"The interviews were transcribed", but how? Reflections on management research

Leandro da Silva Nascimento and Fernanda Kalil Steinbruch

Postgraduate Program in Administration (PPGA) and Innovation Research Center (NITEC), Federal University of Rio Grande do Sul, Porto Alegre, Brazil

Abstract

Purpose – In qualitative research, it is recurrent to conduct data collection through interviews, which must be first transcribed for the data to be analyzed. Although there is a relationship between the stages of the interview and the data analysis, the link between them (i.e. the transcription) seems to be a neglected methodological procedure. This occurs because, in papers, it is generally reported that "the interviews were transcribed", without any details about the transcriptions conduction. From this methodological gap, this paper aims to discuss the relevance of detailing the methodological procedures adopted in the transcription in research reports in the management field.

Design/methodology/approach – This paper takes the form of a methodological essay.

Findings – The discussion focuses on the concepts of naturalized and denaturalized transcription, the relevance of adopting transcription norms and the need for reflexivity in conducting transcriptions – elements that must be explained in research reports to improve the methodological quality.

Practical implications – This paper explores methodological details that management students and researchers can adopt when performing transcriptions. Consequently, journal editors and reviewers will have more subsidies on the methodological quality employed in researches, which contributes to a better evaluation process.

Originality/value – This study demonstrates the relevance of a neglected methodological technique – transcription, which needs to be detailed in research reports, to contribute to the increase of methodological accuracy and to provide essential information to readers, allowing them to evaluate the rigor of the research. Thus, it is proposed that transcription should be considered a quality criterion in qualitative research.

Keywords Transcription, Methodology, Qualitative research, Naturalized transcription, Denaturalized transcription, Management

Paper type Conceptual paper

1. Introduction

The qualitative research has a set of specificities and characteristics that, notably, in the Social Sciences, runs through numerous philosophical conceptions based on a range of data collection, analysis and interpretation methods (Creswell, 2010). This variety of techniques

RAUSP Management Journal
Vol. 54 No. 4, 2019
pp. 413-429
Emerald Publishing Limited
2531-0488
DOI 10.1108/RAUSP-05-2019-0092

and procedures inherent in the scope of qualitative research is detailed in the method section of reports (e.g. papers, dissertations and theses) that originated from scientific investigations. Such description is essential for rigor analysis (Gioia, Corley, & Hamilton, 2012), reliability analysis and validation analysis (Flick, 2013) used in studies, because it reflects the acceptability of the research by its readers (Mitchell & Clark, 2018).

Specifically, in the management field, there is a concern with the rigor used in researches (Bertero, Alcadipani, Cabral, Faria, & Rossoni, 2013), which can be exposed and analyzed from the description of the method or from the methodological procedures used in studies. In this way, when elaborating scientific documents, there is a prerogative that the authors attempt to explain the methodological approaches adopted in the research, pointing out characteristics, possibilities and limitations of the adopted techniques or methods (Gerhardt & Silveira, 2009).

This detailing becomes even more relevant in qualitative research since it presents specificities and restrictions (Cavalcanti, 2017) that prevent the generalization of results, as many authors postulate (Mattos, 2011). Before the reader's acceptance, the evaluation process of scientific works, especially papers, requires the agreement of the study between the peers, which occurs through the justification, the contribution and the relevance of the research (Lukosevicius, Guimarães, & Zouain, 2019), as well as through the description of the methodological course adopted.

The methodological description includes several steps, one of which being data collection, that occurs in qualitative research mainly through interviews, observation or documents (Creswell, 2010). The interview is a privileged technique of data collection in qualitative studies (Duarte, 2004), especially in the management field and it is understood to be a form of non-standardized research with the objective to obtain individual views of certain interviewees or respondents on a specific thematic (Flick, 2013). There is a variety of interview styles for data collection (Gerhardt, Ramos, Riquinho, & Santos, 2009) and the methodology manuals (e.g. Gil, 2007) usually detail the procedures that researchers must adopt before and during each interview.

This demonstrates the methodological relevance of conducting interviews and the need to clarify the steps and procedures adopted with this technique, such as the question of validation and acceptance of the research, as well as other techniques and methods of qualitative research. After delimiting the procedures to conduct the interviews, it is common to detail the procedures adopted for the data analysis of the elements of the interviews, through the methods of content analysis (Bardin, 2016; Flick, 2013) and discourse analysis (Caregnato & Mutti, 2006; Gonçalves, 2016), which are widely adopted in qualitative research. It is also necessary to detail the course followed in executing the analysis based on these methods, the same way it is done with interviews.

However, even with the advancement of publications in management (Lukosevicius *et al.*, 2019), it seems that there is still no concern in this field with the transition stage between the interviews and the analysis in qualitative research, i.e. the transcriptions. Every research involving the conduction of interviews also involves the transcription of the conversation into text to facilitate the analysis process, as well as to expose the reports or quotes to readers. Yet, qualitative studies in management do not usually emphasize the transcription technique in method sections, and generally, there is only a simple sentence saying that "the interviews were transcribed". Therefore, some questions about the transcription technique emerge: How were the interviews transcribed? What are the procedures for transcription? What are the limitations? What guarantees the quality of a transcription?

About these issues, it is relevant to emphasize that some methodology manuals adopted in the management field do not detail the procedures that should be used in conducting transcriptions. When analyzing the books of Creswell (2010) and Flick (2013), which are

widely spread and used as methodological guides in management graduate programs in several universities, it is noticed that the authors do not describe the transcription technique. In the few cases in which the transcription is cited in these works, it appears as a necessary action (for conducting data analysis), but that, a priori, has no significant relevance since it is not discussed.

Considering the methodological gap presented, this paper aims to discuss the relevance of detailing the methodological procedures adopted in the transcription in research reports in the management field. This research is based on the understanding that many times, and without apparent justification, the transcription is not discussed in works of methodology in Social Sciences (Farías & Montero, 2005), especially in the management field. This can lead to an (erroneous) understanding of transcription as an objective and pragmatic action (Davidson, 2009). Instead of an objective action, transcription is a representational process immersed in the subjective interpretation of the researcher (Bucholtz, 2000), requiring reflexivity of the person who is conducting the transcription process (Oliver, Serovich, & Mason, 2005).

Thus, this study shows the different aspects that permeate the transcription technique and the way that detailing the procedures can further increase the qualitative research validity in the management field. Such understanding goes beyond the purely theoretical debate since it becomes essential to construct scientific reports. Therefore, this paper contributes to the methodological description that management students and researchers can adopt when making transcriptions.

Based on this detailing, especially in scientific papers, the editors and reviewers of management journals will have more elements on the methodological quality employed in qualitative research, which will contribute to the evaluation process and the acceptance of papers. In addition, this study collaborates to the stimulus of the analytical spreading of an important technique of qualitative research (Davidson, 2018) that has not yet received attention in management studies.

This paper is characterized as a methodological essay, i.e. a theoretical essay oriented to a methodological discussion or approach. Thus, it is independent of empirical evidence and has an amorphous structure (Soares, Picolli, & Casagrande, 2018). Besides that, this methodological essay focuses on the development of reflections that impact the essential discussions for the advancement of the (administrative) science, and the orientation of this type of study is not based on a search for true answers and statements, but on questions that guide and assist people to have deeper thoughts on certain aspects (Meneghetti, 2011).

Structurally, in addition to this introduction, the characteristics of transcriptions are presented and the applicability of that is discussed using two techniques. Also, the relations of these transcription techniques with content analysis and discourse analysis are described, and it is demonstrated how transcription has been neglected in management studies. Thus, the paper seeks to call the students and researchers' attention to the potential of the methodological description of transcriptions as a way to improve the rigor of qualitative research in management, i.e. it is proposed that transcription should be considered a quality criterion in qualitative research.

2. What is known about transcriptions?
In qualitative studies, researchers, especially in the Social Sciences, use interviews as a way to discover or interpret the meaning of certain events or facts reported by informants (Farías & Montero, 2005). Interviews can be understood as a social rhythm (Kvale & Brinkmann, 2009) or an interactional event (Mondada, 1997) between actors, based on realities and cultural language practices that may be different for the actors involved in the process. In this way, the linguistic constructions that occur in the scope of the interviews are developed

through socio interactional processes (Santos, 2012), where the (social, cultural or political) reality of each actor is modified, constructed and/or deconstructed amid the reciprocal influence of language and personal values.

It is possible to affirm that interviews are socio-cultural constructions based on the subjectivity of the involved actors, requiring the attention of the researchers to perform interpretative actions of the meanings coming from the interviews. This interpretative process is part of the data analysis stage, but for the analytical deepening, it is necessary to transcribe the interviews (that are usually recorded), which is a central practice in qualitative research (Davidson, 2009). At the same time, the transcriptions present many complexities and can be performed through different routes (Oliver *et al.*, 2005). Thus, transcription seeks to transpose meanings and sociocultural representations from a spoken language to a written language (Ong, 1982), being a process permeated by social, cultural, political and epistemological judgments of the researcher (Kvale & Brinkmann, 2009).

Historically, studies about transcription emerged in Linguistics' field as the seminal work developed by Ochs (1979). Currently, many fields in Social Sciences, such as management, adopt transcriptions in qualitative research. In relation to the concept, the transcription literature provides many definitions of transcription ranging from the perspective of conversation analysts to researchers in linguistic anthropology and sociolinguistics (Davidson, 2009). For Davidson (2009), the different definitions come to a common understanding, in which the transcriptions are understood as data used by researchers, being developed through a selective process composed by definitions and reflexive theoretical objectives (Ochs, 1979).

The transcription has been used over time as a way to show evidence about certain phenomena that constitute research interest in a study (Duranti, 2006). The author states that transcription can be understood as a cultural practice. From this perspective, it is possible to infer that the act of transcribing can be influenced by cultural characteristics related to an institutional environment, academic environment and the background of the researcher who conducts the transcription process. Thus, a researcher from the north region of a given country can transcribe an interview, and the transcript will have certain characteristics that are not present in another transcript coming from the same interview, but transcribed by a researcher from the south region of this country.

This distinction occurs because of cultural differences, showing that transcription should not be understood and conducted as a mathematical process, in which there is a path to follow and a single result to achieve. That is, the act of transcribing is not a static process, but it is permeated by several factors that can influence the configuration of the transcript. This is consistent with Bucholtz's (2000) view of transcription as an interpretive process about what is transcribed and how it will be transcribed. In this way, it is possible to affirm that reflexivity is an inherent component of the transcription process, as stated by Bucholtz (2000) and Oliver *et al.* (2005), which leads to the understanding of transcription as a process not only objective (in certain aspects), but also subjective (Bucholtz, 2000), since it characterizes a representational procedure (the transcript) of the data coming from the interviews that are shaped by the researcher (Green, Franquiz, & Dixon, 1997).

The act of transcribing can be based on certain pragmatic logics since they can facilitate the reader's understanding. For example, if the interviewee speaks with a very low voice, it will probably not be possible to understand some words recorded in the audio. Hence, in the transcript, the researcher will need to inform the reader about this situation, which can be demonstrated by the following expression: "(incomprehensible)", as Marcuschi (2007) argues.

Thus, it is perceivable that objectivity is part of the transcription process, as well as subjectivity, since in the mentioned case above, if the researcher hears the recorded audio

again and realizes that the respondent said a certain word but is not sure, the researcher can put this word in parentheses in the text, stating that there is no certainty that the word was spoken (Marcuschi, 2007). This example demonstrates the subjective nature of the transcription, because another researcher can listen to the same audio and understand a different word, and with this, two transcripts from the same interview and its respective recording may present different words, putting in risk the meaning of the transcription and, consequently, the result of the data analysis.

Deepening the discussion about the need of standardization (objectivity) for a better understanding of transcription by readers, Marcuschi (2007) presents some norms that can be adopted in the transcription process. The norms are relevant to the transcription process because they help to minimize inconsistencies that may arise due to technical issues of the recording equipment and to noise or interferences that occur during the interview (Farías, & Montero, 2005; Oliver *et al.*, 2005).

Based on the norms postulated by Marcuschi (2007), it is possible to format the transcript so the reader can understand the adopted situations by the researcher when transcribing the interview, being evident in the transcript, for example, when the respondent emphasized a word. Some of the norms described by Marcuschi (2007) were grouped in Table I, along with the presentation of some illustrative examples of the application of the norms in transcripts. It is necessary to emphasize that many other norms are described in the work of Marcuschi (2007), but this paper does not intend to discuss such norms, only to emphasize their relevance.

Occurrence	Description	Signs	Examples
Doubts and assumptions	It is common not to understand parts of speech. In this case, the place is marked with parentheses, having two options: (a) indicate them with the expression "incomprehensible" or (b) write in them what the transcriber think to have heard	( )	Interviewee: There is the (impact). There are in my view three important impacts
Sudden truncations	When an interviewee cuts a unit, it is possible mark the suit with a bar	/	Interviewee: So, we have here sev/85 per cent preservation
Emphasis or strong accent	When a syllable or a word is pronounced with emphasis or accent stronger than usual, the fact is written in uppercase	UPPERCASE	Interviewee: The customer, in turn, when he goes to buy, he asks for ALL of this documentation before closing the deal
Reviews from the Analyst	To comment something that occurs, double parentheses are used at the occurrence moment or just before the segment to which it refers	(( ))	Interviewee: ((hesitates to answer the question)) See . . . What . . . it was said very long ago that it was impacting on the region in question
Pause filled, hesitation or attention signals	Basically there are reproductions of sounds whose spelling is much discussed, but some are more or less clear, like: "hm" and several others		Interviewee: Later, it goes to (incomprehensible). . . That's the preview, then comes ah . . . ah. . . are three licenses

Source: Elaborated by the authors from the compilation of information present in Marcuschi (2007)

Table I.
Transcription norms

Besides Marcuschi's (2007) work, there are other works (e.g. Atkinson & Heritage, 1999; O'Connell & Kowal, 1994) that discuss standardization in transcription (i.e. notation or norms) and it is relevant for the researcher to inform in the research report the source of the norms that supported the transcription. Thus, the reader is not taken by surprise when encountering unknown symbols in a report from a transcribed speech, because the reader will have the source information of the adopted norm and will be able to consult it. Also, the researcher can use some norms of Marcuschi (2007), for example, and some norms from other works in the same transcript, as long as the researcher makes clear to readers the sources used and the rules corresponding to each author (work). Likewise, the researcher can create transcription norms, considering that the researcher explicitly informs and, if possible, graphically presents such norms created for the reader's better understanding.

Although transcription norms are pragmatic concerning standardizing the transcription process, there will always be specific questions that require subjective actions in the transcription process. An example of that is the researcher's decision to present the written text as it was spoken (tending to a more natural or informal language, if any) or making adaptations between what was said and what was written to present a text in accordance with the language's norms (formal language). Such reflections are essential in defining transcription, and they form the core of the following discussion.

3. Naturalized and denaturalized transcription
There are two basic types of transcription: naturalized and denaturalized, and they often represent extremes in the variety of transcription options (Bucholtz, 2000). These positions correspond to two language representation views (Oliver *et al.*, 2005). Both forms of transcription have the potential to serve as politicized tools of linguistic representation and, in some cases, are more similar than different (Bucholtz, 2000). The discussion on this theme takes shape from two main views, which may be contradictory and at the same time, complementary. These views are here denominated as theoretical perspectives.

3.1 First perspective – the view of Bucholtz (2000)
In the *denaturalized transcription*, the text has links with the forms of the oral discourse, making that, due to its fidelity to the spoken language, the written text loses sense in some cases and this ends up generating a paradox of using written texts to represent spoken languages (Bucholtz, 2000). When the transcription is denaturalized, a description of the speech's details occurs, and they are also exposed in the written report (Bucholtz, 2000). In such cases, oral details are included through technical transcription systems – norms. Thus, denaturalized transcription preserves the characteristics of oral language (Davidson, 2009). With that, the text that reflects a speech ends up being less comprehensible for readers who are not accustomed to finding oral discourse characteristics in a written text (Bucholtz, 2000). For this author, the more the text reflects the "orality" of the speech, the less transparent and clear it will be for readers who are not used to interpreting oral characteristics in a written text.

In *naturalized transcription*, the text is in agreement with the written discursive conventions (formal language); that is, the written oral discourse is privileged. The risk in this type of transcription is not emphasizing enough the linguistic form and its transformation from the speech to transcripts (Bucholtz, 2000). The naturalized transcription occurs when the written characteristics of the speech take precedence over those of the speech; therefore, the description of the interviews has many characteristics of the written language that, in fact, do not occur in the spoken dialogue, like commas, long stops and sentence completion (Davidson, 2009).

3.2 Second perspective – the view of Oliver et al. (2005)

Contrary to what was suggested by Bucholtz (2000), Oliver *et al.* (2005) believe that in *naturalized transcription*, the whole sentence is captured with as many details as possible. Thus, this transcription represents a "real world" approach (Cameron, 2001). In naturalized transcription, speech is expressed as it is, without being overly filtered by transcribers (Oliver *et al.*, 2005). The goal is to present the data in a natural, objective and accurate manner. This naturalized view of the conversation is captured in the transcription structure and in the discourse representation itself (Oliver *et al.*, 2005). This kind of transcription is suitable for those researchers who are interested in oral language intricacies. Oliver *et al.* (2005) point out that the effect of naturalism can alter our understanding of the social context of discourse because when naturally transcribing a recorded interview, assumptions can be made about what is standard and what is non-standard. According to the authors, a naturalistic approach provides details that may obscure substantial interview questions, and this may have some impact on data analysis.

In the opposite, *denaturalized transcription* preaches the constant grammar correction, the removal of the existing noises in the interviews and the standardization of non-standard speeches and accents (Oliver *et al.*, 2005). According to these authors, this transcription results in "clean" data, which is free of socio-cultural characteristics and information, and may even improve the study results. This approach also suggests a textual description of speech, and although it seeks a complete and faithful transcription (Cameron, 1995), denaturalized transcription does not consider the accents of involuntary vocalization and the representation of it in speech (Oliver *et al.*, 2005). In other words, for denaturalization, precision is fundamental for the interviews' transcription, pondering the meanings and perceptions made during the interview (Oliver *et al.*, 2005).

Based on the arguments listed in both perspectives, the concepts of naturalized and denaturalized transcription are synthesized in Figure 1.

| Authorship | Conceptualization | |
	Naturalized	Denaturalized
Bucholtz (2000)	Text is in agreement with the written discursive conventions (formal language); may not sufficiently emphasize the linguistic form.	Fidelity to spoken language; oral details in speech; the text must reflect the "orality" of the discourse.
Oliver *et al* . (2005)	As many details as possible; the "real world" approach; speech is expressed in writing as it is said.	The constant correction of grammar is preached; the meanings and perceptions made during the interview are pondered.

Subtitles

1 Incompatibility between authors in the **Naturalized** concept

2 Incompatibility between authors in the **Denaturalized** concept

3 Conceptual compatibility between authors
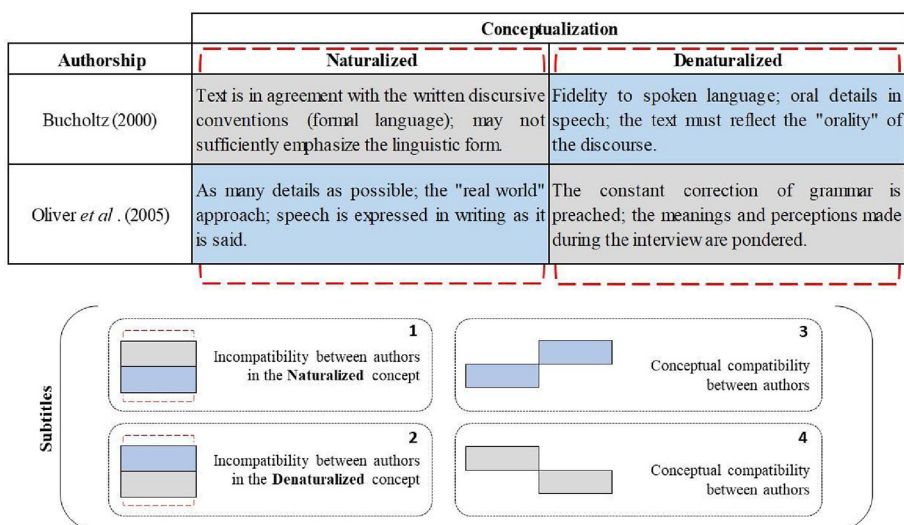
4 Conceptual compatibility between authors

Figure 1.
Concepts of naturalized transcription and denaturalized transcription

Source: Elaborated by the authors based on Bucholtz (2000), Oliver *et al.* (2005)

As shown throughout this section, the two perspectives share similar and complementary views on the same phenomena (the two transcription techniques), since the concepts (naturalized and denaturalized) given for each phenomenon are inverse if the two perspectives are compared (according to subtitles 1 and 2 of Figure 1). This is clearly illustrated in Figure 1, because the concept of naturalized transcription for Bucholtz (2000) is the same as the one of denaturalized transcription for Oliver *et al.* (2005), and this inverse logic also occurs in the understanding of denaturalized transcription for Bucholtz (2000) and its equivalence to naturalized transcription for Oliver *et al.* (2005).

How to proceed when facing this confusion of concepts? To minimize this confusion, it is necessary to understand that transcription is a cultural practice (Duranti, 2006), in which the researcher needs to recognize and be sensitive to the linguistic and cultural nuances of transcription as a social practice (Marcuschi, 2007). In this way, transcription can be understood as a cultural activity in which its transcript has a socio-historical character and can be considered a cultural artifact (Duranti, 2006) capable of relating the linguistic form to the social world (Jaffe, 2000).

From this understanding, it can be deduced that even though Bucholtz's (2000) work introduces the perception of transcription as a sociocultural practice (Jaffe & Walton, 2000), the conceptual essence of naturalized transcription adopted by that author is not a purely cultural understanding, since it starts to denote a pragmatic (and even hegemonic) understanding supported by formal language.

On the other hand, the concept of naturalized transcription from Oliver *et al.* (2005), which is related to informal language (a socially and culturally practiced in everyday life), better denotes the character of transcription as a cultural practice. Such understanding comes from the fact that formal language is preceded by the informal language, since linguistic variations arise in everyday practice and over time are legitimized and institutionalized as a standard, that is, formal language.

In this way, the concepts used in this paper (naturalized and denaturalized) are the ones proposed by Oliver *et al.* (2005), because they better represent the role of transcription as a process permeated by the knowledge of social, political and cultural dynamics (Pelzang, & Hutchinson, 2018) specific to a research context. Having clarified the confusion of concepts, it is important to note that the work of Bucholtz (2000) is complementary to that of Oliver *et al.* (2005), as shown in subtitles 3 and 4 of Figure 1. Thus, the concept of naturalized transcription (Oliver *et al.*, 2005) is complemented with that of denaturalized (Bucholtz, 2000) transcription, because they are congruent (according to subtitle 3 of Figure 1) and vice versa for denaturalized (Oliver *et al.*, 2005) and naturalized (Bucholtz, 2000) transcription (according to subtitle 4 of Figure 1).

3.3 Naturalized or denaturalized: is there a better technique?
On the one hand, the transcription classified as *naturalized* (Oliver *et al.*, 2005) can generate conflicting interpretations, because readers who are not accustomed to deciphering these interventions in the dialogue, such as noises, pauses in speech, slang, accents, etc. end up decoding these elements in the way they believe are the best, and this can cause different understandings from the same study.

However, by leaving the interview in its purest and least altered form, the researcher would be as transparent as possible with the readers to demonstrate the reason for the analysis. By keeping the transcripts on their original form, respondents end up speaking for themselves (Schegloff, 1997), since dialogue is not simply an exchange of ideas, but it also involves verbal and non-verbal cues that can alter the tone of the conversation and, consequently, its meaning (Oliver *et al.*, 2005).

On the other hand, when considering the *denaturalized* transcription (Oliver *et al.*, 2005), the author interprets what was said, the way it was said, the noises and interferences in speech, being responsible for this understanding, making the necessary adjustments in the transcription and passing this data to readers, thus everyone will have the same view of what was said. However, depending on the author who does this refinement of the interviews, the results may vary, as well as the data analysis.

Therefore, the great dilemma between the two transcription techniques lies on how much the researcher wants to make the details and the interferences of the interview available and on how much they believe these elements are relevant to the study. This choice considers that, inevitably, transcription is an act of power, since it consists of interpretation and representation actions, involving the context in which speech is inserted (Bucholtz, 2000).

Additionally, it is not possible to develop a perfect transcription process with no ideological positions and personal interpretations (Bucholtz, 2000). For this author, the act of transcribing is authorial and requires creativity, because it considers that humans are not machines, but people who interpret a text and therefore select the most important points according to their own view (or epistemology). Hence, Bucholtz (2000) believes that the act of transcription must be done with responsibility, but not necessarily with neutrality. However, in this paper, it is understood that the choice made should be clearly exposed to readers, as a transparency action, allowing them to discern on the methodological course adopted and have a basis to critically reflect the level of the methodological rigor used (in the process of transcription).

That said, the best technique of transcription is [. . .] wait! There is no technique better than the other! The choice of one of the techniques is dependent on the researcher's reflexivity (Oliver *et al.*, 2005) and there may be even a half term – using a mix of the two techniques in the same transcription. Regardless of the option, this should be explicitly informed to the reader, as discussed previously. Even if the option is made by the researcher, there are some factors that induce the use of one technique or another, such as the method of data analysis, which is discussed below.

4. Naturalized and denaturalized transcription, norms of transcription, content and discourse analysis: plausible relations
The techniques of naturalized and denaturalized transcription come from the method of data analysis that was defined in the methodological course, being emphasized those of content analysis and discourse analysis. These methods were selected (among many others) because they are widely used and known in qualitative research in the management field, contributing to a better understanding of the relations here discussed. A priori, these relations may sometimes not be identified by the researcher, and this ends up generating an incongruence (little noticeable for some researchers) between the method of analysis and the technique of transcription prior to this stage.

A method of data analysis is a form of interpretation, having specific procedures or techniques that prepare the data for the analysis, since this process aims to make sense in texts (Creswell, 2010). Clearly, the choice of the most appropriate analysis procedure depends on the study purposes, the researcher's ideology and, of course, on the analyzed data (Chizzotti, 2006). Referring to a reverse flow to what was proposed by Chizzotti (2006), it is believed that the adoption of a transcription technique depends on the method of analysis employed. Therefore, after going through all the methodological planning until the decision by the method of analysis that best fits the research, the researcher must return to the previous stage and decide if it will be used naturalized or denaturalized transcription.

How to know which transcription technique is most appropriate for a given method of analysis? The literature already points to discussions that help in this decision, because as Davidson (2009) states, several methods of analysis can be related to the two transcription techniques. As Oliver *et al*. (2005) suggest, discourse analysis is related to denaturalized transcription. However, it is argued that such a relationship is fragile (and even incompatible), because it is understood that the *discourse analysis* has a direct relation with the *naturalized transcription*, according to the arguments that follow.

This relation is possible because the discourse analysis tries to ponder the mechanisms of domination that are hidden under the language (Orlandi, 2013). The discourse analysis studies words and expressions as well as their form and structure, the use of language, context, interpretations and meanings of discursive practices (Putnam & Fairhurst, 2001), given that it seeks inference through discursive surface effects (Bardin, 2016).

Thus, in the discourse analysis, there is something (subjective and implicit) that goes beyond what was simply said or written, since it investigates how the content is used to achieve a certain effect, is imperative that the researcher has the sensitivity of capturing different subjective interpretations and implied speech in a discourse (Vergara, 2012). That is, to capture the essence of a discourse, it is necessary to analyze it also from the expressions that were spoken or expressed physically by the interviewee. This can only be demonstrated in the transcript from the literal transcription of the interview, without modifications adapting the text to the formal language, that is, the naturalized transcription.

Therefore, language addictions, slangs, syllabic repetitions and even facial expressions or body movements are able to indicate the presence of emotional situations that can reinforce or contradict the words said by the respondents, leading to certain inferences during the analysis. And in order for the researcher to have access to this information in the discourse analysis stage, it is necessary to develop the transcription in a naturalized way.

Just as discourse analysis is for naturalized transcription, *content analysis* is for *denaturalized transcription*. Content analysis includes the explanation, systematization and expression of speech content so that logical deductions can be made according to the context of these speeches, and to who issued them and what effects are intended (Bardin, 2016). This method relates the semantic structures to the sociological structures of the statements and analyzes the texts in a way that it is possible to identify their characteristics (Minayo, 2001). The purpose of the method is to understand the meaning of the communications performed, the manifest and latent content, as well as the meanings in the speech (Chizzotti, 2006), which allows to treat the collected data in a way that it is possible to identify the meaning of what was said (Vergara, 2012).

In this way, while the discourse analysis focuses on the sense of discourse, the content analysis focuses on the content of the text (Caregnato & Mutti, 2006), not being much relevant for the latter, for example, the expressions of informal language or other emotional aspects expressed by respondents during an interview. Thus, there is no need to perform a naturalized transcription, which allows the researcher to use reflexivity to leave the text in accordance with the formal language and extract the necessary analytical content to conduct the research.

And where transcription norms enter into these relationships? Norms, like those postulated by Marcuschi (2007), are essential for the naturalized transcription, because they help to include spoken phenomena in the written text, which will help the conduction of discourse analysis, for example. Thus, it is relevant to use norms to demonstrate when the respondent repeats certain expressions such as "hm [. . .] hm [. . .]", which may indicate that the respondent is uncertain about the response or speech. Also, the writing of this repetition assists in conducting inferences in discourse analysis, leaving such inference in a clear way (by demonstrating the interview reports or quotes) to the readers of the research report.

In the content analysis, because there is no need to detail informal expressions of the language, the norms are not faithfully followed, since denaturalized transcription prevails. However, it is understood that some norms are necessary for this type of transcription, as the indication that at a certain moment the researcher did not understand a word that the interviewee said, as the use of (incomprehensible). In addition, if the transcript highlight slangs or unknown expressions, such reports from transcription presented in a paper, for example, can make the reading of these reports tedious or incomprehensible to the readers since the focus is on content and not in speech. Thus, if a respondent has a low level of education and speaks in a wrong way (grammatically), the ideal is to demonstrate these words correctly (formal language/denaturalized language) in transcripts, leaving the text concise and clear to readers.

In this way, it is noticeable that there are relations between the transcription techniques to be adopted (naturalized or denaturalized), the transcription norms and the methods of data analysis (content or discourse analysis), since the last two induce to one transcription technique that must be based on transcription norms. These norms must be strongly present in the naturalized transcription and not so present in the denaturalized transcription. The presence (although minimal) of transcription norms in the denaturalized technique is justified by the reflexivity that is also necessary in this technique, and in some cases, it will be necessary to use some norms to demonstrate where there is the researcher's interpretation (subjective aspect) in the transcription.

5. From relevance to anonymity or from anonymity to relevance

Although this paper has discussed the role of transcription for qualitative research in management and the relevance of detailing (in research reports) the methodological procedure used for conducting the transcription, it is relevant to reinforce the argument that structures the construction of this paper: the neglect of transcription as a component of scientific rigor in qualitative academic studies in the management field.

That said, and taking advantage of the amorphous structure inherent in the construction of a methodological essay, a simple theoretical analysis is presented below to enhance the central argument of this paper. This analysis consisted of the reading of scientific papers published in three generalist top journals of management with a high impact factor. After selecting the journals, it was accessed the current issue of each of the three (on May 10th, 2019) and all papers that conducted data collection by interviews were selected. Sequentially, it was sought to identify in these papers *how* the interviews were transcribed and, as expected, the papers generally stated that "the interviews were transcribed", but did not inform how they were transcribed. Table II compiles the information presented in this paragraph.

Journal	Impact factor (JCR)[a]	Issue	No. of papers in the issue	Papers with interviews that were transcribed	In how many papers is detailed how the interviews were transcribed?
Academy of Management Journal	6.700	62 (2)	12	2	0
Journal of Management	8.080	45(5)	16	2	0
Journal of Management Studies	5.329	56 (3)	8	5	0

Note: [a]2017 Journal Citation Reports (JCR)
Source: Elaborated by the authors (2019)

Table II.
Methodological neglect of transcriptions in papers published in three top journals of management

Based on the information presented in Table II, it is possible to affirm that the methodological detailing of transcriptions in the qualitative research in management is supported by an anonymous perspective. Thus, it is understood from this that transcription is a given, static and institutionalized fact, and it is not necessary to detail the steps that shape the transcription process nor the choices subjectively adopted by the researcher during this process. This is nothing more than the lack of attention to an important methodological step for qualitative research since it is from the transcription that the data analysis is carried out within the scope of the interviews.

In contrast to the current academic state of methodological neglect of transcription, it is necessary to include the methodological detail adopted by the researchers to conduct the transcription in the research reports, especially in papers. It is believed that this action further strengthens the quality employed by the researchers during the conduction of the research, as well as generates transparency so that readers can discern about the methodological rigor employed during the conduction of the work.

6. In search of the final remarks
Nowadays, it is identified that the method sections are being shortened in research reports, especially in papers, which makes researchers deduct that this essential part should be succinct. However, considering its essence and specificities, qualitative research needs more detailing about the methodological procedures. This ensures more clarity to the reader to understand the course adopted, the motivations that led to the course chosen instead of others and the constraints faced. Therefore, detailing allows greater transparency regarding the reliability of the research results and can be a quality criterion to evaluate the research rigor (Godoy, 2005).

In this way, it is necessary to consider the transcription as one quality criterion in qualitative research, which can be demonstrated by means of the methodological detailing in scientific reports. This quality criterion contributes to enrich the methodological rigor, i.e. quality itself (Lincoln, 1995) and demonstrates the researcher sincerity (self-reflexivity and subjective aspects) in conducting the research (Tracy, 2010). Thus, considering that there are many ways of enhancing validity in qualitative research (Mays, & Pope, 2000), the methodological detailing of transcription as a quality criterion can be one of these ways, which contributes to the quality increase in qualitative research (Golafshani, 2003).

Therefore, how to indicate the adopted transcription procedures in a research report? There is no unique recipe or template to be followed. The methodological description will depend on the authors' intention to clarify certain aspects that were relevant during the transcription process. Nonetheless, it is suggested that the researcher indicates which technique (between naturalized or denaturalized transcription) was adopted (according to the classification already discussed in this paper) or if a variation between them was adopted using reflexivity.

Based on reflexivity, the researcher can report, for example, that the naturalized technique was used, but that at times it was used a more subjective and reflexive basis to change the spoken language so that it became clear (formal language format) in the transcript, avoiding language confusion for readers. Going further, it is relevant to relate the adopted transcription technique with the method of data analysis used in the research, making it clear to readers that the denaturalized transcription was adopted with the purpose to facilitate the content analysis process, or that the naturalized transcription provides greater robustness for the discourse analysis.

It is also relevant to show the reader the adopted transcription norms and its sources. Thus, if the researcher creates norms, a table illustrating such norms can be created, as shown in Table I. This contributes mainly to the clarity in the reading of the reports coming from the interviews since the reader needs to know the norms to be aware of how to identify and understand them by reading interview quotes in scientific reports.

Such detailing is necessary because researchers need to look at their own choices of transcription, including their own limitations, and it is important to explicit them to readers (Bucholtz, 2007), since there are analytical and/or political biases (Jaffe, 2000) that can induce the process of interpretation between spoken and written language, which can change, consecutively, the result of the research. Thus, detailing methodological procedures of transcription in papers can help the evaluation process in journals, since the transcription as a quality criterion can provide more bases for the reviewers to analyze the methodological rigor (including other methodological procedures of the research) from the evidenced transparency in the text.

This paper also presents a potential contribution to the advancement of qualitative research in the management field, since it stimulates reflection on researchers, especially on those who do not have a deep knowledge of the transcription process. Moreover, by using a simplified language, this methodological study can serve as a guide to undergraduate and graduate management students, because it allows them to learn about transcription procedures and techniques, which will be relevant for their academic maturity on methodology. Hence, students will be able to conduct qualitative research with more reflexivity, precision, and detailing on transcription processes, avoiding (or reducing) possible confusion and misunderstandings in data analysis.

There is a variety of methods for data analysis in qualitative research (Gonçalves, 2016; Miles & Huberman, 1994), such as conversation analysis (Marcuschi, 2007), dialectical hermeneutic analysis (Minayo, 2006), narrative analysis (Ryan & Bernard, 2000), content analysis (Bardin, 2016) and discourse analysis (Orlandi, 2013). In this way, the choice for delimiting the unit of analysis of transcriptions only for content analysis and discourse analysis (for being more recognized in management) characterizes a limitation of this paper.

From this limitation and from the understanding that all of the methods of analysis above are based on different philosophical foundations (Chizzotti, 2010) and cultural practices, the following question arises: how do the naturalized and denaturalized transcription techniques, norms of transcription and reflexivity relate to each of these methods of analysis? This questioning is necessary to conduct any research based on interviews, allowing a better adaptation of the transcription technique (naturalized or denaturalized) to be adopted to (the specificities of) each method of analysis and can be investigated in future research.

Taking advantage of the discussion about specificities and the choice of discourse analysis and content analysis to support reflection on transcription techniques, another limitation of this paper is given by the consideration of these methods in a universal way. However, the method of content analysis is composed of a set of analysis techniques (Campos, 2004) that correspond to some variations of the content analysis, which also occurs with the method of discourse analysis. Thus, there are variations of both content analysis (Fonseca, 2009) and discourse analysis (Flick, 2013; Gonçalves, 2016) that were not considered in this discussion.

Some of these variations or techniques are associative content analysis, statement content analysis, thematic or categorical content analysis (Bardin, 2016), Foucauldian discourse analysis, semiotic discourse analysis and critical discourse analysis (Chizzotti, 2010), among others. Thus, future research may consider the particularities of each variation of content analysis or discourse analysis to better suit the transcription technique (naturalized or denaturalized) to be adopted for each one, from a higher or lower level of reflexivity (which will be determined by the specificities).

Considering the relevance of detailing the methodological procedures adopted for transcriptions conduction, it is noticed that the migration of the current paradigm in which relevance is obscured by anonymity to another possibility is a challenge. Thus, is it possible that relevance surpasses and supplants anonymity about the methodological detailing of transcriptions in qualitative research in management? This is an issue that remains to be thought out and rethought.

Finally, to the readers of this paper, a question is proposed: during your academic journey, how many papers have you read, written or reviewed that explain the methodological details adopted to conduct a transcription? With this, the possibilities are open to sympathizers and even to critics of the arguments presented here to take this discussion to the various academic circles that legitimize and institutionalize the (administrative) science.

References

Atkinson, J. M., & Heritage, J. (1999). Transcript notation – structures of social action: Studies in conversation analysis. *Aphasiology*, *13*, 243–249. http://dx.doi.org/10.1080/026870399402073

Bardin, L. (2016). *Análise de conteúdo*, São Paulo, Brazil: Edições 70.

Bertero, C. O., Alcadipani, R., Cabral, S., Faria, A., & Rossoni, L. (2013). Os desafios da produção de conhecimento em administração no Brasil [The challenges of management knowledge production in Brazil]. *Cadernos Ebape.Br*, *11*, 181–196.

Bucholtz, M. (2000). The politics of transcription. *Journal of Pragmatics*, *32*, 1439–1465. https://doi.org/10.1016/S0378-2166(99)00094-6

Bucholtz, M. (2007). Variation in transcription. *Discourse Studies*, *9*, 784–808. https://doi.org/10.1177/1461445607082580

Cameron, D. (1995). *Verbal hygiene*, London, United Kingdom: Routledge.

Cameron, D. (2001). *Working with Spoken Discourse*, London: Sage.

Campos, C. J. G. (2004). Método de análise de conteúdo: Ferramenta para a análise de dados qualitativos no campo da saúde [Content analysis: A qualitative data analysis tool in health care]. *Revista Brasileira de Enfermagem*, *57*, 611–614. http://dx.doi.org/10.1590/S0034-71672004000500019

Caregnato, R. C. A., & Mutti, R. (2006). Pesquisa qualitativa: Análise de discurso versus análise de conteúdo [Qualitative research: Discourse analysis versus content analysis]. *Texto and Contexto – Enfermagem*, *15*, 679–684.

Cavalcanti, M. F. R. (2017). Guidelines for qualitative research in organization studies: Controversy and possibilities. *Administração: Ensino e Pesquisa (RAEP)*, *18*, 457–488. https://doi.org/10.13058/raep.2017.v18n3.522

Chizzotti, A. (2006). *Pesquisa em ciências humanas e sociais [Research in humanities and social sciences]*, 8th ed., São Paulo, Brazil: Cortez.

Chizzotti, A. (2010). *Pesquisa qualitativa em ciências humanas e sociais [Qualitative research in humanities and social sciences]*, 3rd ed., Petrópolis, Brazil: Vozes.

Creswell, J. W. (2010). *Projeto de pesquisa: métodos qualitativo, quantitativo e misto [Research design: Qualitative, quantitative, and mixed methods approaches]* (3rd ed). Trad. Magda Lopes, Rev. téc. Dirceu da Silva. Porto Alegre, Brazil: Artmed.

Davidson, C. (2009). Transcription: Imperatives for qualitative research. *International Journal of Qualitative Methods*, 8, 1–52. https://doi.org/10.1177/160940690900800206

Davidson, C. (2018). Reflection/commentary on a past article: "Transcription: Imperatives for qualitative research". *International Journal of Qualitative Methods*, 17, 1–3. https://doi.org/10.1177/1609406918788222

Duarte, R. (2004). Entrevistas em pesquisas qualitativas [Interviews in qualitative research]. *Educar em Revista*, 213–225. http://dx.doi.org/10.1590/0104-4060.357

Duranti, A. (2006). Transcripts, like shadows on a wall. *Mind, Culture, and Activity*, 13, 301–310. https://doi.org/10.1207/s15327884mca1304_3

Farías, L., & Montero, M. (2005). De la transcripción y otros aspectos artesanales de la investigación cualitativa. *International Journal of Qualitative Methods*, 4, 53–68. https://doi.org/10.1177/160940690500400104

Flick, U. (2013). *Introdução à metodologia de pesquisa: Um guia Para iniciantes [Introducing research methodology: A beginner's guide to doing a research project]. Trad. Magda lopes, rev. Téc. Dirceu da silva*, Porto Alegre, Brazil: Penso.

Fonseca, W. C. Jr, (2009). Análise de conteúdo [Content analysis]. In J. Duarte, & A. Barros, (Eds.), *Métodos e técnicas de pesquisa em comunicação [Communication research methods and techniques]* (2nd ed., pp. 280–303). São Paulo, Brazil: Atlas.

Gerhardt, T. E., Ramos, I. C. A., Riquinho, D. L., & Santos, D. L. (2009). Estrutura do projeto de pesquisa [Research project structure]. In T. E. Gerhardt, & D. T. Silveira, (Eds.), *Métodos de pesquisa [Research Methods]* (pp. 65–88). Unid. 4 Coordenado pela Universidade Aberta do Brasil – UAB/UFRGS e pelo Curso de Graduação Tecnológica – Planejamento e Gestão para o Desenvolvimento Rural da SEAD/UFRGS. Porto Alegre, Brazil: UFRGS.

Gerhardt, T. E., & Silveira, D. T. (2009). Introdução [Introduction]. In T. E. Gerhardt, & D. T. Silveira, (Eds.), *Métodos de pesquisa [Research methods]*, Coordenado pela Universidade Aberta do Brasil – UAB/UFRGS e pelo Curso de Graduação Tecnológica – Planejamento e Gestão para o Desenvolvimento Rural da SEAD/UFRGS. Porto Alegre, Brazil: UFRGS, 9.

Gil, A. C. (2007). *Como elaborar projetos de pesquisa [How to design research projects]*, 4th ed., São Paulo, Brazil: Atlas.

Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16, 15–31. https://doi.org/10.1177/1094428112452151

Godoy, A. S. (2005). Refletindo sobre critérios de qualidade da pesquisa qualitativa [Reflecting on qualitative research quality criteria]. *Gestão.org*, 3, 80–89.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report*, 8, 597–606. https://nsuworks.nova.edu/tqr/vol8/iss4/6

Gonçalves, A. T. P. (2016). Análise de conteúdo, análise do discurso e análise de conversação: Estudo preliminar sobre diferenças conceituais e Teórico-Metodológicas [Content analysis, discourse analysis, and conversation analysis: Preliminary study on conceptual and theoretical methodological differences]. *Administração: Ensino e Pesquisa (RAEP)*, 17, 275–300. https://doi.org/10.13058/raep.2016.v17n2.323

Green, J., Franquiz, M., & Dixon, C. (1997). The myth of the objective transcript: Transcribing as a situated act. *TESOL Quarterly*, 31, 172–176. https://doi.org/10.2307/3587984

Jaffe, A. (2000). Introduction: Non-standard orthography and non-standard speech. *Journal of Sociolinguistics*, 4, 497–513. https://doi.org/10.1111/1467-9481.00127

Jaffe, A., & Walton, S. (2000). The voices people read: Orthography and the representation of nonstandard speech. *Journal of Sociolinguistics*, *4*, 561–587. https://doi.org/10.1111/1467-9481.00130

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing* (2nd ed.). London, United Kingdom: Sage.

Lincoln, Y. S. (1995). Emerging criteria for quality in qualitative and interpretive research. *Qualitative Inquiry*, *1*, 275–283. https://doi.org/10.1177/107780049500100301

Lukosevicius, A. P., Guimarães, J. C., & Zouain, D. M. (2019). Aceitar ou rejeitar? Eis a questão dos tipos de argumentos para a justificativa de artigos em administração [To accept or reject? The issue of the types of arguments for justifying papers in administration]. *Administração: Ensino e Pesquisa (RAEP)*, *20*, 1–23. https://doi.org/10.13058/raep.2019.v20n1.1222

Marcuschi, L. A. (2007). *Análise da conversação [Conversation analysis]* (6th ed.). São Paulo, Brazil: Ática.

Mattos, P. L. C. L. (2011). Os resultados desta pesquisa (qualitativa) não podem ser generalizados": pondo os pingos nos is de tal ressalva [The results of this (qualitative) research cannot be generalized: dotting the i's on this caveat]. *Cadernos Ebape.Br*, *9*, 450–468. http://dx.doi.org/10.1590/S1679-39512011000600002

Mays, N., & Pope, C. (2000). Assessing quality in qualitative research. *BMJ*, *320*, 50–52. https://doi.org/10.1136/bmj.320.7226.50

Meneghetti, F. K. (2011). O que é um ensaio-teórico? [What is a theoretical essay?]. *Revista de Administração Contemporânea*, *15*, 320–332. https://doi.org/10.1590/S1415-65552011000200010

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). London, United Kingdom: Sage Publications.

Minayo, M. C. S. (2001). *Pesquisa social: Teoria, método e criatividade [Social research: theory, method and creativity]*, Rio de Janeiro, Brazil: Vozes.

Minayo, M. C. S. (2006). *O desafio do conhecimento: Pesquisa qualitativa em saúde [The challenge of knowledge: qualitative research in health]* (9th ed.), São Paulo, Brazil: Hucitec.

Mitchell, K. M., & Clark, A. M. (2018). Five steps to writing more engaging qualitative research. *International Journal of Qualitative Methods*, *17*, 1–3. https://doi.org/10.1177/1609406918757613

Mondada, L. (1997). A entrevista como acontecimento interacional: Abordagem lingüística e conversacional [The interview as an interactional event: Linguistic and conversational approach]. *Rua*, *3*, 59–86. https://doi.org/10.20396/rua.v3i1.8640619

Ochs, E. (1979). Transcription as theory. In E. Ochs, & B. B. Schieffin, (Eds.). *Developmental pragmatics* (Chap. 3, pp. 43–72). New York, NY: Academic. Retrieved from http://www.sscnet.ucla.edu/anthro/faculty/ochs/articles/ochs1979.pdf

Oliver, D. G., Serovich, J. M., & Mason, T. L. (2005). Constraints and opportunities with interview transcription: Towards reflection in qualitative research. *Social Forces*, *84*, 1273–1289. https://doi.org/10.1353/sof.2006.0023

Ong, W. J. (1982). *Orality and literacy: The technologizing of the word*, London, United Kingdom: Methuen.

Orlandi, E. P. (2013). *Análise de discurso: Princípios & procedimentos [Discourse analysis: Principles & Procedures]* (11th ed.). Campinas, Brazil: Pontes.

O'Connell, D. C., & Kowal, S. (1994). Some current transcription systems for spoken discourse: A critical analysis. *Pragmatics*, *4*, 81–107. https://doi.org/10.1075/prag.4.1.04con

Pelzang, R., & Hutchinson, A. M. (2018). Establishing cultural integrity in qualitative research: Reflections from a cross-cultural study. *International Journal of Qualitative Methods*, *17*, 1–9. https://doi.org/10.1177/1609406917749702

Putnam, L. L., & Fairhurst, G. T. (2001). Discourse analysis in organizations. In F. M. Jablin, & L. L. Putnam, (Eds.), *The new handbook of organizational communication* (pp. 78–136). Thousand Oaks, CA: Sage. https://dx.doi.org/10.4135/9781412986243.n3

Ryan, G. W., & Bernard, H. R. (2000). Data management and analysis methods. In N. K. Denzin, & Y. S. Lincoln, (Eds.), *The handbook of qualitative research* (2nd ed., pp. 769–802). London, United Kingdom: Sage Publications.

Santos, C. C. C. (2012). Linguagem como prática social e mediadora da formação cultural e humana: Algumas reflexões [Language as a social practice and mediator of cultural and human formation: Some reflections]. *Rios Eletrônica*, *6*, 41–48. Retrieved from: https://www.fasete.edu.br/revistarios/internas/conteudo/resumo.php?id=97

Schegloff, E. A. (1997). Whose text? Whose context? *Discourse and Society*, *8*, 165–187. https://doi.org/10.1177/0957926597008002002

Soares, S. V., Picolli, I. R. A., & Casagrande, J. L. (2018). Pesquisa bibliográfica, pesquisa bibliométrica, artigo de revisão e ensaio teórico em administração e contabilidade [Bibliographic research, bibliometric research, review article and theoretical essay in administration and accounting]. *Administração: Ensino e Pesquisa (RAEP)*, *19*, 308–339. https://doi.org/10.13058/raep.2018.v19n2.970

Tracy, S. J. (2010). Qualitative quality: Eight "Big-Tent" criteria for excellent qualitative research. *Qualitative Inquiry*, *16*, 837–851. https://doi.org/10.1177/1077800410383121

Vergara, S. C. (2012). *Métodos de pesquisa em administração [Research methods in administration]*, 5th ed., São Paulo, Brazil: Atlas.

Corresponding author
Leandro da Silva Nascimento can be contacted at: lesnasc@gmail.com