investigation. In works with oral history, researchers have used textualization for formal analysis, not only because of its ease in terms of dissemination in academia, but also because it is often complemented during the process of conferencing and authorizing use by interviewees, providing the opportunity for other information to appear.

In the works highlighted here, especially the one defended by Vivian, other possibilities are instituted: audios and images populate the entire dissertation exploring the QR-Code[6] tools. Thus, another dynamic is brought to work so as not to contribute to the silencing of these groups either by the words-explained, or by the death of body modes of expression, screams and whispers. In Vivian's dissertation you can hear pencils scratching papers, screams, laughter, music, voices throughout the work, as an affirmation of language, but moreover as an affirmation of the sensible.

Oral History as a research methodology raises questions about an investigative posture, as well as articulated procedures and rationale towards the construction of historical sources from orality. This methodology, therefore, is not a method of analysis, so that other perspectives can be articulated with the assumptions made with it. The way we think about our investigations gives us the freedom to evaluate the scenario, (de)construct procedures and, eventually, to go through other paths that also make sense for the production of research.

In the works we have been developing, narratives are articulated to Oral History in the direction of knowledge production and multiplicity. According to Garnica (2010, p. 34),

> In the narratives, then, lies the very own possibility and potentiality of what we have called Oral History, and we try to think of them no longer as constituting "the" history, but as constituting possible histories, versions legitimized as truths of the subjects who lived and reported certain times and situations.

An important observation we make is that both works do not intend to speak for these interlocutors, in order to "give voice" to these communities, or to speak for each other, but who want to be and talk to each other, who do not need them to speak for themselves, they have voices that resonate with other environments to which we have access or are inserted. Once again, this is a meeting from which different voices resonate.

Possibilities of narrative production and the construction of research sources

The production of the narratives that compose and dialogue with our works are produced, as we have seen, based on the procedures and conceptions of Oral History. In this

[6] Among the narratives that made up Vivian's master's research, some came up in QR codes, a two-dimensional barcode that can be easily scanned using an app available on most camera-equipped mobile devices. In the case of the dissertation, this code is converted into a URL address that leads to videos produced by the researcher in a composition of audios and images of encounters with children.

sense and considering the research scenario in which we operate, we understand narrative as storytelling (SOUZA, 2014).

Following this perspective, we agree with Cury, Souza and Silva (2014, p. 915) when they state that

> To narrate is to tell a story, to narrate is to tell our story or a story of which we are, were, or felt characters. This telling, it is important to emphasize, is always towards someone. In this way, the narration predicts a positioning in front of the other.

Thus, both in our investigations and in works linked to the research group, narratives are usually produced in a similar way, based on interview situations. In these interviews, although with mostly open scripts, the interviewee has his speech motivated and guided in some way by the researcher, who is interested in the dialogue, in the stories that his interlocutor has to tell.

As stated earlier, in making his narrative, the interviewee does this toward someone, usually the interviewer/researcher, and there is often an effort to position themselves one in front of the other. We believe that in this effort to construct the narrative, the narrator articulates his/her memories that are playing a prominent role, being an indispensable resource for the narrative.

We agree with Garnica, Fernandes and Silva (2011, p. 242) when they say that "memory filters, reorders, fantasy. Memory interprets, resizes, invents, complements. Memory allows us to build texts." Talking about this construction, we believe that the interviewee, when narrating her/his stories, constitutes another through narrative, that is, the subject who narrates is not the same narrated subject, but versions are created through narratives. As stated by Albuquerque Junior (2011, p. 254),

> [...] the man who tells himself is not the same man who lives, even when narrating his own life. [...] Because the subject of the narrative is a subject in a living state, in flesh and blood, he is a subject in which blood flows in his veins. Already the narrated subject is a subject in word state, is made of paper, is a subject in which ink runs in the veins.

Thus, the narrative is built, in this effort to position itself in front of the other. For us, as researchers, "the stories that the subjects tell us, their narratives, serve to constitute other narratives in which the researcher's voice is hopelessly contaminated by the voices of those he had as interlocutors" (GARNICA, 2010, p. 34).

It is in the midst of this tangle of voices, narratives, that we intend to build the scene of our investigation. Garnica (2010, p. 30) also draws our attention to this practice in our research

field, when he points out that:

> In mathematics education, orality has always been an instrument - a admittedly fruitful support - for understanding the objects we have for our research. Narrative modalities of inquiry are usually triggered by statements, that is, they are narratives that, permeated by a hermeneutic, support understandings, which, in turn, show or allow us to attribute meanings to the aspects of the object analyzed.

We emphasize that although our investigations work with the production of narratives as we are discussing, produced from orality, it does not mean that narratives are limited to this. We understand the narratives in the direction of "making known"/saying something, also referring to the idea of knowledge. In this direction, we understand that through an interview, the narrator tells us a story, gives us knowledge, something to know, but we believe that this does not happen only in this situation, because stories can be told in different ways.

Think of a painting, a movie, a photograph, a drawing, in different forms of text (text understood as beyond the written text) that can tell us something, that can lead us to know. This makes us broaden the ways of thinking the narrative, especially regarding the relationship between form and content, enhancing and opening new ways for our productions.

In the midst of these new discussions about narrative, we find a certain comfort for the yearnings that were created during the development of our works, which are based on the perspectives of Oral History. We do not take this rethinking procedures and strategies of a methodology as a negation or distancing, but as a methodological exercise that is being built throughout the investigation, looking for methods that contribute to the construction of sources that help us understand, for example, the discourses of illiterate people and the ways in which they establish themselves in the world, as well as the ways in which children mean school and mathematics in childhood, among other intentions of this research.

It is common in research practices that we have built, mobilizing the procedures of Oral History, considering that the speaker always speaks towards someone and that this someone has always been our figure as researchers in the area of Mathematical Education. Behold, in the two contexts brought here this figure makes no sense, does not seem to produce meaning. People who have spent their lives out of school, away from formal education or children who do not yet experience all the formalisms of educational institutions have had the important role of dealing with the interview as a dialogue that only makes sense as such and without them. The ceremonies we often surrender to can only be continued when all involved are really involved.

To briefly illustrate some situations, we bring two scenarios from our research. We have already referred to one of them earlier, which took place shortly after Endrika's first interview with a 76-year-old lady who questioned the date that the interview she had given would be on television.

In the case of Vivian's research in one of her interviews with a 4-year-old child, the script involved the Alien story, which was a stick figure taken to direct the conversation (he was interested in knowing about the child, his routine and his school). As the child was told that at some point the character would leave, while playing, he began to question about Alien's departure: Will he disappear? And is he going there in space and then going to talk? And when he realized that the Alien had disappeared (was hidden by the researcher), he refused to answer a question about his school stating that it was already gone, because the Alien was already gone. The narrative of/with children constitutes a present and ephemeral power of construction and invention of worlds.

With this, we believe that Oral History has gained in our research new eyes. Some of its principles and a methodological stance guide us towards other possibilities and potentialities in the constitution of narratives built by stages (network criteria, interview script, interview recording, transcription, textualization, assignment of rights) that are now in motion.

Some considerations

Oral History as a research methodology has contributed greatly to the work developed in the HEMEP Group, serving not only as a methodological but also theoretical support, helping us to think of interviews as sources produced in our research.

In the case of our investigations, in particular, we seek support in the principles and procedures of Oral History as support for the production of narratives, but without necessarily adopting it as the research methodology. Although we recognize the possibilities and potentialities of Oral History, taking into consideration the way we are thinking about our work and the choice of our interlocutors, we feel the need to adapt procedures and, at the same time, we take responsibility for searching for other strategies that help us to construct and treat our issues sensitively, respecting their delineations and the directions they have taken, which were not intended to be foreseen.

That said, we believe that proposing discussions around methodological issues and their

possibilities and limitations is an important exercise for the research movement. Here, we try to do an exercise close to this one, thinking of our research on Oral History for the constitution of sources that involve interviews with illiterate people and children, in this new moment of our formation, in which we distance ourselves from the production of properly historiographical and historical research. We are taking new paths that, in a sense, deviate from the procedures and ways of dealing already implemented by the HEMEP Group.

We believe that researchers are constituted in/by research through a sequence of norms - wrapped in deadlines, structures put in place - so they will tend to comply more with the law, that is, they may be less inventive, precisely because of these "plastering". Similar movement also happens with research methodologies, whose procedures risk being taken as a priori rules, whose application does not require reflections and problematizations. Thus, it is important to develop a posture that will allow us to question and, if necessary, cause a break with normalizations, allowing the opening of spaces to think other things, in other ways.

In this movement, in which we questioned our false stabilities as researchers, in a familiar reading of what it would be like to work with Oral History, it was possible to realize that operating with this methodology requires a movement, sometimes not so noticeable in certain contexts, but abrupt in others, disquieting not only a research but also, as in the case of our experiences, researchers, inviting us to claim to know ourselves to transgress the limits of what we are and seek to be in other ways.

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