ARTICLE

CONTENT ANALYSIS IN THE PERSPECTIVE OF BARDIN: CONTRIBUTIONS AND LIMITATIONS FOR QUALITATIVE RESEARCH IN EDUCATION[1]

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ABSTRACT: Content analysis refers to a set of techniques through which data can be analyzed. It is widely used in qualitative research, particularly in investigations in the field of education, as it is an effective method for understanding content that is not always explicit in discourse (whether it be a text, gesture, or utterance of a phrase, that is, any form of communication). This article aims to describe the methods and techniques of content analysis from Bardin's (2016) perspective, highlighting its contributions and limitations for qualitative approaches in education. This study employs a qualitative approach of a bibliographical nature, based on articles and books that address the topic. From Bardin's perspective, content analysis offers several important contributions to qualitative research in education, including systematic and rigorous data analysis, a deeper understanding of the phenomena studied, a flexible and adaptable approach, the possibility of identifying gaps in the literature, and data triangulation. However, the main limitations of content analysis for qualitative education research include the risk of reductionism, excessive subjectivity when constructing categories, difficulty in dealing with non-textual data, and limitations in generalizing results. Researchers must be aware of these limitations when using content analysis in their research.

Keywords: content analysis, qualitative research, educational research.

ANÁLISE DE CONTEÚDO NA PERSPECTIVA DE BARDIN: CONTRIBUIÇÕES E LIMITAÇÕES PARA A PESQUISA QUALITATIVA EM EDUCAÇÃO

RESUMO: A análise de conteúdo corresponde a um conjunto de técnicas por meio das quais se pode analisar um grupo de dados. É bastante utilizada em pesquisas qualitativas, especialmente nas investigações da área da educação, por se tratar de uma forma muito eficaz de se compreenderem os conteúdos nem sempre manifestados de um discurso (seja um texto, um gesto ou a enunciação de uma frase, isto é, qualquer forma de comunicação). Assim, o objetivo deste artigo é descrever o método e as

técnicas da análise de conteúdo na perspectiva de Bardin (2016) e suas contribuições e limitações para a abordagem qualitativa em educação. A investigação deste artigo apresenta a perspectiva qualitativa, do tipo bibliográfica, de natureza interpretativa, realizada em artigos e livros que tratam da temática. A análise de conteúdo, na perspectiva de Bardin, oferece várias contribuições importantes para a pesquisa qualitativa em educação, incluindo uma análise sistemática e rigorosa dos dados, uma compreensão mais profunda dos fenômenos estudados, uma abordagem flexível e adaptável, a possibilidade de identificação de lacunas na literatura e a triangulação dos dados. As principais limitações da análise de conteúdo para a pesquisa qualitativa em educação incluem o risco de reducionismo, o sobre-exceder na subjetividade diante da construção das categorias, a dificuldade em lidar com dados não textuais e as limitações na generalização dos resultados. É importante que o pesquisador esteja ciente dessas limitações ao utilizar a análise de conteúdo em suas pesquisas.

Palavras-chave: análise de conteúdo, pesquisa qualitativa, pesquisas educacionais.

ANÁLISIS DE CONTENIDO EN LA PERSPECTIVA DE BARDIN: CONTRIBUCIONES Y LIMITACIONES PARA LA INVESTIGACIÓN CUALITATIVA EN EDUCACIÓN

RESUMEN: El análisis de contenido corresponde a un conjunto de técnicas mediante las cuales se puede analizar un grupo de datos. Es ampliamente utilizado en la investigación cualitativa, especialmente en estudios del ámbito educativo, ya que es un método muy eficaz para comprender el contenido que no siempre se manifiesta explícitamente en un discurso (ya sea un texto, un gesto o la expresión de una frase, es decir, cualquier forma de comunicación). Por lo tanto, el objetivo de este artículo es describir el método y las técnicas del análisis de contenido desde la perspectiva de Bardin (2016), destacando sus contribuciones y limitaciones en los enfoques cualitativos aplicados a la educación. Este estudio emplea un enfoque cualitativo de tipo bibliográfico y de naturaleza interpretativa, basado en artículos y libros que abordan el tema. El análisis de contenido, desde la perspectiva de Bardin, ofrece varias contribuciones importantes a la investigación cualitativa en el ámbito educativo, tales como un análisis sistemático y riguroso de los datos, una comprensión más profunda de los fenómenos estudiados, un enfoque flexible y adaptable, la posibilidad de identificar lagunas en la literatura y la triangulación de los datos. Sin embargo, las principales limitaciones del análisis de contenido para la investigación cualitativa en educación incluyen el riesgo de reduccionismo, una subjetividad excesiva al construir categorías, la dificultad para manejar datos no textuales y las limitaciones en la generalización de los resultados. Es fundamental que el investigador sea consciente de estas limitaciones al utilizar el análisis de contenido en sus investigaciones.

Palabras clave: análisis de contenido, investigación cualitativa, investigaciones educativas.

INTRODUCTION

The stages of scientific research have constituted a vast field of investigation. This was because of the interfaces and interlocutions that are part of this process, especially in the analyses and discussions that can contribute to expanding and qualifying its development, and specifically in the methodological approach used by the researcher in relation to his object of study.

The methodological approach is a crucial point for the development of research and can give the research originality, rigor and scientific recognition. At this point, the paths to be followed by the researcher are structured, mainly in the production and analysis of data, which requires assertiveness so as not to compromise its development.

Studies in the field of social sciences, especially in the area of education have shown advances in the different types of research and approaches adopted in their investigations. Evolutionarily, in the

educational field, research with a qualitative approach has been privileged because it allows the analysis and understanding of phenomena that involve the complexity of educational actions (André, 2013).

The multiplicity of themes/objects of study that emerge in and from schools and the educational system as a whole has favored exploratory and descriptive studies as a way of analyzing and understanding the issues surrounding them. Thus, the qualitative approach contemplates the possibility of exploring a dynamic field that is established based on social, cultural, historical and political aspects in which empirical materialities are produced that need to be analyzed using techniques that favor the apprehension of perceptions, understandings, senses and meanings attributed and manifested in the object of study (Gatti; André, 2011).

In this sense, the researcher's choice for a certain type of research, data production and analysis technique needs to be articulated with the objectives, the research problems and with elements such as the number of participants, the scope and the context of the research (André, 2001, 2007; Flick, 2004; Gil, 2008; Minayo, 2014; Triviños, 1987). The intersection between these elements in a pertinent and cohesive way, combined with rigor and commitment throughout the investigative process, corroborates the credibility and recognition of the results presented.

Therefore, the data produced in research with a qualitative approach must be analyzed coherently, using techniques that allow for a reflective, comprehensive, and dynamic perspective. One of the qualitative data analysis techniques used in the field of education is content analysis (CA). Understood as a set of techniques that seeks to understand the meanings expressed by the subjects participating in a research, the documents analyzed, among other forms of expression, CA has been presented as one of the most widely used methods in studies in the educational field. For example, Gläser-Zikuda, Hagenauer, and Stephan (2020), in the article "The Potential of Qualitative Content Analysis for Empirical Educational Research," highlight that CA is frequently applied in empirical educational research to analyze complex and multifaceted phenomena, using both inductive and deductive approaches to develop analytical categories and codes.

As developed by Bardin (2016), CA has proven to be a robust and widely accepted methodological tool in qualitative research in education. Several studies highlight the relevance and contributions of this technique to the interpretation of complex data. Oliveira et al. (2003) highlight the durability and reliability of the method, underlining its acceptance by rigorous scientific journals, which reinforces the validity of CA in educational research. Mendes and Miskulin (2017) discuss CA as a fundamental methodology for educational research, comparing it to the artisanal work of constructing a patchwork, in which the choice of software and data collection are crucial to the quality of the research. Ferreira and Loguecio (2014) highlight CA as an important strategy for interpretive research in science education, with applicability in areas such as teacher training and physics teaching. Prezenszky and Mello (2019) demonstrate the importance of CA in constructing critical reviews of scientific production in education, highlighting Bardin's contributions to proposing rigorous methodological paths in bibliographic research. Mello, Netto and Lima (2024) review the advances in CA, highlighting the methodological evolution and the incorporation of new techniques to improve the accuracy of analyses, underlining the importance of adapting CA to different educational contexts. These studies corroborate the importance of a systematic and objective approach in the analysis of communications, contributing to the production of solid and rigorous knowledge.

Thus, by using CA from Bardin's perspective, this research aims to capture perceptions and meanings in a detailed and structured way, aligned with a consolidated tradition in qualitative research. From this perspective related to CA, the problem of this research seeks to answer the following question: what are the contributions and limitations of Bardin's CA technique for the qualitative approach in education? To answer this question, this article aims to describe the method and techniques of CA from Laurence Bardin's perspective, as well as its contributions and limitations for the qualitative approach in education. The text presents a qualitative research approach, of the bibliographic type of an interpretative nature and its objects of analysis are articles, books, theses and dissertations that deal with the theme.

Based on the results of the bibliographic research, we believe that this investigation can contribute to an improved understanding of CA in the qualitative approach in educational research, in addition to assisting in the training and development of researchers. The purpose is for researchers to be able to use

it, understanding that, in qualitative analysis, the data may not be organized and that it is necessary to use a technique to enable methodological clarity as well as credibility and rigor.

METHODOLOGICAL APPROACH OF THE RESEARCH

Methodologically, this study adopts a qualitative bibliographic approach, based on an interpretative nature, based on the analysis of articles as well as bibliographic references relevant to the thematic scope. The methodology employed consisted of exploring resources in physical and digital libraries, in addition to consulting databases and journals specialized in education, aiming to locate relevant materials.

In the initial process, keywords (content analysis; Bardin; qualitative research) related to the topic were used during the search in library catalogs and online databases (CAPES Periodicals Portal) to compile a preliminary list of relevant sources. A preliminary selection was conducted, in which the titles, abstracts and introductions of the resources were carefully reviewed to assess their relevance to the established research topic. Then, a thorough analysis of the selected materials was performed, recording relevant information, key findings and perspectives outlined by the authors.

Subsequently, the compiled information was structured into thematic sections to facilitate comparative analysis and the identification of gaps in existing knowledge. The comparative analysis included an assessment of the findings and perspectives present in the selected materials, emphasizing their convergences, divergences and specific contributions to the topic under analysis. Finally, a detailed synthesis was prepared based on the bibliographic scrutiny carried out.

BETWEEN SENSES AND MEANINGS: ANALYSIS OF QUALITATIVE DATA IN EDUCATIONAL RESEARCH

There is consensus in the literature that research can be conceived as qualitative, quantitative or mixed in nature (quali-quanti), and each of them is constituted based on the approach, focus, objectives, intentions and methodological paths adopted by the researcher (André, 2001, 2007; André; Gatti, 2008; Triviños, 1987). This dialogical relationship between the different elements that make up the investigative path contributes to outlining the discussions and considerations regarding the research object.

Understood as a set of systematic actions that aim to produce new knowledge based on a problem or object of study, research uses methodological procedures to support investigations. The relationship between these elements indicates the nature of the investigation, that is, which perspective will guide the researcher both in the development of the research and in the discussions and construction of the results.

For Gil (2008), research is defined as an intentional, rational and structured process in the search for answers, whose objective is to provide explanations to an existing problem. Therefore, to research is to investigate, it is the possibility of advancing, qualifying something that already exists or, even, discovering and producing something new in a constant relationship between subject and object, causing the emergence and/or improvement of research methods.

The emergence of qualitative research has its historical roots in the 18th and 19th centuries, when researchers and social scientists expressed dissatisfaction with the research methods used in the physical and natural sciences to explain human and social phenomena (André; Gatti, 2008; Lima, 2018; Zanette, 2017). In an evident criticism of positivism, considering the need to situate research in a context, the aim at the time was to recognize the relationship between subject and object in human and social phenomena, without disregarding the relationships that surround the space in which it is inserted.

Thus, the development of qualitative research embraces the proposition of an idealist-subjectivist perspective (André; Gatti, 2008) around the reality in which the subjects are situated. In this way, the view is shifted from quantification, accuracy and logical relations that explain how phenomena occur, and they begin to be understood through the constitutive movement of social relations, expanding the possibilities of understanding them outside the rigidity of quantitative research.

In the educational context, from the 1960s onwards, the principles and contributions of qualitative research began to gain notoriety driven by democratic ideals, struggles against racial discrimination and

other social causes that indicated the urgency of investigating the relationships established in everyday school life (André; Gatti, 2001, 2008; Gatti; André, 2011; Lima, 2018; Zanette, 2017). This broadened the investigative horizons and the possibilities of understanding relationships and their various manifestations.

In the educational field, qualitative research tends to focus on understanding the educational phenomenon, its developments, implications and relationships with other dimensions (André, 2007; Van Zanten, 2004), constituting "[...] a privileged occasion, bringing together the thoughts and actions of a person, or a group, in the effort to develop knowledge about aspects of reality that should serve to compose proposed solutions to their problems" (Lüdke; André, 2013, p. 2).

The objects of study and approaches used in this context are multifaceted and have expanded throughout history from different perspectives. In Brazil, the introduction of the qualitative approach in education "[...] was greatly influenced by studies developed in the area of program and curriculum evaluation, as well as by new perspectives for research into schools and classrooms" (André; Gatti, 2008, p. 4), later spreading to different themes that are part of the educational reality (Gatti; André, 2011; Lima, 2018; Van Zanten, 2004; Zanette, 2017).

The capillarization of themes and the scope of research in education demonstrate, in addition to the evolution of the scientific field, the fertile ground that presents as a science and the complexity found in educational relationships. Understanding them is an eminently human activity, which occurs through the reflective process, through interpretation and through the evidence that these perceptions point to and that can constitute epistemological advancement. Thus, the purpose of the production and analysis of qualitative data is "[...] to generate theories, description or understanding" (Bogdan; Biklen, 1994, p. 67).

One of the most common characteristics of this type of research is the possibility of exploring the senses and meanings attributed by the subjects in the object of study. As they are manifestations, subjective expressions make the analysis process an exercise that requires the researcher to distance from his/her beliefs and convictions and to focus on the interpretation of the data, contextualizing them with the theoretical framework.

For Bardin (2016, p. 47), this process challenges the researcher to follow two converging paths "[...] understanding the meaning of communication (as if he/she were the normal receiver) but also and, mainly, looking away to another meaning, another message". Given their complexity, these paths require a degree of organicity and rigor that ensures reliability and trustworthiness in the conclusions, as argued by André (2013, p. 96). Methodological rigor "[...] is not measured by naming the type of research but by the clear and detailed description of the path followed by the researcher to achieve the objectives and by the justification of the choices made along this path" (Bardin, 2016, p. 96).

Among the different possibilities and techniques for analyzing qualitative data, CA is one of the most used in social research and in the educational field since the data produced in this type of research are recorded through interviews, questionnaires, observation, focus groups, among other techniques that seek to capture what the subjects understand in the object of study.

The purpose of analyzing qualitative data in education is to establish an understanding of the universe under investigation based on individual perceptions. In other words, the final results from the analytical and interpretation process are formed from the multiplicity and diversity expressed individually. By considering the particularities, the horizons of contemplating divergent and convergent views regarding the object under research are broadened, establishing inferences that can refute or ratify the research assumptions. In this vein, Campos (2004) highlights that:

> In the world of qualitative research, the choice of method and techniques for data analysis must necessarily provide a multifaceted view of all the data collected during the collection period (corpus). This is invariably due to the plurality of meanings attributed to the producer of such data, that is, its polysemic character in a naturalistic approach. A method widely used in the analysis of qualitative data is content analysis, understood as a set of research techniques whose objective is to search for the meaning or meanings of a document (Campos, 2004, p. 611).

It is noted that the existence of the plurality of meanings attributed by the subjects participating in the research grants space to studies in the area of education. The unfolding of these different perspectives not only materializes in possibilities of deepening and meaning in the object but also challenges the researcher to abstract the essence of these understandings, often found between the lines of the speech or text analyzed.

In this sense, the richness of the production and analysis of qualitative data can be seen by identifying the details and essence that the subjects attribute to the topic. This abstraction cannot be established based on the rationality of research and quantitative data. However, the combination of qualitative and quantitative approaches is indicated to measure issues and problems in education that need to be quantified and explained based on understanding the reasons for their incidence or recurrence.

The multiple perspectives and understandings of topics in educational research allow us to infer considerations related to convictions, beliefs and values that cannot be identified through tabulations and statistics. Education is a human, cognitive, interactive, experiential, historical and cultural activity, established in a complex field in which each individual perceives themselves and their surroundings in different ways. It is necessary to consider these differences and diversities on a level of cognition that can only be understood through the meanings attributed to them.

Thus, the analysis of qualitative data in educational research covers not only the intricacies of uncertainties and weaknesses but also the convictions and certainties of the individuals in a problem, a phenomenon, a theme, and their manifestations need to be welcomed, interpreted and conducted with rigor and commitment, identifying the senses and meanings that constitute the basis for the production of new knowledge.

CONTENT ANALYSIS: TEXTURES WITH THE EDUCATIONAL CONTEXT

Therefore, CA can be understood as "[...] a set of increasingly subtle methodological instruments in constant improvement, which apply to extremely diverse 'discourses' (contents and continents)" (Bardin, 2016, p. 15), whose objective is to explore the senses and meanings attributed by the subjects participating in qualitative and quantitative studies regarding a theme, problem or phenomenon, based on the rigorous and structured systematization of

> A set of communication analysis techniques aimed at obtaining, through systematic and objective procedures for describing the content of messages, indicators (quantitative or not) that allow the interference of knowledge related to the conditions of production/reception (inferred variables) of these messages (Bardin, 2016, p. 46).

This analysis technique is recognized and widely applied in social, human and educational research by researchers who seek to understand the meanings of speech, transcending the criteria of objectivity of words and, in the face of inference, constructing a broad interpretation and a connection with the theoretical framework (Minayo, 2014), based on the processing of data that aims to identify what is being said about the object of study. Thus, from the production or selection of data originating from the research, information is constituted that can be compared with what already exists, which allows for comparisons to be established and identification of recurrence among a considerable number of data produced (Gil, 2008), whether verbal or non-verbal.

In line with the above, we can state that the CA technique "[...] is intended to classify and categorize any type of content, reducing its characteristics to key elements, so that they are comparable to a series of other elements" (Carlomagno; Rocha, 2016, p. 175), indicating congruent elements for the composition of new knowledge. This constitutive and constructive process occurs, according to Bardin (2016), through the production of inferences, that is, it constitutes an intuitive activity of interpreting the messages present in the data based on their objective systematization.

In this direction, Franco (2008, p. 20) conceives CA as "[...] a research procedure that is situated in a broader outline of communication theory and has the message as its starting point [...]", allowing the researcher, "[...] to make inferences about any of the elements of communication: (i) the characteristics

of the text; (ii) the causes and antecedents of the messages; (iii) and the effects of communication [...]", demonstrating the interplay between the different alternatives for deepening the empirical materiality produced.

The literature shows convergence between different authors (Bogdan; Biklen, 1994; Franco, 2008; Gil, 2008; Minayo, 2014; Oliveira et al., 2003; Triviños, 1987, among others) who have been based on Laurence Bardin to recognize and conceive the concept of CA as a set of procedures and techniques that seeks to interpret, based on systematization and organicity, the data produced through research, recognizing it as essential and adequate for studies of a qualitative nature (André, 2001, 2007, 2013; Cavalcante; Calixto; Pinheiro, 2014; Flick, 2004; Gatti; André, 2011; Gil, 2008; Leite, 2017; Lima, 2018; Paiva; Oliveira; Hillesheim, 2021; Silva; Fossá, 2015; Sousa; Santos, 2020).

The choice of the CA method must be in line with the research design, objectives, problem, theoretical framework, intentions and knowledge that one seeks to construct from the object of study, requiring a logical, coherent and systematized organization of all the phases that will be covered. Flick (2004, p. 17) highlights that "[...] each method is based on a specific understanding of its object [...]", and, in qualitative research, choices are decisive, as they do not depend only on the method but on the conduct of the entire process, as they involve dimensions that are tested and experienced and that are concretized through interpretation and contextualization (Flick, 2004; Franco, 2008; Minayo, 2014; Sampaio et al., 2022).

Based on the definition of the CA technique to be used, the outlines for conducting the data analysis are established. Considering that the analytical process requires organicity and rigor in its execution, this methodological phase is structured in different stages. According to Bardin (2016), CA is composed of three phases: pre-analysis, exploration of the material, and treatment of the results and interpretation. These phases present intersections, and it is up to the researcher to engage in the execution of each phase with rigor so as not to compromise the next phase since there is interdependence between them. That is, it is necessary to respect the order of the phases, and it is not possible to carry out, for example, inferences and interpretation without first carrying out the pre-analysis and exploration of the material. The lack of rigor and observance of the sequence of the phases proposed by Bardin incurs the risk of compromising the analysis and the considerations made.

Following the phases, rigor in their organization and coherence in their implementation will contribute to the validity of the findings, avoiding ambiguities and weaknesses during the process and conferring greater reliability to the research, as shown in Figure 1.

Figure 1 – Representation of the intersection between the stages of Content Analysis
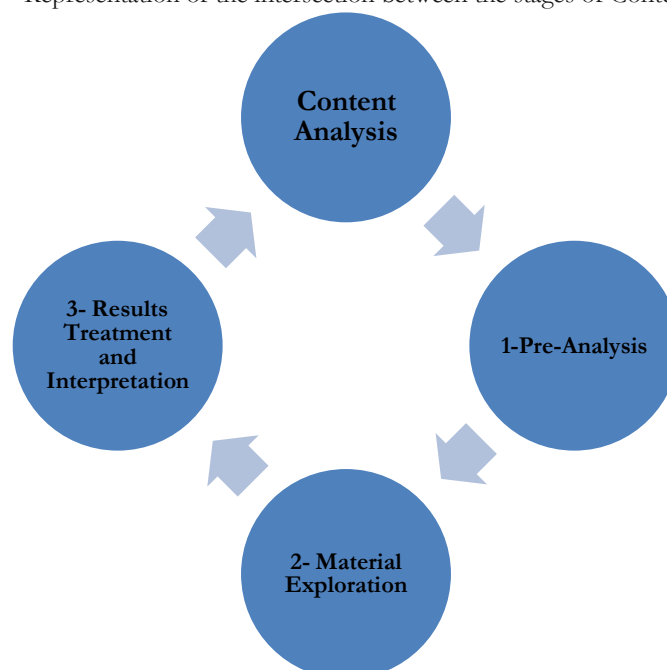
The three phases presented by Bardin (2016) have distinct characteristics and objectives but they intersect and interact as they establish coherence and dependence among themselves. These phases are composed of stages that support the development of each of them and establish the guiding thread of the entire process. Below, each of the investigative phases proposed by Bardin will be presented in more detail.

Pre-analysis is the first phase of CA. It is the moment of organizing the material on which the researcher will systematize preliminary ideas. It is a moment of "intuitions" (Bardin, 2016, p. 125). This initial contact is intended to allow the researcher to differentiate the relevance and pertinence of the materials to be used from those that add little to the research. This stage aims to "[...] make the initial ideas operational and systematize [...]", as highlighted by Bardin (2016, p. 125). For this reason, at this moment, the researcher needs to perform a cursory reading of the available material, selecting the documents that present the greatest contributions. It is also the moment to formulate hypotheses and some objectives to be achieved. Considering the above, it is identified that the pre-analysis phase is composed of four moments, as explained below.

1) Floating reading: a process in which the researcher focuses on getting to know and recognize the material, at which point he or she creates the first impressions about what he or she has found to analyze. By establishing this contact with the material through reading, "[...] allowing oneself to be invaded by impressions and orientations [...]" (Bardin, 2016, p. 126), the researcher broadens his or her view of the material, becoming immersed in it as he or she establishes connections with the hypotheses, the theoretical projection, and the proposed objectives.

2) Selection of documents: based on the initial contact (skimming) with the material, the documents that will make up the corpus of analysis are selected. This process is complex and challenges the researcher to immersing himself in the material, considering those that can "[...] provide information about the problem raised [...]" (Bardin, 2016, p. 126) or, even, taking into account "[...] the demarcated universe (the genre of documents on which the analysis can be carried out)" (Bardin, 2016, p. 126). Thus, it is necessary to select them so that they can constitute relevant material, following four rules (Bardin 2016, p. 126-127) that aim to give greater relevance and assertiveness to the choices. See:

a) rule of exhaustiveness: based on the definition of the field of the corpus in which the researcher will work, he/she must identify all the elements that are part of this corpus and then select all the materials that contain any of these elements (Bardin, 2016). This process requires the researcher to pay attention and take a critical look at all the material, revisiting the sources as many times as necessary, so as not to make the mistake of excluding any of them without relevant arguments that are relevant to the established rigor. Exhaustiveness means going in depth, selecting, choosing the maximum amount of materials that are directly related to the research elements, providing a greater scope in the universe of investigation;

b) rule of representativeness: the rule of representativeness concerns the process of selecting a sample of material that is representative of the initial universe. This sampling should allow the discovery of the characteristics of the elements present in the sample, that is, the reduction of the material must contemplate identical criteria and elements that can be evaluated and considered, often in a generalized way (Bardin, 2016). However, it is important to highlight that, in many research cases, it is not possible to reduce the material, making it more viable to reduce the universe of research and analysis. It is necessary to keep in mind that, when reducing the material to a sample, there may be difficulty in generalizing the considerations, as the understanding of the whole may be weakened. Therefore, it is important to be careful with this practice in educational research since the results obtained with sampling do not always apply to all contexts and spaces. The exercise of representativeness requires the researcher to have broad knowledge and a strong theoretical support, especially when generalizing, a complex but viable practice, as long as it is closely related to the objective of the research;

c) rule of homogeneity: at this stage, it is observed whether the materials are homogeneous and whether they comply with the selection criteria (Bardin, 2016). At this point, the inclusion and exclusion criteria for the material are applied, which undoubtedly need to deal with the same topic, in addition to

being defined according to the research problem and objectives. The homogeneity rule applies more when the aim is to obtain global results or compare results with each other, such as analyzing the application of a certain data production instrument in an educational research (semi-structured interview). In this case, only the materials that will use this instrument to produce data on the same topic are selected; thus, the researcher will have a corpus that will be composed of materials on the same topic and that used the same instrument, which will allow him/her to make comparisons, since the elements are identical; and

d) rule of relevance: when applying this rule, it is observed whether the material is directly related to the theme/object of analysis (Bardin, 2016). Relevance is sometimes identified by reading the material in more detail, attentively and completely. One of the mistakes made at this stage is, for example, analyzing only the titles and abstracts of articles that often have gaps and weaknesses in the information. Transposing and considering the entire material reduces the error of excluding some that present good contributions.

3) Formulation or reformulation of objectives and hypotheses: in this pre-analysis stage, the researcher has the possibility of using some hypotheses that will be confirmed or not with the analytical process. "This is an assumption whose origin is intuition and which remains suspended until it is subjected to the test of reliable data" (Bardin, 2016, p. 128). When formulating hypotheses, the researcher has the possibility of guiding himself and structuring the analysis process to refuting or ratifying them; however, depending on the objectives and the research problem, this action is indispensable, since the researcher's design and choices, in many cases, are able to explore the theme/object of study. According to Bardin (2016), the objective is the explanation of the purpose. It must be clear and acquired by the researcher so that it can guide him/her and keep him/her focused on answering the research problem.

4) Formulation of indicators that will support preparation for material exploration: the analysis material is considered to be a representation of the manifestations. At this stage, the aim is to identify which indicators appear most frequently in these materials, and their frequency will guide the researcher in the next phase, which is material exploration, according to Bardin (2016).

The material exploration phase begins with coding, which, in CA, according to Bardin, refers to the process of transforming raw data, such as texts, images or audios, into meaningful units of analysis for the research. These units of analysis can be words, phrases or text segments that contain information relevant to the study. Coding involves the creation of codes or labels that represent important concepts for the research. These codes are assigned to the data during the coding phase. The coding process can be done in an open way – when the researcher does not have predefined categories and discovers new themes or patterns in the data – or in a closed way – when the researcher uses pre-established categories to verify the presence or frequency of certain concepts (Bardin, 2016).

From the coding, categorization is made, which, for Bardin (2016, p. 147), is "[...] an operation of classifying the constituent elements of a set, by differentiation and, subsequently, by regrouping according to genre (analogy), with previously defined criteria". For Bardin (2016), a category must follow some of the following principles.

- Mutual exclusion: "This condition stipulates that each element cannot exist in more than one division" (Bardin, 2016, p. 150).
- Homogeneity: "The principle of mutual exclusion depends on the homogeneity of the categories. A single classification principle must govern their organization" (Bardin, 2016, p. 150).
- Relevance: "[...] a category is considered pertinent when it is adapted to the chosen analysis material, and when it belongs to the defined theoretical framework" (Bardin, 2016, p. 150).
- Objectivity and fidelity: "The different parts of the same material, to which the same categorical grid is applied, must be coded in the same way, even when subjected to several analyses" (Bardin, 2016, p. 150).

According to Bardin (2016), categories can be a priori or non-a priori. A priori categories are those established before data analysis, defined based on pre-existing theories, concepts or hypotheses that guide

the investigation. This type of category is used when the researcher already has a prior understanding of the topic and wishes to verify whether the data collected confirms or refutes these hypotheses or theoretical concepts. The categories are, therefore, preconceived and guide the coding of data according to an established theoretical framework. Non-a priori categories are those that

> They emerge entirely from the context of the research subjects' responses, which initially requires the researcher to intensively go back and forth between the analyzed material and the underlying theories, in addition to not losing sight of meeting the research objectives. The truth is that there are no magic formulas that can guide the researcher in categorization, and it is not even advisable to establish guiding steps (Campos, 2004, p. 614).

In the last stage of this movement, the researcher must proceed to the processing of the results and the interpretation based, for example, on the inference that, for Bardin (2016, p. 165), needs to "[...] be supported by the constituent elements of the classical communication mechanism: on the one hand, the message (meaning and code) and its support or channel; on the other, the sender and the receiver". The interpretative process can be understood as the moment in which the researcher gives meaning and significance to the manifestations found and establishes the dialogue with the theoretical framework.

In addition, it is understood that, to reach a more complete definition of CA, one can resort to the description of some of its characteristics, as Leite (2017) emphasizes.

- With regard to the description and interpretation, it is possible to understand CA as an alternative to the explanation of what is in the text, through its description, or even its interpretation.
- With regard to the understanding is how much CA strives to promote an understanding of the phenomenon. It is not, as Leite (2017) explains, about criticizing it, per se, but rather about elucidating it.
- With regard to what is implicit and what is explicit, CA reaffirms its origin in positivism, highlighting what is explicit, but it also deals with describing or interpreting what is implicit, bringing to light elements that help to explain or determine a phenomenon, problem or object of study.

The organic nature and rigor present in the CA process contribute to making it a data analysis method that seeks to extract elements that are embedded in verbal or non-verbal expressions. The phases and developments provoked in each of the stages are able to absorb information, organize it, bring it together and present the elements for the next stage, giving the analysis process a structured and systematically outlined path, so that the researcher can guide himself during the process, from the organization of the material to the inferences, analyses and considerations about the research findings.

CONTENT ANALYSIS TECHNIQUES: CHALLENGES AND POSSIBILITIES

Bardin (2016) highlights six CA techniques that are usually used in this methodological approach and are commonly used in educational research, safeguarding the approximations and cohesion between the object of study, problem, objectives and data production instrument.

As previously mentioned, CA is a research method that involves the systematization and interpretation of data based on a systematic and objective analysis of the content of a data set. It can be applied to various types of data, such as interviews, texts, images, videos, among others. CA techniques are specific procedures that analyze collected data, identifying and classifying important elements such as words, expressions, units of meaning, propositions, among others. While the CA method is a general approach that seeks to guide the entire process of analyzing qualitative data, CA techniques are specific procedures used to identify and classify important elements present in the collected data.

The purpose of the CA techniques proposed by Laurence Bardin is to perform a systematic and objective analysis of the content of a set of data, seeking to understand its meaning and identify patterns or trends present in the data. In this way, the CA techniques proposed by Bardin contribute to a deeper

and more rigorous understanding of the data, allowing the elaboration of more precise and well-founded conclusions. The techniques used are: categorical analysis, evaluation analysis, enunciation analysis, propositional discourse analysis, expression analysis and relationship analysis.

The first technique is categorical analysis, the oldest practice used in CA and widely used in the area of education for the emergence of categories of analysis from the materiality that is proposed to be analyzed. It presents a process that is established from the analysis and exploration of the material, composing the thematic categories, that is, identifying the most recurrent themes found in the materials or stated by the subjects participating in the research.

The use of the categorical analysis technique enables the creation of inferences about a given content based on the coding of the content, that is, based on the grouping of similarities, of similar elements (codes), which, at the end of the process, constitute categories. These categories allow us to understand, describe, explain and highlight, based on a set of contributions and approximations, the phenomenon under investigation. Categorical analysis represents a process of discussion and analysis that encompasses a range of information that needs to be organized in a reflective and coherent manner, promoting clear intersections in the search for answers to the proposed objectives. Although it may seem simple, it is a complex process.

According to Bardin (2016), another technique is evaluation analysis or evaluative assertion analysis, which can be described as the measurement of the attitudes of some "[...] speakers regarding the objectives of what is being said. The conception of language on which this analysis is based is called 'representational', that is, the language directly represents and reflects the one who uses it" (Bardin, 2016, p. 203). Thus, inferences are indicated based on the manifestation explicit in the communication. Evaluation analysis seeks to identify the values and judgments present in the analyzed material, such as criticism, praise, value judgments, among others. Although this technique seems, at first glance, easy to apply, Bardin (2016) highlights the fact that it is extremely laborious in the analysis process; therefore, it is recognized that, in a research universe with the participation of many subjects, this technique, despite its potential and possibilities, would become exhaustive.

The technique of enunciation analysis is based on the principle that communication is not a given, but a process. Thus, discourse is not perceived as something manipulable and fragmentable; the aim is to identify the complete units of meaning present in the material analyzed, in this case, the discourse, and categorize them according to their form and content. The discourse analyzed according to this technique is understood at a point in the elaboration process and presents interlocutions. When the analysis of the enunciation of an interview is carried out, it is stripped of hypotheses, that is, "[...] each interview is studied in itself as an organized and singular totality. It is a case study. The dynamics of each production are analyzed and the different indicators adapt to the irreducibility of each speaker" (Bardin, 2016, p. 223).

The fourth technique presented by Bardin (2016) is propositional discourse analysis, which focuses on analyzing the semantic or propositional content of the data, that is, identifying the propositions or central ideas that make up the discourse. This technique seeks to identify and classify the propositions present in the analyzed data to understand the relationships between them and infer the intentions and opinions of the author or participants involved. Propositional analysis can be used to identify thought patterns or to assess the congruence between what is said and what is done. It is a CA technique that focuses on identifying and classifying the propositions or central ideas present in the collected data, allowing for a deeper and more rigorous understanding of the content analyzed.

In turn, expression analysis, another CA technique, considers that there may be a certain parallelism between the discourse and some characteristics of its speaker (Bardin, 2016). This technique focuses on analyzing the form or mode of expression of the data, that is, the linguistic, grammatical, syntactic and stylistic characteristics of the analyzed content. In addition, it seeks to identify and describe the formal and linguistic aspects of the analyzed content, such as the structure of sentences, the use of specific vocabulary, the presence of figures of speech, among other elements. Expression analysis can be used to identify, for example, linguistic tendencies in a given discourse, or to evaluate an author's writing style. This technique is especially useful in areas such as linguistics, communication and literature, but it can also be applied in other areas of knowledge that involve the analysis of textual data, such as sociology,

psychology and education. Expression analysis is a CA technique that focuses on analyzing the formal and linguistic characteristics of the collected data, allowing a deeper and more rigorous understanding of the analyzed content.

Finally, relational analysis seeks to find, in a message, the simultaneous presence of several elements that are directly related to each other. Furthermore, it does not necessarily seek to highlight the number of times a term appears in a specific message, but rather the way in which these elements are organized within it (Bardin, 2016). Within relational analysis, two analytical techniques are identified: i) occurrence analysis, which seeks to extract from the text the relations between elements contained in the message, identifying the simultaneous presence of two or more elements in a message fragment; and ii) structural analysis, whose analytical work is not based on the classification of signs or meanings, but rather on the attempt to discover the significant constants present explicitly. Structural analysis "[...] encompasses a number of techniques that attempt to move from the anatomical level of analysis to a molecular level, and focus their procedures, even at a very elementary level, more on the bonds that unite the components of the discourse, than on the components" (Bardin, 2016, p. 268).

According to Bardin (2016), the versatility and dynamism that make up CA techniques can be noted. Each one, with its specificities, seeks to understand what is communicated, whether verbally or not, through its methodological paths, structuring and systematization, in addition to the evidence that produces or leads to the interpretation of something. The advancement and transposition of what is found, analyzed and interpreted to a new field of understanding, debate and approximation with other perspectives, constitute the evolutionary movement of knowledge production, which becomes possible through the research process and analysis techniques.

CONTRIBUTIONS AND LIMITATIONS OF THE CONTENT ANALYSIS METHOD FOR EDUCATION RESEARCH

The processes of data production and analysis in education research can be considered determining factors for the construction of knowledge in a field marked by the multiplicity of themes, problems and objects of study, a field that has expanded, among other reasons, due to the improvement and expansion of approaches, methodological paths, production instruments and data analysis techniques, as well as the interest of researchers.

The choice of methodological path, especially the data analysis technique, is crucial for the researchers to be able to explore their object of study with greater relevance and coherence, since this technique can contribute to or even compromise the viability of the analyses and considerations regarding the study.

In the educational context, the openness observed in the techniques and approaches used in research has been shown to be favorable to the understanding of educational processes in a more dialogical, reflective way, exploring the different manifestations, understandings and perceptions about the phenomena in their daily lives and surroundings and interacting with them. Given the characteristics commonly observed in investigative processes in the field of education, CA (Bardin, 2016) is identified as a recurrently used method, since it presents the possibility of, exploring the most subjective issues precisely through its techniques, broadening the horizons of research and interpreting reality (André, 2007, 2013; André; Gatti, 2008; Van Zanten, 2004).

As stated by Sampaio et al. (2023, p. 11) when mapping and reflecting on the use of the CA method, "[...] there is a hegemony in different studies, in the use of Bardin, (...) identified in different studies, but naturalized and, to a certain extent, even valued, since certain articles still seek to evaluate the quality of CA based exclusively on Bardin's definitions [...]", corroborating its relevance for the production of knowledge. When reflecting on the implications and perspectives of educational research in contemporary Brazil, Gatti (2001) already highlighted the relevance of qualitative research and CA, emphasizing that this method can contribute significantly to the interpretation of reality.

[...] its use expanded due to the search for alternative methods to experimental models and empirical studies, whose explanatory power over educational phenomena had been called into question, as occurred with the concepts of objectivity and neutrality embedded in these models. The alternatives presented by the so-called qualitative analyses comprise a heterogeneous universe of methods and techniques, ranging from content analysis with all its diversity of proposals, through case studies, participant research, ethnographic and anthropological studies, etc. (Gatti, 2001, p. 73).

Given this, we observed that studies on the relationship between qualitative research and educational research have grown significantly, including the CA method in the discussions, highlighting the historical and epistemological contributions to the knowledge construction processes (Batista; Oliveira; Camargo, 2021; Cavalcante; Calixto; Pinheiro, 2014; Gonçalves, 2016; Leite, 2017; Lima, 2018; Paiva; Oliveira; Hillesheim, 2021; Palú; Petry, 2022; Seramim; Walter, 2017; Silva; Fossá, 2015; Sousa; Santos, 2020; Zanette, 2017). When reflecting on CA as a qualitative methodological perspective in research within the scope of educational research, Silva, Oliveira and Britto (2021) argue that

[...] it is possible to unravel phenomena, which, often in the area of education, seem to have only a school aspect, but if seen from another perspective, they bring us several other meanings from the social, extra-school sphere, which can often help the researcher to deal with a problem situation. In other words, as Content Analysis allows and favors such deepening, through the phenomenon, it is possible to pay attention to other points that lead to its triggering (Silva; Oliveira; Britto, 2021, p. 64).

From this perspective, Box 1 shows some theoretical support from previous studies that have been corroborating to highlight the contributions and limitations of the CA method in educational research.

Box 1 – Contributions and Limitations of Content Analysis

Contributions	Limitations
Oliveira et al. (2003, p. 15): "[...] goes beyond the limits of an analysis only to manifest content. The option of carrying out a thematic analysis, instead of an analysis of manifest content, in which the data would be fully quantifiable, is justified by the desire to understand the full meaning of the discourse, also highlighting its latent contents".	Oliveira et al. (2003, p. 15): "[...] thematic content analysis has been considered subjective and even impressionistic, since from the beginning it relies on an interpretative activity and an 'intuitive coding' of the researcher".
Franco (2008, p. 15): "[...] Content Analysis is based on the assumptions of a critical and dynamic conception of language. Language, understood here, as a real construction of the entire society and as an expression of human existence that, at different historical moments, elaborates and develops social representations in the interactive dynamism that is established between language, thought and action".	Franco (2008, p. 16): "[...] content analysis requires that the findings have theoretical relevance. Purely descriptive information unrelated to other attributes or the characteristics of the issuer is of little value".
Cavalcante, Calixto and Pinheiro (2014, p. 15): "Content analysis [...] emerges as a technique that aims to capture a visible reality, but also an invisible reality, which can manifest itself only 'between the lines' of the text, with various meanings."	Cavalcante, Calixto and Pinheiro (2014, p. 15): "[...] analysis requires a pre-understanding of the being, its manifestations, its interactions with context, and mainly requires a meticulous look from the researcher. To this end, it is important to verify the levels that structure a research question such as knowledge that penetrates tangentially or laterally, concomitant and athematic knowledge and also pre-knowledge that is not singularly determined".
Palmeira, Cordeiro and Prado (2020, p. 19): "As it is a technique that takes into account numerous elements that surround the researched horizons, it is freed, in a certain way, from this 'methodological hardness' [...], capturing with great richness details and circumstances that involve a certain object, outlining, in the reading of the research findings, a more faithful portrait of what the data reveal [...]".	Sampaio and Lycarião (2018, p. 42): "[...] the need to carry out reliability tests in any research with quantitative CA. This is because they are crucial tools to ensure that a research is replicable. Since replicability is a condition for the possibility of reliability, a research without a test and procedure similar to the one described here fails to guarantee such conditions".
Sousa and Santos (2020, p. 1440): "[...] set of methodological instruments, in constant improvement, which aims to analyze	Sousa and Santos (2020, p. 1413-1414): "It requires rigor and systematic rules that need to be learned and exercised to be able to extract the maximum possible

different content contributions, whether verbal or non-verbal, through a systematization of methods used in data analysis".	abstractions from a fact, phenomenon or a response given by a research subject."
Paiva, Oliveira and Hillesheim (2021, p. 31): "The difference in Content Analysis is the separation of discourse into parts through systematic and well-defined procedures in the search for understanding of messages, that is, of everything that is said and also what is not said, using logical definitions to achieve understanding and/or discoveries about the object studied."	Paiva, Oliveira and Hillesheim (2021, p. 31): "This method oscillates between the path of objectivity and subjectivity, seeking to interpret through scientific rigor what is hidden behind the messages."
Palú and Petry (2022, p. 166): "[...] an important methodological tool, offering subsidies that enable the rigor that the activity requires, since these are methodological strategies suitable for field studies, although they constitute a complex methodological procedure in their materialization".	Palú and Petry (2022, p. 168): "[...] somewhat subjective, since it is related to the researcher's perceptions [...]. Another limitation concerns research that favors the frequency criterion, since this does not always express the importance of a theme [...], as well as the theoretical domain that implies in the development of the other phases proposed by CA".

Source: Created by the authors (2023).

Box 1 shows some data that corroborate and indicate the contributions and limitations of using CA for data analysis in qualitative research. The recognition of rigor in the systematic and analytical process constitutes an argument that advocates in favor of the method that, precisely because of its capacity for interpretation, is capable of revealing scenarios and presenting elements that are not identified by interpretative practice alone.

Although it presents limitations and weaknesses, the interpretation of a frequent manifestation can contribute to the construction of a body of representations, enriching the research and enabling the apprehension of complete meanings for the object of study. However, the rigor, commitment and correct application of the steps of this method tend to reduce these weaknesses (André, 2001, 2007, 2013; Cavalcante; Calixto; Pinheiro, 2014; Oliveira et al., 2003; Sampaio et al., 2022; Sampaio; Lycarião, 2017; Seramim; Walter, 2017; Van Zanten, 2004).

Although CA is a widely used method in qualitative research in education, from Bardin's perspective there are some limitations associated with its use. The main limitations are presented below.

- Risk of reductionism: from Bardin's perspective, CA requires that data be categorized and reduced to a limited number of categories. This can lead to oversimplification of data and a loss of nuances and complexities present in the data.
- Over-excessive subjectivity when constructing categories: The construction of categories of analysis in CA involves subjectivity, reflecting the choices and interpretations of the researcher. Although subjectivity is an inherent and enriching characteristic of qualitative research, excessive subjectivity can be a limitation, as it can lead to varied and inconsistent results among different researchers. To mitigate this impact, it is crucial that researchers adopt a rigorous and transparent approach, documenting in detail the process of constructing categories and the justifications for their choices. This ensures that other researchers can understand the decisions made and assess the consistency and validity of the results obtained.
- Lack of attention to context: from Bardin's perspective, CA can neglect the context in which the data were produced. This can lead to a limited understanding of the meanings present in the data and to erroneous conclusions.
- Difficulty in dealing with non-textual data: CA is a method primarily focused on textual data, which can limit its usefulness in research involving other forms of communication, such as images, audio and video.
- Limitations in generalizing results: from Bardin's perspective, CA is a technique focused on the analysis of specific data and does not allow for the generalization of results to a wider population. It is important that the researcher is aware of these limitations when using CA in their research.

- However, from Bardin's perspective, CA offers several important contributions to qualitative research in education. Some of the main contributions are presented below.
- It allows for systematic and rigorous analysis of data: from Bardin's perspective, CA offers a set of procedures and techniques that allow for systematic and rigorous analysis of data collected in qualitative research in education. This enables the researcher to explore the data in a more in-depth and structured way, identifying relevant patterns, categories and themes.
- Allows for a deeper understanding of the phenomena studied: from Bardin's perspective, CA allows the researcher to explore the meanings and interpretations present in the data collected, which can lead to a deeper and more complex understanding of the phenomena under study. This can contribute to the production of more robust and theoretically based knowledge about the field of education.
- It offers a flexible and adaptable approach: from Bardin's perspective, CA is a flexible and adaptable approach that can be applied to different types of data and research contexts. This means that researchers can use CA in qualitative research in education of different natures and objectives, adapting it to the specific needs of their research.
- It allows the identification of gaps in the literature: from Bardin's perspective, CA allows researchers to identify gaps in the literature and areas that can be further explored. This can contribute to the advancement of research in education and the production of more up-to-date and relevant knowledge.
- It allows data triangulation: from Bardin's perspective, CA can be used in conjunction with other data collection and analysis techniques, such as participant observation, interviews and focus groups. This allows researchers to triangulate data and obtain a more complete and multifaceted understanding of the phenomena studied.

Another highlighted feature of the CA-based method is that it elucidates data that are generally latent in the messages provided by the speakers. Interpreting the perceptions of social actors is a complex activity that can be approached with some success through this methodological technique and the openings it provides, constructing a back and forth movement between subject, object and theory.

Therefore, the relevance of the CA method to the research problem and the creativity of the researcher in producing the data reside in the possibility of establishing dialogues that support the theoretical arguments and the evidenced findings, which, in educational research, is crucial for understanding the themes, problems and phenomena researched, expanding the conceptual and comprehensive repertoire about them. These and other issues present developments in the investigative processes that require views from a critical-reflexive rationality, seeking to understand the meanings and the constitutive process of the phenomenon or problem, as well as the factors that interfere in it. To this end, qualitative data are a solid basis for supporting this endeavor.

In view of the above and recognizing the contributions developed, it is pertinent to consider, as highlighted by Sampaio et al. (2023), the importance of a critical look at the use of CA, to qualify it in the reflective process of the productions, contextualizing it and overcoming the repetition of the step-by-step of the method, commonly identified in the analyzed productions, as highlighted by the authors.

Despite the discussions about the contributions and limits of the use of CA, its effectiveness for the production of new knowledge is recognized, as it is inserted in the understanding of reality through techniques that explore the intricacies often neglected or even not perceived by the researcher in more objective analyses. However, the use of this method in educational research needs to be articulated as a path that is pursued, seeking to build other possibilities to be followed through rigor and scientific commitment, explaining it and contextualizing it with the environment in which the materialities are produced and not just using it as a description necessary to justify the chosen paths.

In this sense, Sampaio et al. (2022), when evaluating the quality of the application of CA in research developed in Brazil, highlight the low overall quality in its application, indicating, however, that there is care in the presentation of the categories and themes that guide the analyses, referenced and based on the different versions of Bardin's manual. Therefore, based on the contributions and limits highlighted above, there is the need to promote, qualify and expand the use of CA in academic productions in the

Brazilian context, promoting a theoretical and practical deepening of its applicability, and not just the discursive reproduction of the methodological approach.

Therefore, the challenge lies in bringing together the theoretical contributions of CA with its applicability in the research process and, in particular, in the analysis and discussion of the data produced, promoting, with greater resonance and rigor, all the stages proposed by Bardin, and not just describing and systematizing them in the body of the production carried out. By overcoming the superficiality of the presentation and demonstrating its presence in the stages of the analytical process, its use is enhanced, crediting reliability and recognition to the results presented. This perception is similar to the contributions of Seramim and Walter (2017), when they highlight the importance of not disregarding the stages of the application of this method and the need for articulation with the context of analysis, making clear the developments in the presentation of the discussions of the data, and not just systematizing the process.

The intersection of the stages of application of the method with the descriptive, analytical and interpretative process of the data gives the construction of knowledge greater reliability and academic maturity to the researcher, who is able to coherently present the paths taken and their interlocutions with the reality researched, constituting an alternative to explore the limits of the application of CA in subsidies and contributions to the understanding of the object of study.

Pursuing these intricacies is a commitment of the researcher who seeks to understand and contribute to pointing out new paths in the production of knowledge. Among challenges and possibilities, the limits and horizons of CA have proven to be structured, didactic and methodologically rigorous and pertinent, in addition to presenting an applicable potential, since they are based on theoretical and epistemological bases that give them reliability.

FINAL CONSIDERATIONS

Considering the objective and the problem of the research, this article describes, in a contextualized manner, the understandings about qualitative research and analysis of its data, as well as the CA method and technique, reflecting on its contributions and limitations for educational research.

Regarding qualitative research and from its historical contextualization, it derives, to a large extent, from the efforts of anthropology to understand how societies are organized and how relationships between individuals are established. It is evident that qualitative data are sources of a multiplicity of elements that allow us to understand the senses and meanings present in the conceptions and perceptions of the subjects in the theme, object or problem of research.

Both the qualitative approach of research and the production and analysis of its data, as well as the instruments, methods and techniques employed, represent an advance in investigative paths in the educational context. This is because these approaches transcend experimental practices and objectivity, paving the way for perspectives that embrace different ways of contemplating and establishing relationships with social issues that influence the way in which subjects identify or behave in the face of the phenomenon under study.

Analyzing the CA method based on Bardin (2016), we observed the existence of dialogue between the three stages of this procedure. Given the breadth of the organizational, systematic and methodological process of this technique, the intention was to highlight the phases of the CA. It is worth noting that the pre-analysis, in addition to the interaction with the identified corpus, contributes to the composition of the materiality in a way that is committed to the next stage, which consists of exploring the material. In this second stage, the categories to be analyzed in the final stage, referred to as data interpretation, emerge. The constitutive phases of CA are decisive and complex and require the correct execution and exploration of the material, enhancing the analytical process and the construction of knowledge.

In the presentation of the six CA techniques, different possibilities for analyzing qualitative data are observed. It is highlighted and recognized, based on the characteristics and outlines presented by Bardin (2016), that categorical analysis is the technique that most closely matches the context of educational research. With the analysis of the different techniques, the necessary relevance in outlining the research is noted, linking the methodological choices to the object, theme, problem or phenomenon of study, as well as to the established objective and the theoretical framework used.

When observing the relationships in the methodological construction and the rigorous use of the CA phases, the contributions of this analytical technique spread. This occurs mainly because it favors the review, reconstruction, expansion and systematization of data that start from the experiences of the subjects, the senses and the meanings attributed. These data can only be understood by analyzing in detail the different manifestations and expressions of the subjects in the object of study, contextualizing them with the space and time in which they are inserted.

No entanto, a abordagem pautada na AC apresenta limitações para a pesquisa qualitativa em educação. Dentre elas, pode-se incluir o risco de reducionismo, o sobre-exceder na subjetividade diante da construção das categorias, a dificuldade em lidar com dados não textuais e as limitações na generalização dos resultados. É importante que o pesquisador esteja ciente dessas limitações ao utilizar a AC em suas pesquisas, de modo a não tornar a sua pesquisa desqualificada.

However, the approach based on CA has limitations for qualitative research in education. These include the risk of reductionism, over-excessive subjectivity when constructing categories, difficulty in dealing with non-textual data, and limitations in generalizing results. It is important that researchers are aware of these limitations when using CA in their research, so as not to disqualify their research. The interpretative and discursive movement of the contributions and limitations of CA is fruitful given the spread of its use and the scientific rigor needed to qualify the production of knowledge, which requires a theoretical basis and constant revisiting and problematizing of its use. In this sense, based on the reflections on screen, the use of Content Analysis should compose academic productions in a contextualized, integrative, and explanatory way during the different stages of its construction, and not just as a detailed description and systematization of its method. Thus, it is believed that confronting the observed limits can be transformed into contributions, since, as perceived, some of the limits are imposed by the researcher's difficulty in navigating the intricacies and mastering their application.

Therefore, it is necessary that future studies also contemplate discussions about how CA is presented, incorporated and contextualized in the productions, seeking to understand the implications and difficulties encountered by researchers and how these influence the discussions of the data produced to the point of being characterized as limitations in its use. The aim is to contribute so that new research embraces the possibility of establishing connections and approximations in a critical-reflexive way throughout the analytical and data production process, contributing to the effectiveness, reliability and construction of results in a meaningful way and to the understanding of the object of study from the perspective of qualitative research, whose relevance lies in discovering senses and meanings around the reality studied.

Finally, since there is no intention to exhaust the debate on this topic, it is considered that the theoretical and reflective contributions presented function as epistemological and methodological openings that contribute to researchers being able to focus on CA to explore research data. In addition, the importance of carrying out new research and detailed and contextualized qualifications of the different techniques that are part of the CA method and their contributions to the educational context and the development of research processes and the practice of science is highlighted.

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