



## Who conducts the narration is the ear: mobilizations of oral history in mathematics education

### Quem conduz a narração é o ouvido: mobilizações da História Oral na Educação Matemática

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#### RESUMO

Neste artigo tematizaremos experiências, desafios e potencialidades na realização, edição e análise de entrevistas produzidas com base na metodologia da História Oral. Inseridas nas discussões quanto à mobilização dessa metodologia de pesquisa na Educação Matemática, particularmente aquelas realizadas junto ao Grupo História Oral e Educação Matemática (GHOEM), as autoras se envolveram na realização e análise de mais de 40 entrevistas para suas pesquisas que tematizaram a formação e atuação de professores que ensinam ou ensinaram Matemática no Brasil. Expõe-se aqui a importância do ouvir desde a escolha dos entrevistados até a análise das e a partir das narrativas resultantes das entrevistas. É preciso saber perguntar sobre o que se deseja conhecer e problematizar com a entrevista, mas é preciso que sejamos conduzidos por ouvidos atentos no sentido de não ouvirmos apenas aquilo que desejamos ou somente sobre o que perguntamos.

**PALAVRAS-CHAVE:** Educação Matemática. Roteiro de entrevistas. Entrevistas. Narrativas. Análise de narrativas.

#### ABSTRACT

In this article we will discuss experiences, challenges and potentialities in conducting, editing and analyzing interviews produced based on the methodology of Oral History. Inserted in the discussions about the mobilization of this research methodology in Mathematical Education, particularly those held with the Group Oral History and Mathematical Education (GHOEM), the authors were involved in the conduction and analysis of more than 40 interviews for their research that addressed the formation and performance of teachers who teach or have taught mathematics in Brazil. The importance of listening from the choice of interviewees to the analysis of and from the narratives resulting from the interviews is exposed here. We need to know how to ask about what we want to know and discuss with the interview, but we need to be led by attentive ears in order not to hear only what we want or only what we ask.

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**KEYWORDS:** Mathematical education. Interview script. Interviews Narratives Narrative analysis.

## Introduction

The use of interviews to produce data for qualitative research is very common, including in this scenario the research in the field of Mathematical Education. But it was from the late 1990s and early 2000s that the methodological framework of Oral History began to be used and problematized as potential for research in Mathematical Education, culminating in the creation of the Oral History Research Group and Mathematical Education, GHOEM. With the creation of this group and over almost 20 years, the mobilization and debate about this methodology has been going on. Thus, procedures and problematizations about Oral History have been taken up, replicated, but, in general, we have tested limitations and potentialities of this framework.

Oral History in Brazilian Mathematical Education, in general, has been mobilized to constitute narratives in interview situations. It composes the research methodology, the way we face our questions and involves a constant feedback between a set of procedures and a theoretical foundation. In the Oral History we have been practicing we can identify some procedures such as the selection and contact with potential interviewees, the elaboration of a script or interview sheets, the audio recording or filming of the interviews, the transcription and textualization of the interviews, reviews and negotiations regarding resulting texts and for signing a letter of assignment of rights by the interviewees, to then propose, carry out and disseminate analysis of and from the narratives produced. However, the confrontations and ways of mobilizing Oral History in Mathematical Education have been diverse, influenced as much by the different themes and research questions as by the theoretical references and the profile of the interviewees.

In this article we aim to problematize ways to practice Oral History from our experiences, which occurred both in the flow of discussion of the research methodology in GHOEM trajectory and in ways of sensitization to the research theme provided by this attention to methodology. In the end, this article is a thinking about the orientation relationship in academic research, about meetings, about sensitivities in this process of starting research and in the orientation of research in Mathematical Education: Vicente Garnica, leader of GHOEM, guided Maria Edneia from scientific initiation, when GHOEM was being created, to her doctorate; Maria Ednéia mentored Karina, who approached Mathematical Education and Oral

History when she entered the master's degree, bringing experiences of scientific initiation in the area of Pure Mathematics, when she studied three-dimensional rotations via quaternions. From these meetings and sensitivities developed we have been practicing Oral History in Mathematical Education.

We prepared this article in the wake of these discussions and research practices with Oral History and from two publications and debates at the Thematic Seminar on Oral History and Mathematical Education within the XIII and XIV National Meeting of Oral History that took place in 2015 and 2018, respectively. In those articles two problematizations were proposed: a reinterpretation of the first interview conducted by Maria Ednéia for her scientific initiation research (MARTINS, 2003), after performing, editing and analyzing 39 interviews (MARTINS-SALANDIM, 2016) and expectations and challenges during the research. conducting four interviews for Karina's master's research (SILVA, 2019) while the research was developing (SILVA, 2018). In both articles, it was highlighted that attention and putting on the scene listening in research mobilizing the Oral History. As Portelli taught us (2106, p.12), oral history

It is an art of listening, an art based on a set of relationships:

1. The relationship between interviewees and interviewers (dialogue);
2. The relationship between the time at which the dialogue takes place and the historical time discussed in the interview (memory);
3. The relationship between the public and the private sphere, between autobiography and history - between, say, history and stories;
4. The relationship between the orality of the source and the historian's writing.

Therefore, the importance of listening from the interviewees' choice to the analysis of and from the narratives resulting from the interviews is exposed here. We will emphasize here the preparation and timing of the interview recording, the editions (transcription and textualization) of the interview and analysis of the narratives resulting from the interviews. We need to know how to ask about what we want to know and discuss with the interview, but we need to be guided by attentive ears in order not to hear only what we want or just what we ask.

### **Recording ...**

The mobilization of Oral History in research requires planning and reflections that begin long before the interview was recorded, even though this is the one with the highest expectation. In our experiences, defining the research themes, we thought of profiles of potential interviewees and began searching for names and contacts. In these contacts we clarify

our interests with the interview and the research, as well as the steps from the recording to the interviewee's material conferences and the signing of the assignment letter on the recording and textualization, with or without restrictions on use. We also define with the interviewees the dates, places, duration and conditions of each interview, always taking into consideration its possibilities.

However, the ways we act in each of these procedures are influenced by our concerns about methodology, our research questions, and who our interviewees are. Thus, the preparation for the interview has been done very carefully and, in general, has required the elaboration of scripts, records and survey or production of materials that serve as interviewer's orientation for the moment of recording and as a trigger of memories to the one who narrates. Interviewees have full access to these materials before, during or after recording and this preparation is closely related to the research theme and the profile of the interviewee. Interesting examples of adaptations and reorganizations of these materials and process according to the interviewee, such as those that Murbach (2017) did when he interviewed children, as those that Rosa (2017) did, interviewing visually impaired people and as the Silveira (2018) did when interviewing deaf children. More particularly, we highlight the complaints that Silva (2018) and Silva (2019) make regarding the elaboration of the interview script questions and the moment of the recording.

“The one who commands the narration is not the voice: it is the ear. I speak, I speak, but whoever listens to me retains only the words he wishes,” Marco Polo warned us in Italo Calvino's *The Invisible Cities* (CALVINO, 1990, p. 123). “With a few exceptions, you don't see, you don't hear well except what you really expected to realize,” said Marc Bloch (2001, p. 104) about the observer's momentary condition. These readings helped us to problematize both the preparation and conduction of the interviews and how we have heard each other in the moments of recording, transcription, textualization and analysis.

Aware of the concerns and expectations regarding the recording moments of the interviews - remembering the script questions and driving modes - we turn our attention to the elaboration of the script and its potentialities, which led us to an awareness of the importance which led us to an awareness of the importance of knowing how to listen to the script questions, how to listen during the recording and how to listen to the interviews and from them.

The elaboration of a first script took place by revisiting several works of Ghoem that drew on Oral History and which focused on Teacher Education - since Silva's theme (2019)

was the constitution of the first indigenous teacher training courses in the State of São Paulo - In addition to having also sought in other references of Oral History the basis for conducting the interviews: how to behave, address the issues and how not to induce respondents. From this first version of the script we started to discuss the necessity and potentialities of each question, an exercise that allowed the master student to appropriate her script and realize that the same question, such as basic, university and post-university education, would have different goals depending on the profile of each of the interviewees. Thus, the scripts were being polished before and between each interview, always considering who would be interviewed and the meaning of that question for that interview<sup>3</sup>. Silva (2018) points out that, even if he knew about the script and its importance in the referral at the time of the interviews, he only realized its complexity when addressing it, problematizing each question related to each interviewee and thinking of different scripts according to what was sought to understand along with each of the interviewees, including new questions from the interviews already conducted. That was how she realized that this problematization of the scripts made them more suitable for each interview and the research question and helped her in her organization for the time of the recording that so distressed her. In addition, you understand the importance of the ears to guide us throughout the research process.

The reflection that knowing how to ask the question implied knowing how to listen, was also evidenced by Martins-Salandim (2016) when rereading his first interview, available in Martins (2003), and perhaps for this reason she proposed this exercise to his own student. For her, even though the script had been carefully prepared and involved issues that triggered very interesting narratives, opening new themes for her future research, in the rereading she did, Martins-Salandim (2016) perceives and problematizes her difficulties in listening, during recording of the interview, as the teacher interviewed narrated his experiences about a rural school. As he addressed issues such as access to the school building and his stay in the countryside to be able to teach, as well as characterizing the community, students, legislations, etc., the interviewer would again ask about what the school was like, since she wanted to hear about it. a school that idealized - its building, the classes, the materials -, not hearing, at that moment, about the place of the school, what constitutes it, beyond its function and social role. It was in the rereading of this interview that she hears what a school is, praises this rural school

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<sup>3</sup> Matucheski (2016) discusses how he reflects on his scripts and interview, among the various recordings he made sequentially.

in the sense of Larrosa (2017) – a praise, as to show what it is, as to make exist. His rereading also shows the potential of a narrative beyond the motivation for which it was produced.

These reflections on the scripts, however, had other implications for the recording moments. While in the first recordings, Martins (2003) was concerned with the cassette recorder - battery life, the space on each side of the tape - Silva (2018, 2019), who used his cell phone to capture audio - with good memory and battery life - turn your concerns around conducting interviews. An understanding of what an oral history interview is all about while doing it, going beyond what you read during the orientation sessions and the research group's activities. She recounts her disappointments and frustrations throughout her four interview recordings, since a low-interruption position in one, implying a more interacting position in another, did not necessarily indicate better performance as an interviewer. On the other hand, your attention to these details was fundamental to understand the need to understand the pace of each interview, the flow of each interviewee's narrative, their choices and details of what they considered important in that interview, the shared tears, laughter and emotions.

We have come to realize that a more open posture, more dialogue in the interview, is becoming more established as we have more experiences in conducting interviews. We have come to realize that the timing of the interview is unique, and that our initial concerns about whether we would remember our questions at the time of the recording are softening as we further plan the script. On the other hand, the conduction of the interviews, and the experiences with them, lead us to perceive this moment as a moment of great sensitivity, complicity, listening, much more than the moment of the right question. The way of asking emerges as the ear is listened to in each interview, in its singularities. Thus, looking into what the script asks, and asking about it, was essential, not only to ask the questions in the interview, but to prepare, sensitize listening throughout the research process. (SILVA, 2019, p. 57-58).

These sensitivities shared by the counselor from their experiences accompanied them in the discussions regarding the editions of the interviews, moments in which the potentialities of the narratives for research emerge.

### **Editing ...**

The resources for recording and transcription vary and this is visible in the research activities discussed here. The advisor had already used cassette recorders, digital recorders and cell phones to record the interviews, the transcriptions of which were repeatedly heard by tapping the recorder's own forward and backward keys (MARTINS, 2003), as well as using the

transcriber tool used by Silva (2019). Although using these tools for transcription, this is a lengthy process. Language addition have been eliminated or reduced, other sounds picked up by the audio, interruptions during recording, etc.

The way of transcribing and the elaboration of the textualizations - texts that will be included in the final research reports and published - seems to have been less controversial in this process. It is noteworthy that the attention given in the preparation and conduct of the interviews was fundamental to find a structure and form of the textualizations. They were elaborated from the perception we were having at the moment of transcription. We have either carried out a thematic or chronological reorganization, eliminating or not the interviewer's questions and including many footnotes. With these notes we both aimed to complement or clarify information present in the narratives, and, in the case of Silva (2019), boosted reflections and possibilities for the analyzes. Martins-Salandim (2016), while rereading the interview, returned to audio and transcription to perceive other elements in the narrative, after 12 years of recording.

Our deponents signed letters of assignment on the recording and textualization of the interviews, after receiving these materials for review. Most of the deponents made minor revisions, and in some cases excluded/included excerpts in the textualization and complemented data/information as we requested, but there were cases of almost giving up the assignment of rights, setbacks and questions about the uses of interviews. Silva (2019) points out that one of his interviewees, although initially having doubts about granting the interview, after clarifying how the entire process the interview would go through, decided to participate. On the other hand, another interviewee who was very interested in collaborating with the work, after granting the interview lasting about four hours, initially decided not to sign the assignment letter about textualization until she was clear about the elaboration of this text. After several other clarifications and contacts, the interviewee understood the importance of the process of an Oral History interview and gave us the letter, making minor adjustments to the wording.

### **Analyzing narratives ...**

The structure and form of narrative analysis resulting from oral history interviews, in our experiences, were based on our sensitization about our research questions from what was narrated to us. In this sense, we had no a priori analytical framework. Our orientation sessions

at this point in the research process were more delicate. The advisor had already performed analysis in different ways from narratives, other research in the Group also presented different proposals and forms of analysis, but the narratives and research questions are so unique that we do not think of replicating these experiences but taking them as inspiration.

In Martins (2003) it is noteworthy that the analyzes and configurations of the analytical text occurred after reading the textualizations with notes of trends by convergences or divergences (a process that began when recording, transcribing and textualizing) - not to compare narratives, but to grasp their multifaceted scenario. Thus, 10 trends<sup>4</sup> were raised, many reflecting themes / issues of interview scripts and others emerging from narratives. In the master's research, Martins-Salandim (2007) initially started from some trends, but finally took one of them (marginalization<sup>5</sup>) as a driving axis of the analysis: other trends raised were thematized from the concept of marginality, which came up with the narratives and that was not in the script of the interviews. In Martins-Salandim (2012), from initial intentions to produce an analysis with eight potential trends, a singularity analysis was proposed, which re-signified the initial trends, and from the convergence analysis two texts were produced. In the analysis of singularities each of the narratives was analyzed individually, seeking to detect both their peculiarities and the information that each of them gave us about the theme we set out to understand as well as the way they were narrated.

*.../ we realize and evidence that some narratives were structured from the professional development and/or career of the interviewee; others in relation to the development of the course itself and how this course is becoming important to the local community or the mathematicians; others are based on the structural development of institutions and courses; still others in relation to the way the deponent perceived himself as a student of that course and as a teacher, recently graduated, already working in the course or in secondary education; others focus on personal circumstances, the way in which respondents are involved in different situations considered as determinants of their professional career; others for aspects more linked to their social condition. (MARTINS-SALANDIM, 2012, p. 55)*

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<sup>4</sup> Convergent elements - common to various statements - or divergent.

<sup>5</sup> Martins-Salandim (2007) presents an important discussion about the dynamic character of the concept of marginality. The author points out that marginality is transitory, as it is manifested in relative perspectives, that is, the social position of people in this condition is altered according to the professions they perform, the places or times in which they live, and especially by the chosen aspects of those who judge them. Thus, marginality is not static: something can be perceived as marginal under some parameters and not according to others. Marginality, therefore, is in the eyes of those who establish who is or is not marginal under the aspects they impose as principles for judging - or studying - the processes of marginalization and their outcomes.



This careful look at the flow of the narrative, the interviewee's choices, its singularities, and, from there, structuring the analytical text, fostered the rereading that Martins-Salandim (2016) makes, 13 us later, from the first interview he produced for his initiation research. The intention was to focus on the narrated experiences and the way the narrative was structured: what we could hear most from that narrative, without having a specific research theme on which to understand.

These analysis proposals also sensitized the student, but the way of structuring it was different, since attention to each interview had already been given throughout the process. Thus, the analysis was structured in two texts that problematize behind the scenes elements of the creation of the first indigenous teacher training courses in the state of São Paulo: the structuring of the courses and some points that we chose to stress. Returning to one of the questions of the interview script, Silva (2019) points out that the inclusion of questions related to the training and professional experiences of the interviewees was justified because we wanted to know each one of them and understand how they would present themselves to us, but at the time of the interview. This analysis helped us in the composition of a force relations scenario that their narratives trigger. In this proposal of analysis, the themes were triggered by the narratives.

### **Final considerations**

We brought to this article some reflections on awareness raising in research and attention to a research methodology enhancing the theme and research question. We believe that in a proposal for a trajectory research methodology it is necessary that readers become aware of confessions, not only of the researcher, but also of the orientation relationship, with their successes and clashes. The proposal of the research methodology was given with attention and respect, was perceived throughout the research process and not as an imposition of a research group, we were building the methodology from different dialogues - with the Group, with references and listening to what we asked with our research question. We built our research methodology, our own chainsaw knife<sup>6</sup>, tensioning the Oral History in our trajectory.

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<sup>6</sup> Allusion to Professor Wagner Valente's provocations during the 21st Brazilian Meeting of Graduate Students in Mathematical Education (EBRAPEM) that took place in November 2017, in Pelotas/RS, about methodological choices, alerting metaphorically about the cases in which a chainsaw is mobilized only because the advisor and/or research group use it, when only one knife could be used to do the same work. A broader discussion from these provocations can be seen in Silva (2019).

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**Submetido em Junho de 2019**

**Aprovado em Setembro de 2019**

