

# Bricolage in research nursing education: Experience report

*A bricolage na pesquisa em educação em enfermagem: Relato de experiência*

*El bricolaje en investigación de educación en enfermería: Relato de experiencia*

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## ABSTRACT

**Introduction:** This article presents an experience report on the use of bricolage (or DIY - do it yourself) in an educational nursing research. **Objective:** To report the experience of the use of bricolage. **Methods:** Firstly, a bibliographical survey on the term and its use in scientific circles was made; then the authors present the experience of the application of the method in a master's nursing research. Bricolage has made possible the combination of strategies for building data such as participant observation, semi-structured interviews, document analysis, and the recording of audio tutorial sessions. Data analysis was a peculiar and creative stage in which the authors, supported by bricolage, created their own analysis process. **Conclusions:** Among the main results, it can be highlighted the advantages offered by the use of bricolage, as the capture of multi-logical aspects of the phenomena and challenges. Implications for practice: This report contributes to the new methodological options for nursing studies.

**Keywords:** Education; Nursing; Methodology.

## RESUMO

**Introdução:** Este artigo apresenta um relato de experiência sobre a utilização da *bricolage* em uma pesquisa educacional em enfermagem. **Objetivo:** Relatar a experiência do uso da *bricolage*. **Métodos:** Primeiramente, foi realizado um levantamento bibliográfico sobre o termo e sua utilização em meio científico, em seguida, as autoras apresentam a experiência da aplicação do método em uma pesquisa de Mestrado em Enfermagem. A *bricolage* possibilitou a combinação de estratégias para a construção dos dados, como a observação participante, entrevista semiestruturada, análise documental e gravação em áudio das sessões tutoriais. A análise dos dados foi uma etapa bem peculiar e criativa, onde as autoras, amparadas pela *bricolage* criaram seu próprio processo de análise. **Conclusões:** Dentre os principais resultados são ressaltados as vantagens proporcionadas pela utilização da *bricolage*, como a captação dos aspectos multilógicos dos fenômenos e desafios. Implicações para a prática: Este relato contribui com novas opções metodológicas para estudos em enfermagem.

**Palavras-chave:** Educação; Enfermagem; Metodologia.

## RESUMEN

**Introducción:** Este artículo presenta un relato de experiencia sobre la utilización del bricolaje en una investigación educacional en enfermería. **Objetivo:** Relatar la experiencia del uso del bricolaje. **Métodos:** Primeramente se realizó una búsqueda bibliográfica sobre el término y su utilización en el medio científico; después las autoras presentan la experiencia de la aplicación del método en una investigación para el máster en Enfermería. El bricolaje permitió combinar estrategias para la construcción de los datos, así como la observación participativa, entrevista semiestructurada, análisis documental y la grabación en audio de las sesiones tutoriales. El análisis de los datos fue una etapa bien peculiar y creativa donde las autoras, amparadas por el bricolaje, crearon su propio proceso de análisis. **Conclusiones:** Entre los principales resultados, son resaltadas las ventajas proporcionadas por la utilización del bricolaje, como la captación de los aspectos multilógicos de los fenómenos y desafíos. Implicaciones para la práctica: este relato contribuye con nuevas opciones metodológicas para los estudios en enfermería.

**Palabras clave:** Educación; Enfermería; Metodología.

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## INTRODUCTION

In this article, the use of bricolage experience as a research methodology in the nursing education area is analyzed. Therefore, we present the theoretical framework that has supported the construction. Theoretical and methodological innovations have achieved prominence in the scientific community as its use in social research, which is of qualitative nature, contributes to the reframing of the knowledge construction process.

The authors argue that the use of innovation requires paradigmatic rupture and not only the use of resources or diversified technologies. In this perspective, bricolage emerges as an alternative methodology that integrates "theories, methodologies, researcher and research context"<sup>1,2</sup>.

The choice of bricolage has occurred by the realization that it dialogues with studies under the theoretical framework adopted, providing opportunity for the articulation of theories, methodologies, performance of researchers and participants in the study, in a multi-referential scheme of construction of knowledge.

Bricolage has been increasingly used in social research for adjusting itself to studies developed in education and for presenting itself as a promising and innovative method, in which the subjective traits of the researcher interact with the frameworks adopted in interconnected and complementary way<sup>2-6</sup>.

Understanding the methodology adopted in this study coincides with the proposal of Minayo (2010) in a comprehensive and concomitant way:

*(a) as the epistemological discussion on the 'way of thinking' [...]; (b) as the appropriate and justified presentation of methods, techniques and operational instruments which must be used for searches related to the research questions; and (c) as [...] 'creativity of researchers', namely their personal and specific brand in the form of joint theory, methods and findings such as the experimental, observational or any other specific type of response to scientific questions<sup>7,44</sup>.*

The authors, researchers from the nursing education area, seek to take ownership of new methodologies that operationalize in non-disjunctive practices (before articulators), which enable comprehensive understanding of the objects of study, link inseparably theory and practice, respect the active involvement of the researcher in the research process, and consider the nuances and subtleties present in the quest for understanding complex phenomena.

In the first topic there will be the presentation of the theoretical basis of support to bricolage as a research methodology in education; then the experience of its use will be reported in the nursing teaching practice.

## THEORETICAL FRAMEWORK - BRICOLAGE

Bricolage has its origin in the French dialect and is related to the random and to the game as a unpredictable, incidental

and/or at-random result. More recently it was associated with craft work in which they use different materials available that, recombined and/or applied with new functions and/or other formats, give rise to a new object.

Thus, *bricolagem* in Portuguese, or *bricolage* in French and English, arises in the context of scientific research, and it derives from artistic procedures that, when articulated with the scientific methodological reflections, inspired innovations in social research<sup>8</sup>. In a more modern interpretation, it refers to manual labor, and makes use of different materials available that are transformed and thus creates new objects. Applied the scientific method, it presupposes the use of different theoretical and methodological frameworks by the researcher, which, when articulated in the research route, allows the generation of new knowledge that consolidates the pre-existing knowledge and the articulating and intellectual capacity of the author<sup>1</sup>.

The researcher who uses bricolage is called *bricoleur* (also used in the French dialect) - a 'do-it-yourself' individual who uses several tools available and incorporates diverse perspectives for understanding the object of study, taking into consideration its context and the power relations involved<sup>9</sup>.

The authorship of the term in the social sciences field of knowledge is attributed to Levi-Strauss<sup>10</sup> (1970). He used it in a discussion regarding the so called primitive knowledge - first or knowledge<sup>11</sup>.

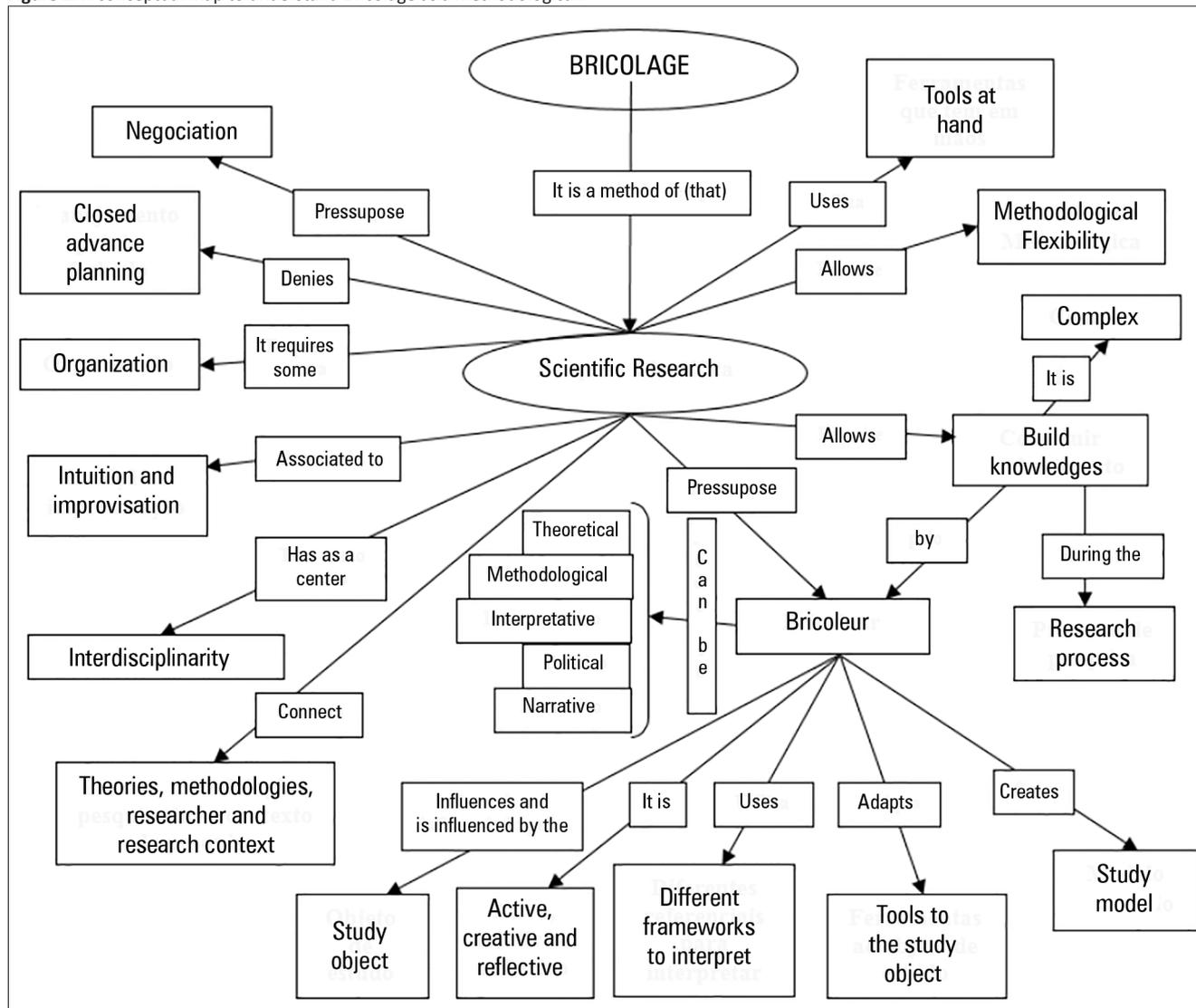
During World War II, in his period of exile in the United States of America (USA), Levi-Strauss had the opportunity to mingle with French artists of the Surrealist and Dadaist movements, with which he shared interests in arts and philosophy. Through these influences, he writes the book *The Savage Mind*, in which he emphasizes his ideas in terms of the emerged knowledge of practice and human experimentation, referring to it as *bricolage*<sup>1,11</sup>.

From this perspective, knowledge is linked to intuition, punctuated by the *cognoscenti* curiosity of the subject, resulting in unsystematic practices<sup>1</sup>. In the newest version, the topic is discussed as a scientific method in social research, using the term especially in educational research. In this design, the *bricoleur* researcher seeks the reality connection and different contexts with the investigated object, that is, he considers the complexity<sup>9</sup>.

The reality in its multidimensionality leads to understanding the historical, social, cultural, economic, and political nature. Therefore, it is intensely important to consider the established power relations in this new form of interpretation of the *bricolage*, since it may influence the conduct of the study<sup>1,9</sup>.

The conceptual map shown in Figure 1 helps in understanding *bricolage* as a research methodology, which presupposes subject - an active, creative, and reflective *bricoleur* in the research process, which dominates and is able to articulate different theoretical frameworks for interpreting the phenomenon under study. Furthermore, researchers use diverse data collection strategies, creating their own way or study model in the process<sup>12</sup>.

Figure 1. A conceptual map to understand Bricolage as a methodological.



Source: Elaborated by authors, based on KICHELOE, BERRY (2007); RAMPAZO, ICHIKAWA (2009); OLIVEIRA et al, (2012); NUNES (2014).

The bricoleur "is configured in multiple modes; all of which can be viewed in a separate or crisscrossed mode, coexisting with each other and further enhancing the work of the researcher"<sup>5,33</sup> These modalities are:

- theoretical bricoleur - production consumer, interpreter of paradigms, and capable of relevant derivations, crisscrossing the study object to the knowledge already available;
- methodological - it uses diverse techniques, all intermingled by introspection;
- Interpretive - presents the look that analyzes the phenomenon in context considering the social, cultural, and historical aspects involved in it;
- political - it considers the power relations inherent in the studied phenomena and established interactions;

- narrative - recounts his interpretations, arising from network connections that are established between his perceptions and interests, and the references that he freely chooses to adopt<sup>13</sup>.

Certainly researchers move between these modes, articulating them in the research process, that is, they are complementary and are mixed in the study design. Their understanding separately assists solely in the consolidation of the bricoleur desired profile<sup>13</sup>.

Negotiation is another feature that helps define the bricoleur researcher; it also uses the movement of analyzing the study phenomenon from different perspectives - which is highlighted by the critical hermeneutics, since the social context participates in the interpretation process and the intuition of the researcher is heavily involved<sup>5,10</sup>.

The interdisciplinarity is centrally present in the research process through bricolage and it takes on the characteristic of articulation between the traditional and the complex logic of research. Therefore, the interdisciplinarity promotes an increase in terms of the understanding of the phenomenon to a higher level<sup>1,5</sup>.

The intuition and improvisation presuppose a handmade path, that is, methodological flexibility; however, they cannot be mistaken for lack of planning. Although researchers do not take a closed or inflexible planning as a starting point, we need to start working with an organization that can be revisited continuously in the subsequent decision-making that characterizes this process of research<sup>12</sup>.

The main criticism concerning the use of bricolage refers to the fact that scientists do not envisage such a strict way of doing social research. Another important aspect relates to the findings, because in fact the bricoleur does not get a hold or sets truths, since his views on the phenomena is just one of many perspectives that may exist<sup>11</sup>.

## **BRICOLAGE APPLIED FOR THE RESEARCH IN NURSING EDUCATION**

At this stage there is the presentation of a report on the experience in terms of the use of bricolage in a master's nursing research, carried out in a public university in the Midwest region during the year 2013.

### **The research and its goals**

A qualitative research, of the exploratory type, which is common in educational themes, was developed; however, it requires longer terms and greater autonomy of the researcher to move through the investigative corridors that the reality and its theoretical/bibliographic databases will provide<sup>14</sup>.

The study was done by applying the Active Problem-Based Learning methodology (PBL) during the course of Introduction to Management in Health, conducted the fourth semester of the nursing course. The aim was to analyze how PBL promotes the reconnection of knowledge for managing nursing and also how it enables the development of learner autonomy in the process of learning to learn.

In the definition of the methodological design, based on the method of bricolage, we sought to identify/analyze the relationships that connect the studied phenomenon, capturing meaning for each party, coordinating it with the whole<sup>9</sup>. Thus, in the construction of the interpretations of reality, they have put together the perceptions of the researchers, participating observers, teachers, and students involved in the course on the methodology of PBL in the teaching of Management in Nursing.

Besides having met the technical standards established by Resolution N<sup>o</sup> 196/96 of the National Health Council, which became effective for a longer period during the research, all participants signed the Informed Consent (IC) after relevant clarifications. The matrix research project was approved by the

Research Ethics Committee, under protocol N<sup>o</sup> CEP 796/CEP/HUJM.

### **The experience in terms of the use of bricolage as a study methodology**

The Masters provides unique opportunities for the expansion of knowledge, for the reframing of other pre-existing, and especially for the development of the academic/professional autonomy and maturity. In addition, it has made possible the awakening of many skills, among which the teaching and learning through research; it has stimulated new ways of thinking and acting in the scientific community, prompting the search for diversified theoretical and methodological references for nursing research. It was amid these concerns and queries that we had our first contact with bricolage.

The guidelines received by the credits obtained in the subjects and the credits obtained in the conduct of the dissertation led us to reflections focused on Higher Education in Nursing, theme from which we defined our study object. However, while we narrowed down our theme, more and more we met stalemates in its methodological format; at other times we were affected by environmental influences such as the teachers' strike proposition at the university, availability of sufficient human resources for the conduct of research, lack of technological resources for data collection, among other factors.

Provided by the complex thinking, we begin to ask ourselves: how to deal with so many issues that directly affect the progress of research? If complex reality involves everything and everyone, how can the qualitative researchers handle adversity involved in research scenarios? Can we discard all this power of influence?

The search for new theoretical frameworks by questioning the scientific nature of current research models allowed us alternative ways of understanding social research. This reading investment movement on different research methodologies was what gave us the contact bricolage, understood as a form of work "made offhand" and that takes advantage of different tools<sup>3</sup>.

Bricolage has been used in various studies in the areas of administration, accounting, architecture, arts, social sciences, and mainly in educational research. Among the major revelations concerning this methodological framework is the analogy that it is the fabric of a patchwork, formed by different tissue structures, and that takes shape and size during the research progress, requiring the inclusion of perception, subjectivity and especially researcher's creativity.

Another feature on bricolage, which influenced our choice as study methodology is that it is set in a postmodern theoretical-philosophical orientation, containing its epistemological principles based on complexity, accepting the confluence and the combination of modern and constructivist research techniques, encouraging discussions without delimiting borders or sovereignty of one over the other<sup>3</sup>.

With an open search scheme, bricolage takes complexity into account and aims to capture the different nuances involved in

the multidimensional reality. With the broad focus of the research, it enables the use of a variety of methods, techniques, tools and frameworks that allow "interpretations from different sources"<sup>3</sup>.

The proposal bricolage does not come to deny the search formats that have been developed to the present day; on the contrary, it increases the possibility that the bricoleurs can create new ways of doing science. Researchers have the opportunity of taking part in their research, because, along with the concept of bricolage, subjectivity is interwoven; therefore, it is not possible for researchers to be neutral, since all their perception is shaped by conditions and the power relations of the context that surrounds it<sup>9</sup>.

Thus, recycling allows researchers to adjust references, notions, and concepts according to the needs that arise in the context of the research. They do not need to follow a set of pre-established rules, movement characteristic of conventional research; methods and techniques are thought insofar as they see the need to understand a particular fact.

And it is exactly in this range of options that pursues the bricoleur researcher, feature in which lies its main advantage and innovation, which also houses the main criticism. Failure to define a methodological path sounds, a priori, like the unscientific reductionist views, a fact that needs to be clear to the bricoleur who decides to work with the unexpected<sup>9</sup>.

Even if bricolage presents itself as an open and flexible path, this does not mean that it does not have methodological rigor. For bricoleurs "accuracy is the degree of fidelity to the unquestioned steps in the research process". Part of his criticism is based on the fact that, for bricoleurs, there are no borders or boundaries separating the empirical and philosophical<sup>9:28</sup>.

In bricolage, each element "is a set of relationships" that are established in the concrete reality of the phenomenon. Even if, somehow, researchers do not glimpse a certain path a priori, "working with the unexpected" makes sense<sup>15:1032</sup>.

It is not easy to follow this perspective of understanding reality when you still have the habit of thinking within a Cartesian model. First, a break with several paradigmatic beliefs related to the scientific work method was required. Sometimes the concern for the validation of research procedures was real for us, even without having the definition of strategies. The lack of structural definition caused distress, and to overcome this phase, more investment in readings on this framework was needed.

Among these readings, what caught our attention was the very affinity of tinkering with complex thinking. The poetry of Antonio Machado, who inspires the methodological complexity, says: 'the path is made by walking'.

For the bricoleur, the poetry of Antonio Machado and the epistemology of Edgar Morin have become a founding inspiration. For these thinkers, respectively, 'the path is made by walking' and 'the method is done at the end'. The authorization to move in favor of originality with critical interweaving of multiple references at all the stages of the research is established here. This is what governs the sense of rigor of the bricoleur researcher<sup>16:120</sup>.

During the methodological construction of our research, because it is an educational intervention in a discipline of the graduation course, it took formal bureaucratic arrangements - approval in the collegiate of the course. For adjusting the proposal to the amendment and the pedagogical didactic organization of the discipline, every last detail was considered in order to occur legal legitimacy in the use of the Problem-Based Learning (PBL) and its forms of assessment.

At this stage, the first reported challenge was to consider the development of the situation-problem (fictitious case) by the researchers. Therefore, the researchers invested in the reading regarding the subject and the development of a previous case, which was subjected to a validation process with experts in management and the PBL methodology, and by indicating them, we performed small adjustments and formalized a final version.

The second challenge consisted in operationalizing PBL during the period of the course. This research demanded special dedication to this stage. Since the PBL methodology suggests working with small groups; the class enrolled in this course was divided into two tutorial groups, with each group allocated in an exclusive space, with the help of a facilitating teacher and a participant observer.

The biggest concern was related to the registration forms and capture of reality. The initiative in understanding all the complex elements involved in setting the use of PBL has led us to adopt a series of instruments and research techniques in an attempt to capture with a greater coverage the phenomenon investigated. "The current concern in terms of the complexity of the phenomena indicates that the sole and exclusive use of only one type of data leads the resulting analysis to present limitations and reductionism"<sup>14:198</sup>.

In this perspective, in this study, we selected several elements, triangulating research techniques that were used throughout the investigation, as follows:

- Document analysis: legal apparatus, defined by laws and administrative documents relating to higher education, nursing education, institution, stroke, and discipline, as the LDB, DCN; PPP; CONSEPE resolutions; Regiments and Discipline Plan;
- Audio recording of the tutorials: all tutorial sessions in which we employed the seven steps of PBL were audio recorded and transcribed;
- Portfolios: the records in portfolio by the students - containing description of the activities carried in the day; perceptions of the methodology; their learning process; Review strategies;
- Individual evaluation reports of the student by the facilitator: students' assessment containing their progress, developed skills, suggestions, and guidance. In this same document there was a space reserved for comments of the student, where they can make their considerations on the evaluation of the tutor.

- Participant Observation: data observations were used, carried out during the tutorials and sessions written by two observers of the research, one for each tutorial group (1 and 2);
- Semi structured interview: The authors conducted interviews with the facilitators of the two tutorial groups (1 and 2). The interviews were transcribed verbatim and also used for analysis.

Bricolage triggered creativity to the combination of different techniques for data collection and also enabled adjustments/adaptations in the conduct of the PBL, since it has a structure and well defined steps for its concreteness. These adjustments were required by environmental influences; thus, supported by bricolage, we could create favorable scenarios for its completion in order to guarantee the sequence of its steps. Therefore, movements that provided support to us before the legality of intervening in a discipline of undergraduate nursing were required, ensuring that the basic themes of the course through a problem situation would be worked out.

A general and thorough analysis of the context, with reflections on all the recreation opportunities of the proposal in our reality was required. In this regard, bricolage was crucial to success.

For the bricoleur researcher, understanding the ways of "social, cultural, political, ideological, discursive and disciplinary" influence in reality is imperative to conduct their research, because such specificities shape different perspectives and assist in the selection and development of "methodological, theoretical, and interpretive tools"<sup>9:39</sup>.

Creativity was well expressed in our stage of collection and analysis of data, in which, supported by bricolage, we incorporated several analyzing materials by combining various techniques and we build our own form of analysis, which we can say, was the culmination of our creative process, since it was necessary to think thoroughly and carefully on the organizational strategies of the data and their interpretation formats.

The challenge of creativity brings us to the stereotype that, as bricoleurs, we resemble inventors, for both remain focused on the future "exploring the field of possibilities" in the present. It provides freedom to the human that is confined within each scientist, allowing subjectivity to have a voice in the research process<sup>9:104</sup>.

Thus, with the support of the forms of interpretation already described in other studies<sup>7,17</sup>, we recognize the fragments that composed the phenomenon investigated in significance maps in order to assign it an interpretative sense.

In bricolage, interpretation begins with the POET - Text as a Doorway. "It is anything that makes or may make sense - a picture, a book, a photograph, a theory"<sup>9:45</sup>.

We have obtained different POETS derived from the combination of diverse procedures in the data collection process. This feature reinforced the multi-logical aspect of the research, and all the material submitted to the interpretation process.

With the theoretical support in Hermeneutics, the act of interpreting the bricolage is critically governed and it considers the power relations of the context. This research stage enabled the opportunity to create our own way of analysis, categorizing it as a more artisanal activity than methodological.

In bricolage, this stage of analysis and interpretation is considered as a temporary approach for the explanation of the data, as there are no objective truths in terms of a phenomenon in this research perspective, since the reality is unstable and dynamic.

First movement in the processing of the data contained in the organization of POETS and their individual interpretations in order to better understand the different nuances that could be identified. Then these data were mapped in an integrated manner, in an interpretation considering the context and their interpenetration. Thus, the 'strong' points were reported in the central maps, giving rise to the empirical categories and subcategories that were discussed in the light of the reference of complexity and liberating pedagogy.

For this stage, a process of 'come and go' was conducted between activities involving the initial reading of POETS, which provided some familiarity with the data; the in-depth reading, in which we have been drawing and marking some meanings; the construction of maps, which have been integrated into the 'strengths' of each set of meaning; as soon as we held the meeting of these maps with enlarged view to list, among these, which ones constitute our categories of analysis from the wealth of such data presented.

For this study, we claim to have carried out the interpretation of the interpretation<sup>17</sup> that reveals the participation of the subjectivity of the researchers in the analysis process, guided by the theoretical framework.

The use of bricolage has enabled the use of a very significant abundance of data, which turned into challenge the selection of which data would come described in the final version of the thesis among the many results of this study. Therefore, we prioritize research objectives in order to ensure compliance with the deadlines stipulated by the post graduate program at the master's level.

## FINAL CONSIDERATIONS

The proposal to work with an active teaching methodology such as PBL in a traditional curriculum, applying it in a single discipline, has brought to us several obstacles which are natural to the context in the course of a process of change. With the bricolage, we had the opportunity to create favorable scenarios to conduct the research, and through those obstacles, we were able to operationalize the PBL adapted to our reality by using this process, materials, and resources that were available.

Bricolage has enabled a magnified look on the conduct of PBL in an adverse scenario. It has demanded researchers to work and develop their creativity as well as involve their perception in terms of the phenomenon studied, providing transit

by creating research, retaking and reviewing the steps completed whenever there was need.

Thus, we believe that the possibilities of educational research have been improved, taking into account the context, the established pedagogical relationships, the characteristic reactions, but not the characteristics of the change process, that is, the power relations involved in the complex reality of an educational environment.

The use of bricolage was an important step to be defined in the construction of this research, as it is a methodology that does not explain a path a priori. Therefore, it was necessary to reform the thought by the authors, emphasizing the need of a methodological innovation in the research design in order to meet all the multidimensionality involved.

In the condition of bricoleurs researchers, we affirm the involvement of our perceptions and the object of investigation. This framework was able to go beyond not only endorsing the methodological construction for this research, but also by changing our way of thinking and acting on the world, preparing for the arrival of an uncertain future.

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