

CONTENT ANALYSIS IN PEDAGOGICAL RESEARCH IN PHYSICAL EDUCATION: A STUDY ON SUPERVISED CURRICULAR PRACTICUM

*ANÁLISE DE CONTEÚDO NA INVESTIGAÇÃO PEDAGÓGICA EM EDUCAÇÃO
FÍSICA: ESTUDO SOBRE ESTÁGIO CURRICULAR SUPERVISIONADO*

*ANÁLISIS DE CONTENIDO EN INVESTIGACIÓN PEDAGÓGICA EN EDUCACIÓN
FÍSICA: ESTUDIO SOBRE LA PRÁCTICA CURRICULAR CURRICULAR
SUPERVISADA*

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Keywords:
Internship.
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Abstract: This article is a step-by-step description of a study on teacher training in the context of curricular supervised internship in Physical Education. Using Bardin's (1979) content analysis procedures – pre-analysis, exploration of material, result processing, inference, and interpretation – it describes in detail the pathway adopted by researchers in the process of understanding the dialogue between school, assistant teacher, and student

Palavras chave:
Estágios.
Pesquisa qualitativa.
Ensino.
Docentes.

Resumo: O objetivo do presente estudo é evidenciar o passo a passo de uma pesquisa sobre formação de professores, no contexto do estágio curricular supervisionado em Educação Física, através de procedimentos de análise de conteúdo. Considerando as fases da análise de conteúdo, orientadas por Bardin (1979) – pré-análise, exploração do material, tratamento dos resultados, inferência e interpretação –, descreve-se, detalhadamente, o caminho adotado pelos pesquisadores no processo de compreensão da interlocução entre escola, professor-colaborador e estagiário.

Palabras clave:
Prácticas
curriculares.
Investigación
cualitativa.
Enseñanza.
Docentes.

Resumen: El objetivo de este estudio es mostrar el paso a paso de una investigación sobre formación de docentes en el contexto de la práctica curricular supervisada en Educación Física, a través de procedimientos de análisis de contenido. Considerando las etapas del análisis de contenido, orientadas por Bardin (1979) –a saber, preanálisis, exploración del material, procesamiento de los resultados, inferencia e interpretación– se describe en detalle el camino adoptado por los investigadores en el proceso de comprensión del diálogo entre escuela, profesor colaborador y estudiante en práctica.

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1 INTRODUCTION

One of the challenges posed to qualitative research is to ascribe meaning to characteristics that surround a social phenomenon and which consist of a set of interpretive practices that render the world visible (DENZIN, LINCOLN, 2011). Although quantitative studies are prevalent in the area of Physical Education, research with a qualitative approach has been conducted in order to better understand that field of knowledge, with regard to both data collection processes (QUEIRÓS; LACERDA, 2013) and research methods (CASTRO; MORGAM; MESQUITA, 2013; BATISTA, ALVES, 2013), characterizing the context of that academic and professional field, interlocutors involved in the action, and fields of practice.

In that process of signifying information, the analysis of data from qualitative studies plays a key role because, regardless of the characteristics of the content explored, the way the research material is interpreted determines the direction of the results (FLICK, 2014). Nevertheless, investigations under that approach allow researchers to go deeper in discussions by interpreting and analyzing the data collected.

With proliferation and use of new technological resources, the field of qualitative analysis is in constant evolution through improvement of some methods or the emergence of others. The new trends include visual and audio data analysis (JONES *et al.*, 2013; MAEDER, 2014; KNOBLAUCH; TUMA; SCHNETTLER, 2014), media analysis (HODGETTS, CHAMBERLAIN, 2014) and virtual data (GRBICH, 2013), which allow us to detail the information of the research context. However, the use of traditional techniques is still the main focus for interpreting information from social phenomena (FLICK, 2014).

One aspect to be pointed out is that content analysis continues to be one of the most common techniques in qualitative research. According to Shreier (2012) and Queirós and Grace (2013), content analysis appeared in the first half of the 20th century in the United States, in order to investigate media content from a quantitative perspective. It was introduced in the world of qualitative research in the 1960s, in order to find a deep meaning for written messages. It is considered a set of techniques to describe and interpret the content of the words or even to find out what's between the lines of a text (ROCK; DEUSDARÁ, 2005).

Laurence Bardin has been one of the core names in spreading content analysis. The author used the technique in the area of mass communication, in social psychosociological research, and her book *L'analyse de contenu* became a reference in the field. According to Bardin (1979), content analysis has two major functions: to explore content and discover new elements, and to encourage the emergence of hypotheses that serve as guidelines for research, for returning to the field, that is, to show what we have with all due rigor demanded by the science. The analysis can be characterized by inductive and deductive approaches (QUEIRÓS, GRAÇA, 2013).

This technique is widespread in the academic environment, with a significant number of books and articles that portray its stages and how it can be developed. However, few studies on teacher training in Brazilian reality are thoroughly developed through content analysis, especially in terms of selection of recording and context units as well as categorization. This study aims at showing a step-by-step description of a study on teacher training in the context of supervised curricular practicum in Physical Education, using content analysis.

2 THE DEVELOPMENT OF CONTENT ANALYSIS

Qualitative data are very strong and therefore need a period for condensation, presentation, preparation and verification. Content analysis focuses on verbal or non-verbal communication, i. e., letters, newspapers, books, autobiographical accounts, recordings, interviews, diaries, photos, videos and other media. Those are its data sources and express social representations as mental views built under – historical, economic and socio-cultural – contextual conditions in which senders are involved.

Data arrive at the investigator in a raw state and need to be organized, transcribed and transformed into text, so their messages can be decoded (MORAES, 1999):

The great secret of qualitative research is to discover the meaning given to the words, as most analyses and data are in the form of words. They will be organized and regrouped, and will allow the researcher to check and confront them in order to build models (MILES; HUBERMAN, 2007, p. 21, our translation).

Then the process of prudent verification and interpretation begins, aiming at understanding the discourse that was spread, a participant's motive to use a certain word or phrase, the meaning ascribed (ROCHA; DEUSDARÁ, 2005). Content analysis techniques that allow such "signifying" of the data include Qualitative Content Analysis (SCHREIER, 2012), Hierarchical Content Analysis (SPARKES; SMITH, 2014), and Content Analysis (Bardin, 1979). Despite similarities between the distinct techniques, one of them has to be chosen while respecting its particularities, in order to be consistent in data analysis.

Even before starting the analytical process, the researcher must establish some criteria that will influence the procedures adopted for data analysis. The definition of the research problem and the choice of theoretical framework that supports the research (whether or not it is declared) define the lens through which the researcher will interpret the materials collected and, moreover, might determine how the data will be analyzed (SCHREIER, 2012). In deductive analysis, the analytical process is conducted on a specific focus by means of categories determined in advance. This form of analysis shows a more detailed approach taken by the investigator about particular aspects of the data (QUEIRÓS, GRAÇA, 2013). Inductive or a posteriori analysis "[...] is used when we do not have previous theories about the phenomena to be studied or when we intend to explore it without predefined analytical theories or categories" (QUEIRÓS; GRAÇA, 2013, p. 123-124).

According to Bardin (1979), content analysis should be developed continuously and progressively in three stages: pre-analysis; material exploration; treatment, inference and interpretation of results. Concerned with the research and data analysis methods, several authors (CASTRO; ABS; SARRIERA, 2011; MOZZATO; GRZYBOVSKI, 2011; QUEIRÓS; GRAÇA, 2013) also used Bardin's classification of stages to better specify the whole process of analysis.

Pre-analysis aims at organizing and systematizing the materials available for research. It is where we select documents, formulate hypotheses and develop indicators that will enable us to discuss their results (WANLIN, 2007). In this stage we carry out the so-called "floating reading", which allows us to know the document, take notes and obtain some impressions. After that reading, the document is carefully reread and we look for indications that may have been overlooked in the first reading and propose connections with the research's hypotheses and objectives.

The next step is the *editing* process, i. e., delimitating excerpts and comments that may illustrate what is to be discussed, taking care in order not to de-contextualize them, that is, not to take them out of the context in which they were mentioned. This stage is known for its completeness, because the material is handled many times in order to extract as much information as possible about the research problem. Information should be collected in the same way: if it uses interviews, all of them must be of the same type and follow the same protocol, although each participant might change his or her direction. After those processes, the themes of the analysis – the so-called research *corpus* – begin to appear (BARDIN, 1979).

During **exploration of the material**, the aim is to understand the meaning ascribed by those involved in the study to the research corpus. It includes counting repeated ideas and listing situations that appear more than once or even those that are completely absent (WANLIN, 2007). This stage includes two major classifications of content analysis: *recording units* and *context units*. According to Queirós and Graça (2013), there is still the *enumeration unit*.

Recording units are words, sentences or themes repeated throughout the text and found in the different documents analyzed, which allow us to trace participants' profiles and know convergences and divergences on a given point. Berelson (1984) and Queirós and Graça (2013) explain that recording units can be simple or compound sentences or even the joining of some ideas that may allude to what is investigated.

Context units show where recording units' events occur. For instance, Bardin (1979, p. 107) presents the analysis of political messages in which "words like freedom, order, progress, democracy and society need context to be understood in their true meaning". In an association with the area of teacher training, recording units can be words like school routines, students' behaviors, teachers' roles; the context unit is the school, that is, the place that enables the occurrence of certain events. Therefore, the *context unit* is "[...] the widest text segment that includes and frames the recording unit and allows its understanding" (QUEIRÓS, GRAÇA, 2013, p. 130).

Enumeration units contain allow us to quantify recording units, i. e., the frequency of occurrence.

The last stage comprises **treatment, inference and interpretation of results**. It is considered the key to the qualitative research process for contemplating categories of analysis. Those categories bring together the largest possible pieces of information from different sources (observation, interview and questionnaire) and are intended to relate and organize the facts in what Bardin (1979) calls categorization.

Categorization is an operation to classify the components of a set by differentiation and then by regrouping according to genre (analogy) under pre-defined criteria. The categories are rubrics or classes, which bring together a group of elements (recording units, in the case of content analysis) under a generic title. That grouping is conducted because of the common characters of those elements. [...] Categorization is a structuralist process and involves two stages:

- Inventory: isolating the elements.
- Classification: dividing the elements, and therefore seeking or imposing a certain organization to messages. (BARDIN, 1979, p. 117-118)

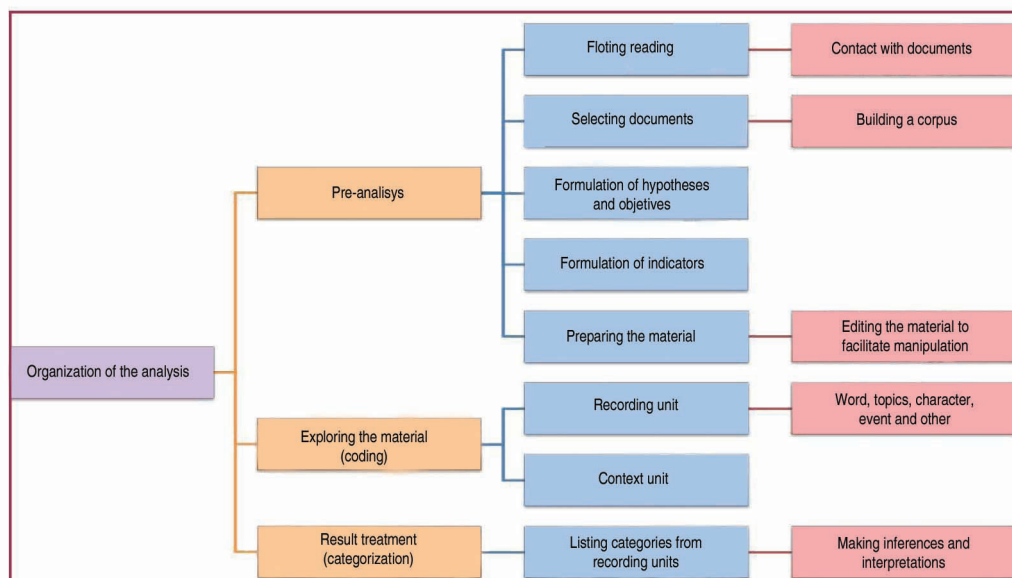
The categories refer to the investigator's expectations, the research's objectives, guiding questions, characteristics of the message, objectivity and productivity. By compiling authors

interested in that subject, Queirós and Graça (2013) selected some of the features that categories must accommodate: relevance and adequacy; completeness or inclusion; homogeneity; mutual inclusion; objectivity. Researchers are therefore allowed to draw conclusions for the discussion (MORAES, 1999) and shall interpret, reflect on and criticize the information acquired beyond their manifest content, but considering what is latent.

Computer resources have been used in the successive actions performed on content analysis, combining functional facilities to the flexibility of the investigative process. Among the software available, Nvivo, QDAMniner, Hyperbase, Alceste, Atlas ti, AQUAD and MAXQDA are often used. Different programs offer researchers conditions for better coping with the scale of the data, particularly in organizing, editing and using statistical tools, thus ensuring time optimization. This allows researchers to dedicate themselves more calmly to interpreting the intentions of the words, the way they were uttered, intonations used, and body gestures propagated (SCELLES, 1997).

The route laid down by Bardin (1979) for content analysis can be seen in Figure 1, which objectively shows the chronological sequence.

Figure 1 – Content Analysis Stages



Source: Benites (2013, p. 91).

In Brazil, authors from the field of qualitative research in teacher training, such as Ludke and André (1986), stress the importance of finding *recording* and *context units* to ensure the crucial stage of categorization. This is the time when theory faces the empirical process, what is regular is detected and there is reflection on what the data respond to or not in terms of the research aims. According to the authors, data should be treated with care and attention and should be broken down to compose the categories that lead to what is of paramount importance. When possibilities for interacting with the material collected are exhausted, we arrive at the end of content analysis. This is a demanding technique that requires maturity from researchers.

The concern in describing the routes used in data analysis intends to ensure the veracity of the research and support researchers in advocating their ideas (SCELLES, 1997). Experts in qualitative research (MILES; HUBERMAN, 2007, DENZIN; LINCOLN, 2011, FLICK, 2014) point

out that, in addition to a detailed process and comprehensive analysis, triangulation of data, peer review and confirmation of categorization by experts are essential to achieve validity and reliability of the analytical process, meeting all the requirements of the investigative process.

After all stages are finished, the hard work of discussing the results begins, which somehow had already been gradually built since data processing. However, at that time, the proposed delimitation includes exemplifying the stages of content analysis in a specific research.

The next topic is related to the development of content analysis in qualitative research of the social constructivist type, which addressed supervised curricular practicum in training of Physical Education teachers. Notes are made on research aims and procedures used that are very important for data analysis.

3 TEACHER-COLLABORATOR IN SUPERVISED CURRICULAR PRACTICUM IN PHYSICAL EDUCATION: PROFILE, ROLE AND POTENTIALS

Benites (2012) focused on understanding how a teacher-collaborator (school teacher who receives practicum students in an official capacity) becomes an educator during practicum. The aims were: (a) to characterize the space of supervised curricular practicum; (B) to characterize the work of teacher-collaborators; (C) to point out which knowledges and practices emerge from teacher-collaborators in the context of practicum.

Participants were five Physical Education teachers-collaborators from five different schools in the city of Rio Claro who had been officially receiving practicum students for five years and nine students from the Physical Education School of Paulista State University at Rio Claro – UNESP/RC. The techniques used for data collection were: document source (a community outreach course and material produced by UNESP/RC on practicum), systematic observation (field recording totaling 170 hours), and semi-structured interviews. At all stages we requested participants' agreement as a free and informed consent form. The study was approved by the institution's Ethics Committee for Research with Human Beings. The analysis was made through content analysis indications.

Table 1 - Distribution of teachers-collaborators and practicum students by school investigated

School	Teacher-collaborator	Practicum students
1	1	A and B
2	2	C
3	3	D and E
4	4	F, G and H
5	5	J

Source: Benites (2012, p.67).

Content analysis began with *pre-analysis* of data, during which the material was organized. The first documents organized came from the document source. They included practicum logbooks, university regulations for practicum, data from an outreach extension course for teachers-collaborators with the Rio Claro Municipal Department of Education, and Data from a meeting with teachers-collaborators held at the university.

The documents were read and organized by topics that answered the research aims. The first reading allowed us to systematize the documents so as to point out evidence that showed the context in which the practicum occurred and the perspective of the teacher-collaborator, responding primarily to the first two research aims.

Fieldwork data had to undergo a distinct organization process because they included images or audio, so they had to be transcribed. Field notes were typed and individual interviews were transcribed. Those documents returned to research subjects for validation and consent (NEGRINE, 2004).

The videos went through an image editing process influenced by the researcher's view, which favored scenes that could be analyzed regarding specific events such as the conflict between students, teacher's help, practicum students' communication, activity exchange, the relationship between students and practicum students, the relationship between teacher-collaborators and practicum students, among others.

Each school had a minimum of eight and maximum cuts from 14 scenes recorded. Based on those scenes, a script was written for each school to analyze and discuss the images. However, some items were present in more than one school unit, as shown in Table 1. One hypothesis is that some schools work with similar target audiences in terms of educational level or have similar challenges. Information is presented according to the proximity of the items and does not contradict the order of appearance in their respective scripts.

Table 2 – Analysis of the study's images

SCHOOL 1	SCHOOL 2	SCHOOL 3	SCHOOL 4	SCHOOL 5
Control of time and students in space	Command of activities by practicum students	Control of time and students in space	Command of activities by practicum students	Practicum students' posture
Students' attention	Motivation	Students' attention	Concepts worked	Motivation
Students' participation in the activity	Communication of activities developed	Communication of activities developed	Communication of activities developed	Student's participation in the activity
Teachers' help to practicum students	Teachers' help to practicum students	Teachers' help to practicum students	Understanding of the rules	Teachers' help to practicum students
Place for lessons	Difference between classes	Place for lessons	Difference between classes	Teaching-learning
Safety criteria	Dynamic in class: participation and competition	Problem-solving	Problem-solving	Command voice
Control of activity	Organization of Activities		Control of activity	

Source: Benites (2012, p. 74)

This was the first organization of video material. It allowed us to get to the script and then return to the field in order to conduct the interviews on the video content with both practicum students and teachers-collaborators. Interviews were transcribed in order to build documents for analysis.

This procedure is justified by Negrine (2004) to validate statements in interviews. The approach has been adopted to ensure more methodological rigor in qualitative studies.

Therefore, when advising the work we stress both the importance of pre-analyzing data coming from different sources and organizing them for presentation, as well as perceiving their relationship with research aims.

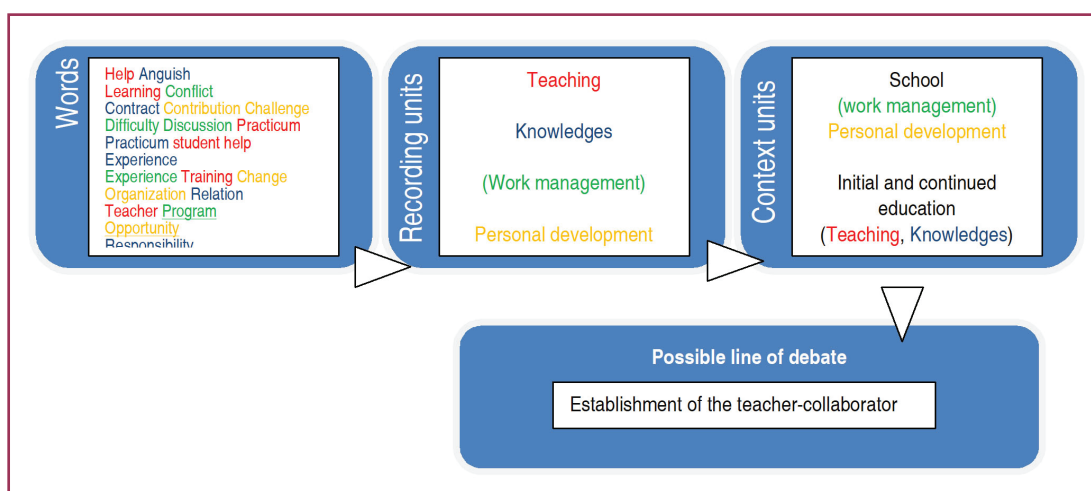
Then we went to the stage of *exploration of the material (coding)*. The second reading of documentary sources started, allowing the selection of excerpts and edition that the researcher considered appropriate to the research context. This is one of the most sensitive processes because researchers must stand firm in their objectives to answer the research aims, avoiding being seduced by the data.

Because the amount of data – which at this point were already in text format – we used QDAMiner software to assist in this stage of analysis. That software is considered user-friendly and its design is seen as simple, in addition to its low cost (MORO; SANCHEZ-CRIADO, 2005). When all documents had been allocated in the software, we began the process of reading and delimitating excerpts. Each material underwent at least four readings, thus constituting a corpus.

The use of software in the process of data analysis does not eliminate the need for the researcher's careful eye in the process. The software it helps by enabling dynamic organization of data and repeated visits to delimitations, choices and categorization. It is not bound to any type of data analysis, while providing resources for different approaches. Therefore, researchers have to be aware of the analysis they intend to conduct in order to make better use of the data. Studies in the area of Physical Education (FARIAS, 2010; ROCHA, 2012; MOLETTA, 2013) that used software for data analysis and investigate teaching and initial training in Physical Education have published significant data for knowledge production in the area.

At this point in the study, it was possible to see topics that stood out in the message; repeated ideas; frequency of certain words. Then the so-called recording units (those permeating excerpts and/or words that are interconnected) and context units (those covering related recording units) were shown, thus allowing us to think of engendering categories (Figure 2).

Figure 2 – Recording and frequency of words for the process of content analysis

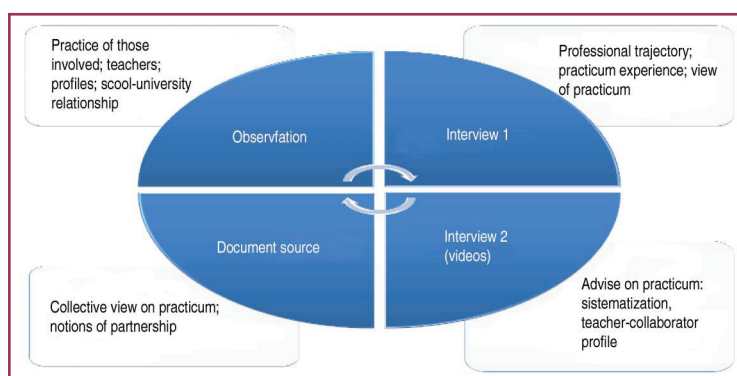


Source: Fonte: Benites, Cyrino and Benites (2014, p. 1796)

Although many recording units were found, context units ended up being the same and providing different connotations to the work. For example: *school* (a context unit) was sometimes mentioned as a place for students' education and sometimes as a training space for future teachers.

The second stage of content analysis allowed us to identify the contribution of each material and the perspective they showed. The observation brought some information about the practice environment, teachers' profiles, and activities developed. The document source focused on the view about the practicum. Video interviews covered some of the practicum and conflicts during class. Individual interviews covered professional trajectory and practicum experiences (Figure 3).

Figure 3 – Sources of information for the study



Source: Benites (2012, p. 78)

Figure 4 – Relation between information and objectives

-Characteristics of space -situation of classes, problems, challenges and overcoming -Objective A	Objective B -Organization of the discipline of PE -Practicum experience -Teacher-collaborator's role -Recognition or not of educators' role	-Practice of those involved -View on practicum -Practicum advising Objective C
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Source: Benites (2012, p. 79)

Finally, we come to the third stage of content analysis: *result treatment* (categorization). Here the first step was to analyze how information compared to the objectives of the work and only then start the aggregating process (Figure 4).

The process of treatment of results, inferences and interpretations at this point of the study allowed building categories and subcategories for each of the materials. We chose to use the data from the institution's documents to corroborate one of the chapters of the study, called "Context", resulting in Table 3.

Table 3 – Categories and subcategories

Practicum students' videos	Teacher-collaborators' videos	Teacher-collaborators' interview	Teacher-collaborators' meeting
1) Classes 1.1- Characteristics of the class 1.2- Communication 1.3- Problems 1.4- Overcoming	1) Classes 1.1- Students 1.2- Problems 1.3- Supervision 1.4- Strategies	1) Profession 1.1- Choice 1.2- Influences	1) Group's Goal 1.1- For the supervisor 1.2- For the collaborator
2) Feedback 2.1- By video 2.2- By Teacher-Collaborator	2) Feedback 2.1- By video 2.2- By Teacher-Collaborator	2) Practicum in initial training 2.1- View of practicum (1) 2.2- Development 2.3 Relationship with the university 2.4- Relations with the labor market	2) View of practicum 2.1- For supervisors 2.2- For collaborators
3) Reflections 3.1- Change in view 3.2- Teacher-Collaborator role 3.3- Teacher-collaborator relations	3) Practicum experience 3.1 For the practicum student 3.2- Perception of the moment 3.3- Possibilities	3.3- 3) Early career 3.1- Difficulties 3.2 Overcoming	3) Possibility 3.1- Partnership
4) Practicum Experience 4.1- Importance 4.2- The process 4.3- Discoveries		4) Being teacher-collaborator 4.1- Since when has received practicum students 4.2- View of practicum 4.3- How he or she advises 4.4- Role	4) Practicum 4.1- Public Policy
		5) Practicum students 5.1- Profile	5) Image 5.2- Relationship 5.1- From school 5.2- From Teacher
		6) University 6.1- Relationship	
		7) School 7.1- The practicum process 7.2- Information Space	

Source: Benites (2012, p. 81)

In order to unite all items evidenced by these categories we reached three main lines that led the presentation and discussion of the results (Table 3). The three axes tend to branch into sub-items inside, due to the scope of the phenomenon studied: (1) the universe of the practicum; (2) the constitution of the teacher-collaborator; (3) advice during practicum.

Table 4 – Lines that demarcate the study results

Universe of practicum	Constitution of teacher-collaborators	Advise during practicum
1) Classes 1.1- Characteristics of the class 1.2- Communication 1.3- Problems 1.4- 1.4 Overcoming 3) Reflections 3.1- Change in view 4) Practicum Experience 3.1 3.1-For the practicum student 1) Group Goal 1.1- For the supervisor 1.2- For the collaborator 3.1 Partnership 4) Practicum 4.1- Public Policy 2) Stage in initial training 2.1- View of practicum (1) 2.2- Development 2.3- Relationship with the university 4) Being a teacher collaborator 4.2 -4.1- View of practicum (2) 5) Practicum students 5.1- Profile 6) University 6.1- Relationship 7) School 7.1- The process of practicum 7.2- Space for training	3) Reflections 3.2 Role played by teacher-collaborator 2.3- Relationship with teacher-collaborator 3) Practicum Experience 3.2- Perception of the moment 5) Image 5.2- of the teacher 1) Profession 1.1- Choice 1.2 – Influences 2) Practicum in initial training 2.4- Relations with the labor market 3) Early career 3.1- Difficulties 3.2 Overcoming 4) Being a teacher-collaborator 4.1- Since when receives practicum students 4.2- Paper	2) Feedback 2.1- By video 2.2- By teacher-collaborator 1) Classes 1.1- Students 1.2- Problems 1.3- Overcoming 1.4- Strategies 2) Feedback 2.1- by video 2.2- by teacher-collaborator 3) Practicum Experience 3.3- Possibilities 5) Picture 5.1- Of school 5) 4) Being a teacher-collaborator 4.3- How he or she advises students 5) Practicum students 5.2- Relationship

Source: Benites (2012, p. 82)

In the first line, called **universe of practicum**, the expectation was to show how the practicum is, its space, the characteristics of each place, how routines take place, to venture out on the relationship between university and school and the type of challenges faced. The second line included the **constitution of teachers-collaborators**. It intended to show how practicum students see the figure of the teacher-collaborator, how teachers themselves see that function, the personal beliefs about practicum and the importance of that moment for the education of future teachers. The third line focused on **advice during practicum**, addressing the way teachers-collaborators advise practicum students and how they relate to them in an attempt to demonstrate knowledge and practices.

After that, presentation and discussion of results started. The study was found to have achieved its aims, showing that the practicum brings academic discourse and school practice together, but is also a training place that has certain difficulties to recognize such role. Teacher-collaborators were seen as people trained to be teachers, but who at some point in their career began to receive practicum students because of either good will or camaraderie. Their knowledge is evidenced through postures and gestures, with experience as a center of knowledge to guide their actions.

The strategy of analysis adopted was successful, since it allowed deciphering the messages conveyed in interviews, document sources and videos. The analysis protocol was appropriate regarding conceptual principles such as credibility¹ (results that are plausible for those involved); transferability (results can be transferred to other contexts or at least provoke debate); consistency (results remain stable over the years).

During the content analysis stages, however, there were difficulties to keep focused on the objectives and be coherent with the research problem. The study is a whole that interconnects different sources of information and data analysis, whose steps and protocols serve to guide the encounter of the paths, which can be difficult and exhausting. The option to remain attentive to the objectives of the study appeared to be good, pointing towards hypotheses, questions and interpretations that made it possible to discuss the data we found; however, it was impossible not to leave researcher's tracks during its construction.

4 FINAL REMARKS

The process of data analysis in qualitative research can be seen as the heart of the system, essential to discover elements that can meet the study's objectives and problem, especially in educational research in Physical Education. The use of software was essential in the process. For example, QDAMiner streamlined and organized our work with recording and context units, allowing us to handle data in a faster way. However, contact with the type of analysis evoked by the researcher is essential.

In order to elucidate how qualitative research can take advantage of content analysis, the procedures adopted and the main results found in a survey of this nature were presented. We also highlighted how such research has benefited from the contribution of content analysis, the sequences used, the procedures adopted and some decisions made. The research went through the stages of pre-analysis, material exploration and treatment of results, thus revealing distinctions regarding development of indicators and list of categories and focusing on constant return to the objectives and reorientation of categories.

Three aspects stood out throughout the whole research process. First, the idea of rigor required for the protocols and procedures adopted with the materials; second, the difficult notion of researcher neutrality towards data so that they could be considered reliable; the maturity necessary to researchers, indicating that the research experience, the time of contact with the data and the fact of working with different collection instruments gradually provide them with conditions to understand the complexity of the analysis, to pay attention to their content, and to revisit their ideas. Overall, the three aspects allow for greater clarity in the process, making it possible to clarify the step-by-step process and show the procedures adopted.

In short, content analysis is one of the types of analysis existing in the process of treatment of data in qualitative research, but it has its limits. For example, it demands time and experience in research so that data can be really valuable and meaningful; it also requires that researchers do in-depth reading on the subject of the investigation. This description focused on the presentation of qualitative research procedures regarding the use of content analysis in research on practicum programs for teacher training in Physical Education. We invite other researchers to present their perspectives.

¹ Alves-Mazzotti and Gewandsdajder (2002) point out those criteria proposed by Lincon and Guba (1985).

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