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abordando vivências  
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addressing participatory  
bioconstruction  
experiences

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### Abstract

Based on the study of three participatory bioconstruction experiences in the cities of Bauru and Campinas from 2009 to 2017, and characterized in three urban scales (lot, neighborhood and city), three types of social organization (association or active grouping, company or school and popular neighborhood or rural community) and different degrees of participation, the present article aims to obtain a reading of the landscape of these experiences by applying the Discourse of the Collective Subject method (DCS) to the interviews and data treatment. Participatory Action Research (PAR) was used as a methodology for conducting the experiences that approached contemporary processes of collective construction of knowledge in different areas, through the resolution of collective problems in a participatory manner, resulting in meetings, discussions and a collaborative action plan using permaculture and bioconstruction techniques, highlighting the importance of "**parti.cipate+co.laborate**" for the reflection and awareness on the environmental and collective issues. The results were presented from the synthesis-tables, central ideas of the DCS revealed the reading of the landscape of the experiences through the perspective of the set of its participants (actors of the process) and indicated that the means of collecting and processing data as proposed by DCS is important not only

for the evaluation but also the generation of data on participatory and collaborative actions.

**Keywords:** Participation, Participatory action research, Bioconstruction experience, Discourse of the collective subject, Reading of the landscape

## 1 Introduction

The occupation of urban spaces is increasing and, according to a report released by the UN (ONU, 2014), more than half of the world population lives in urban areas. In Brazil, the urban population already reaches 84.4%, according to a survey conducted by IBGE in 2010 (IBGE, 2010). As terrestrial resources are finite and the population grows exponentially, requiring greater production of resources, it becomes increasingly difficult to meet the basic needs of the entire human population. Therefore, the protection of the environment is a very actual issue and constitutes one of the main challenges for the humanity in the 21st century.

Faced with this problem, many believe that the technological advances will reach solutions to the issues cited. For Herrera (1982), however, this will not be sufficient to prevent the disappearance of man due to his own actions, ironically.

Jacobi argues that any effort to reverse the current picture of

[...] permanent degradation of the built environment and its larger ecosystem" cannot fail to consider "the determinants of the process, and [...] forms of social organization that potentiate new developments and alternatives for action in a sustainability perspective" (Jacobi, 2000, p.14, our translation).

Likewise, the principle number ten of the United Nations Declaration on Environment and Development, adopted in 1992 in Rio de Janeiro, cites the importance of citizen participation in dealing with environmental issues:

The best way to address environmental issues is to ensure the participation, at the appropriate level, of all concerned citizens. At the national level, each individual will have adequate access to environmental information available to public authorities, including information about hazardous materials and activities in their communities, as well as the opportunity to participate in the decision-making processes. States will facilitate and stimulate public awareness and participation by making information available to all. Effective access to judicial and administrative mechanisms, including compensation and repairment of damages, will be provided (ONU, 1992, p. 2, our translation).

Given that decisions which interfere with the quality of life and in the environment where the population live relate to assets and rights belonging to everyone, the public cannot be excluded from choices that are likely to affect them. Thus, one cannot separate popular participation and the preservation of the environment, because they are indissociable.

Pronsato (2005) explains that the participatory approach reveals a strong preoccupation with the collective conquest of the citizens' rights, besides being deeply permeated by the affective connection with the place.

[...] The lack of affectivity for the places and for what they represent is a straightforward path to cultural poverty. People are disoriented when they can no longer understand the spatial language in which they live in everyday life, and which tells them that in this particular present there is a respectable past and a promising future. (Pronsato, 2005, p.47, our translation)

The author warns that, in addition to the process of interaction with the population, the delineation of guidelines and the execution of projects, there is still a need to study ways of continuing this process, enabling a relationship of belonging and identity of the user and his inclusion as an active and conscious agent in the city and, therefore, it is necessary to find methodologies and ways to do so (Pronsato, 2005).

For such, experiences of bioconstruction were held in the cities of Campinas and Bauru-SP during the period of 2009 to 2017. They resulted from the search for a methodology of work/teaching, aiming not only at a technical-practical knowledge of the bioconstruction techniques' execution, but also the generation of reflection and awareness about sustainability parameters as extended by Sachs (2004) to five dimensions: social, economic, ecological, spatial and cultural.

Having the urban environment as the object of intervention, the experiencers (actors of the process) were encouraged to **"participate+collaborate"** in the resolution of collective problems posed in a participative way (taking part voluntarily), through transdisciplinary, multicultural actions and discussions were brought up through meetings in order to achieve a plan of action carried out collaboratively (working together) using permaculture techniques and bioconstruction, culminating in a process of collective construction of knowledge in different areas involving non-academic actors and communities.

Permaculture, a term formed by the fusion of the words *permanent agriculture*, initially consisted of the development of a work structure, evolving into a sustainable agricultural system. Over time, it came to encompass a broader meaning in the cultural sphere, and its meaning was redefined for "permanent culture" (Mollison, 1994). Created in the 1970s by Bill Mollison and David Holmgren, it seeks to understand how ecological systems work to supplying basic human needs, in harmony with nature in a practical and cooperative way with the least possible energy expenditure. Whether in rural or urban space, permaculture encourages the practice of its ethical and design principles in pursuit of sustainable human societies.

It was sought to encourage participants to find "their own way, whatever the circumstances", creating without the appropriation of "techniques and tricks", but having an "unpretentious, original and malleable attitude", in the face of new and unexpected situations (GROPIUS, 1994, pp. 25-26).

The term "experiencing" the bioconstruction was used, instead of bioconstruction "workshop", "building effort" or "course", because it implies that the activities pursued sought a form that refers more to a lived experience than to a theoretical and practical learning about collaborative bioconstruction.

Bioconstruction techniques were used to unite ecology, architecture and urbanism, aiming at construction solutions with the least possible environmental impact, enabling conscientious and responsible choices environmentally, economically and socially, considering and analyzing the life cycle and the processes by which the materials used in constructions are submitted, prioritizing the use of natural and regional materials.

## 2 "Praça Cultura Viva" Project - Praça Val Rai

The "Praça Cultura Viva" project aimed at triggering a process of reflection on artistic, cultural, social, economic and political issues through the appropriation of the public space. It proposed a cultural intervention and environmental awareness through bioconstruction experiences and theater classes with the community around Praça Val Rai (Val Rai Square), located in Jardim das Orquídeas in Bauru - SP.

The activities were carried out in 3 phases (2009, 2013 and 2015) with the support of the Bauru Municipal Program of Cultural Stimulus (Programa Municipal de Estimulo à Cultura de Bauru) and resulted in a participatory landscaping project for the square, its execution and inauguration. Its name was given in honor of Bauru artist Valdir Aparecido Raimundo - "Val Rai", who died in 2008 and who had his artistic performance and trajectory turned to the Butoh technique. Figure 1 illustrates the before and after experiences of bioconstruction in the space.



**Fig. 1:** Praça Val Rai (2009, before the experience; and 2017, after it). Source: The author, 2009 and 2017

### 3 Santo Antônio Children's Education Center (Centro de Educação Infantil Santo Antônio - CEISA)

CEISA is a partnership signed between Plasútil Industry<sup>1</sup> and Bauru City Hall to serve the community close to the company and children of the employees of the industry.

From site visits, meetings with the school coordination and teachers and play activities with the children for the purpose of developing and executing a collective project, an action plan was drawn up and it comprised an architectural design of the basic structures of the cover of the sandbox and the dollhouse, both inspired by the theme of Apoená Zá-hê, which was being studied by the students that year.

The experiences of bioconstruction were carried out with the collaboration of parents, teachers and coordinators, once a week, from April to December 2012. It began with a cover of the "Sandbox" (Caixa de Areia) in a vault format, with empty circles to the center, representing the phases of the moon, using glass bottles embedded in the structure for the passage of light and ended with the construction of the "Dollhouse" (Casa de Bonecas) that later would be nicknamed "Blue House" (Casa Azul) by the children. Figure 2 illustrates the before and after landscape where the bioconstruction experiences took place.



**Fig. 2:** Views of the landscape, before and after the experiences of bioconstruction. Source: The author, 20

### 4 Ecohouse experience Kripa Madhu

The Ecohouse Kripa Madhu was a project to implement a collaborative house aimed at promoting and practicing the concepts of urban permaculture through bioconstruction experiences, meditation, yoga and vegetarian practices in Barão Geraldo, Campinas district. It began in February 2016 and ended in June 2017.

The house had three main moments of transformation, permeated by experiences of bioconstruction that configured short cycles within a longer cycle. The first one was an exploratory phase of adaptation with the house, with the routine of the residents, knowledge of the surroundings, the dynamics of the city, housing new people who had affinity with the project and could be partners, understanding challenges to be faced for the preparation of a plan of action and a clearer delineation of the proposal and the objectives of the project so that they could be put into practice.

In a second moment, collective work could be experienced, as well as the learning and sharing of knowledge in a more intense way, enabling a transition to the third moment, a maturation of the proposal, greater awareness and broader vision of practices and strategies for sustainability of the house, allowing better and more meaningful results. Figure 3 illustrates the before and after the bioconstruction experiences.



**Fig. 3:** View of the landscape before and after the experiences. Source: The author (2016 and 2017).

### 5 Method

The case studies were selected from three parameters detailed in Table 1, below.

Case studies	Urban scale	Social Organization (THIOLLENT, 2007)	Degrees of Participation
Ecohouse Kripa Madhu	Lot Scale	association or active grouping	from passivity to self-development
CEISA - Santo Antônio Children's Education Center	Neighborhood Scale	company or school	from passivity to self-development
Val Rai Square - "Cultura Viva Square"	City Scale	popular neighborhood, rural community	from passivity to self-development

**Table 1:** Selection parameters of the case studies. Source: The author, 2017.

The first parameter refers to the representation of different **urban scales** - the square (city scale), the nursery (neighborhood scale), the house (lot scale) - related to the human dimension illustrated by Gehl (2015) through the social vision that has its limit in 100-meter distance and deals with the relationship between senses, communication and dimensions, important parameters for urban planning. The author reports that very little occurs at a distance of 25 to 100 meters, whereas from 25 meters on we begin to decode emotions and facial expressions and that, from 7 to 0 meters, all the senses can be used (Gehl, 2015).

The second is related to the **social organization** of each case studied, which, according to Thiollent (2007), can be distinguished in an active association or grouping, organized to achieve practical objectives of a homogeneous social actor having sufficient autonomy to order and control the research (Ecocasa Kripa Madhu); a company or school, an organization in which there are hierarchies or groups whose relationships are problematic (Centro Educacional Infantil Santo Antônio - CEISA); and a popular neighborhood, a rural community, organized in an open environment and frequently organized by institutions outside the community (Praça Val Rai - Praça Cultura Viva).

The third is based on the observation of different **degrees of participation**, which according to Geilfus (2009) is not a fixed state, but a process in which there may be a greater or lesser degree of participation of people in the development process depending on the degree of decision that people have in the process. The author exemplifies it with the participation ladder, in which it is possible one gradually move from an almost complete passivity (being a beneficiary), to gathering information, participation by consultation, participation by incentives, functional participation, interactive participation, reaching control of his own process of self-development (Geilfus, 2009).

The methodology used for the implementation of the experiences of bio-construction was the **participatory action research - PAR**, as it values the search for understanding and interaction between researchers and members of the situations investigated, resulting in a plan of action. Thiollent (2007) points out that action research is a type of empirically based social research that is "conceived and carried out in close association with an action or with the resolution of a collective problem and in which the researchers and participants representative of the situation or problem are involved in a cooperative or participative way" (Thiollent, 2007, p.16, our translation).

Glassman and Erdem (2014), in turn, use the term **Participatory Action Research (PAR)** and suggest that it is also recognized through its basic and indissociable premises - vivencia (experience) (**V**), praxis (**P**) and awareness (**A**), suggesting **PAR / VPA** as the most appropriate acronym to refer to participatory research in the developing world, having its foundations with strong links in the sociopolitical context of developing societies and their struggle for liberation.

Glassman and Erdem (2014) explain that the **vivencia** (experience) / participation can be defined as the full experience of an event with all its possibilities, that is, it cannot be observed, it can only be lived and felt through experience.

The **praxis** / action contains elements of dynamism and change, transforming ideas into actions, that is, it consists of an act of engagement, exercising and practicing ideas, allowing the oppressed masses to criticize, problematize and claim their condition, allowing them to overcome it, according to Glassman and Erdem (2014). According to Freire (cited in Glassman, 2014), **awareness-raising** is the process by which men, not as recipients but as subjects, increasingly acquire a deep awareness of the socio-cultural life that shapes their lives and their ability to transform reality.

The script of conception and organization of the research presented by Thiollent (2007, pp.52-77) was used for a better understanding of the experiences. It suggests the research organization phases illustrated in Table 2, below.

Nº	Phases (THIOLLENT, 2007, p.52-78).	Val Rai Square – Praça Cultura Viva Project	CEISA - Santo Antônio Children's Education Center	Ecohouse Kripa Madhu
1	Exploratory phase (THIOLLENT, 2007, p.52).	Visit to the place of Val Rai Square and surroundings (School, shops, residents).	Visit to the CEISA, talk with the coordination, activities with the children and teachers.	Renting a house, meetings and initial experiences (1st moment).
2	Research Theme (THIOLLENT, 2007, p.55).	Vivências (experiences) of Bioconstruction.	Vivências (experiences) of Bioconstruction.	Vivências (experiences) of Bioconstruction.
3	Placement of problems (THIOLLENT, 2007, p.57).	Participatory project and collaborative execution of Val Rai Square, population participation.	Participatory design and collaborative play of a playground for children.	Implantation of Co-laborativa House focused on bioconstruction experiences and urban permaculture.
4	Theory Place (THIOLLENT, 2007, p.60).	Concepts of landscape reading, action research, pedagogy of the oppressed, phenomenology of perception, bioconstruction, permaculture, etc.	Concepts of landscape reading, action research, pedagogy of the oppressed, phenomenology of perception, bioconstruction, permaculture, etc.	Concepts of landscape reading, action research, pedagogy of the oppressed, phenomenology of perception, bioconstruction, permaculture, etc.
5	Hypothesis (THIOLLENT, 2007, p.60).	Participation in the experiences of bioconstruction led to a change of perception and appropriation of the public space by the participants.	Participation in the experiences of bioconstruction led to a change of perception and appropriation of the public space by the participants.	Participation in the experiences of bioconstruction led to a change of perception and awareness in relation to urban permaculture, bioconstruction and collaborative activities.
6	Seminar (THIOLLENT, 2007, p.63).	Meetings with the coordination of the project and the population around the square.	Meetings with the coordination of CEISA.	Periodic meetings with the residents of the house and wheels of beginning and end of the experiences of bioconstruction.
7	Field of observation, sampling and qualitative representativeness (THIOLLENT, 2007, p.66).	9 interviewed participants.	8interviewed participants.	10 interviewed residents and 13 interviewed participants.
8	Data collection (THIOLLENT, 2007, p.69).	DCS Methodology, Collection of interviews and compilation in collective discourses	DCS Methodology, Collection of interviews and compilation in collective discourses	DCS Methodology, Collection of interviews and compilation in collective discourses
9	Learning (THIOLLENT, 2007, p.71).	Joint learning through action (learning by doing) and exchange of experiences.	Joint learning through action (learning by doing) and exchange of experiences.	Joint learning through action (learning by doing) and exchange of experiences.
10	Formal knowledge / informal knowledge (THIOLLENT, 2007, p.72).	Sharing of knowledge in experiences (vivencias).	Sharing of knowledge in experiences (vivencias).	Sharing of knowledge in experiences (vivencias).
11	Action plan (THIOLLENT, 2007, p.75).	Participative Landscaping Design and its execution phases.	Architectural Projects of the Sand Box Coverage and Doll House and their execution phases.	Bioconstruction Experiences; Incorporation of concepts and practices of urban permaculture; Project 1: 1 of Casa Viva (learning by doing).
12	External disclosure (THIOLLENT, 2007, p.77).	Publication of articles, conferences, social media.	Publication of articles, conferences, social media.	Publication of articles, conferences, social media.

**Table 2:** Phases of the research organization (Thiollent, 2007) and application in the case studies. Source: Prepared

## 6 Discourse of the Collective Subject (DCS)

The Discourse of the Collective Subject (DCS) was used to evaluate the experiences of bioconstruction, in order to enable the synthesis of the individual discourses (testimonials) collected in central ideas from the analysis of the contents of the discourses in a systematized and logical way. It is possible to generate both first-person collective discourses (compiled from the original discourses) and the formation of central ideas that expose the participants' view of the process, without excluding any ideas emitted because this method does not use the saturation criterion (used in qualitative research).

In this way, it was possible to record experiences, rich in information, generating a report issued by the participants themselves, giving voice to the actors in the process, without suppressing any ideas, opinions, proposals, judgments, etc.

The Discourse of the Collective Subject (DCS) is a method developed at the University of São Paulo (USP) for the meaning attribution researches that have as base material testimonials or other supports of verbal material, allowing the deep analysis of testimonies, but also reaching generalizable results (quantitative) (Lefevre and Lefevre, 2012).

For this, the opinion collection is very important and is obtained through an open question that enables the issuance of a testimonial. Because it deals with the opinions of individuals living in collectivity, society or groups, it is necessary to collect constitutive attributes of the researched society, associating

a representativeness and a generalization of the results. It consists of a set of instruments aimed at recovering and giving voice to the Social Representations (SR), forming a symbolic plan by which society is constituted and allowing communication among its members, giving it cohesion (Lefevre and Lefevre, 2012).

In this sense, the DCS proposes that the collective thinking can speak directly, being able to express itself, which implies instituting a subject capable of representing it, and can be neither the pure individual subject, because it is individual, nor the subject impersonal knowledge, because it expresses itself indirectly, in the third person, treating the collective thought as an object and not as a subject (Lefevre and Lefevre, 2012). This method employs the first person singular, "direct speech," the "collective first person singular," to express the thought of social representations, which are the social lived individually, resulting in the direct speech of collective thought (Lefevre and Lefevre, 2012).

Thus, it is possible to illustrate the researched social field, rescuing in it the universe of the differences and similarities between the visions of the social actors or collective subjects that inhabit it, contemplating the whole, valuing the multiple, the complex, the different, considering it with the same degree of importance, living together dialectically with the similar, the one, the simple (Lefevre and Lefevre, 2012).

## **7 Applying DCS**

In order to elaborate a DCS, it was necessary that the theme (bio-construction experiences) undergo a process of problematization as in a research (Lefevre and Lefevre, 2012). In this way, the following question related to the theme was formulated: **which reading of the landscape did the bioconstruction experiences provide to its participants in relation to the methodology of participatory action research?**

The definition of social actors/agents, subjects or groups of subjects to be interviewed, capable of expressing opinions, positions, judgments on the subject and for which the problem to be investigated made sense, is an important point. As this research refers to the experiences of bioconstruction, the participants of the experiences studied were defined as the social actors to be interviewed, and the place where the experiences were realized, as the chosen place.

In all cases, it was sought to locate and interview the largest number and the greatest diversity of participants, so that a broader range of ideas could be emerged in the field (qualification of ideas), analyzing the distribution of qualified ideas among the studied population (degree of sharing). Thus, it was judged that the data collected were sufficient for the analysis that the objective of this research is proposed, not having its focus on only one specific case of a bioconstruction experience, but in a group of different cases of experiences that happened over a period of eight years as a whole.

Another important point for DCS is the non-use of the saturation criterion (used in qualitative research), which consists of considering that the universe of ideas is already complete at the moment when ideas / opinions begin to repeat themselves. This is because DCS, as Theory of Social Representations, seeks the rescue of socially shared ideas and will naturally be repeated among the subjects interviewed, requiring the collection of all existing ideas and not only those that are more present in a field. Thus, the less shared responses, which are part of the collective discourse, are also available, allowing different ideas to occur, making the collective discourse richer (Lefevre and Lefevre, 2012).

For the preparation of the interview form, the nine important points in the preparation of the forms were followed, as pointed out by Lefevre and Lefevre (2012). The following questions and their respective objectives were reached. **Question 1.** What experience(s) did you participate in? What activity (ies) did you perform? Please describe what you have learned and / or taught. **OBJECTIVE:** To make the participant remember how the experience was, seeking details in his / her memory and thus, to obtain a description, from the perspective of the participant, of what practical activities (**action**) were performed and of which he participated specifically, assisting in a better understanding of the following questions. **Question 2.** What did you think of the experience / experience? Did it bring you some reflection? Which one? **OBJECTIVE:** To know if the participation in the experience brought some **reflection** to the participant. / **Question 3.** After this experience, have you changed anything in your day-to-day life? What? **OBJECTIVE:** To know if there was any practical change (**awareness**) after the activities carried out in the experiences. / **Question 4.** Would you like to highlight some moment of the experience(s) that has been most striking to you? **OBJECTIVE:** Reassemble the experiences

through remarkable moments, capturing the **reading of the landscape** of each participant connected with space and time.

In relation to the immersion time of the experiences, two types of interview forms were produced, one for participants of long immersion (from weeks to months) and one for participants of short immersion (some days, weekends or holidays), all keeping the same goal in each question.

The chosen way of collecting the testimonies was the individual interview of the participants of the experiences because its approach allows the rescue of individual opinions free from any kind of interference, the outcrop of spontaneous speech and the discursive rescue of the opinion of the population that do not have their voice heard (Lefevre and Lefevre, 2012). The time spent and the cost of the research were minimized through interviews with audio-recorded responses through the WhatsApp application (57%), and the use of this resource caused no losses to the testimonials since it was used only in cases of participants already accustomed to using it for communication. However, preference was given to face-to-face interviews (43%) wherever possible.

After collecting, recording and transcribing the interviews, the data tabulation was performed following the steps recommended by the authors: "questions should be analyzed in isolation", copying, "in full, the content of all the answers to question 1 in the DAT 1 (Discourse Analysis Tool 1), as shown in Figure 4, in the column: key expressions "; "to identify and underline key expressions of core ideas" and "key expressions of anchorages"; "to identify the central ideas and (where appropriate) the anchorages" from the key expressions copying these central ideas and anchorages in the corresponding boxes"; "to identify and group central ideas and anchorages of the same or equivalent sense, or of complementary meaning" by labeling "each grouping with letters: A, B, C, etc."; and creating "a central idea or anchor-synthesis" that expresses "all the central ideas and anchorages of the same sense" (Lefevre and Lefevre, 2005, pp.46-54, our translation).

KEY-EXPRESSIONS	MAIN IDEAS
<p>7-Jo. - It was a place that was <u>without any project</u> and had nothing, only a <u>Space which belonged to the City Hall like the many others in disregard</u>. And then <u>Mr. E.</u>, ... <u>he had already planted some trees</u> ... He commented that <u>that was an escape to relieve the "stress" of his work</u> ... I said - "Well, I'm going to give my contribution to this from here" (...) I expressed the interest of making a <u>petition</u> ... but it was so <u>fast</u> ... I think <u>it collected more than 500</u>, that was enough, this is there in the City Hall, and then we waited, didn't we? (...) to our surprise ... the <u>Mayor</u>, ... one day <u>he appears out of nowhere</u> in that square, right? (...) he came, he said - "no, there is a project to pave here, to ply all around", <u>which was not even paved</u> ... we continued waiting ... then you guys came ... <u>with that wonderful project that aggregated us</u>, wasn't it? It <u>was bioarchitecture</u>, wasn't it? (...) and it was cool because <u>you also consulted us</u>, it was not a project made inside a room, I noticed that it was a project <u>that had already heard about the area and the people who were already there in activity</u> who had contacted with the E., in case, they came to me too, didn't they? So, at that moment, we saw that it had happened, <u>it gave our petition effect</u>. And the general conclusion is that <u>our place was very beautiful, we like the square a lot</u>, E. also, and we were very satisfied with the result. (...) <u>So a lot of things are money but there's something that we have to be dedicated and go after</u>, so it didn't happen so fast (...) I saw several people who were my clients <u>walking there after the square was transformed</u>, things you have not done before, have you? So everyone in the area walking there, <u>taking the little dogs to walk, children playing in the square</u> ... It's much bigger than that ... The family could be there, participating and altogether there <u>having a recreation in the afternoon, on Saturday "Sunday"</u>, right? (...) I think it was <u>a joint effort gift</u>, so we reaped all of us. (...) <u>it was also nice that the school was participating</u>. I can remember, right? It was very good that the young people from Brizola School also participated, the school that faces the square (...) that <u>child who used to go there at the age of ten is almost seventeen now, already knows things</u>, is aware of things, right? So <u>that teenager goes there today and must be looking with pride</u>, right? Saying "I put my hands on the construction of this tortoise there," because there is <u>a giant tortoise there</u>, so I think that's it, I think these are things that we have to value, continue giving value and make <u>the community get involved in it because the community will be able to take care of it and will be able to enjoy it</u>, right? <u>And pass it on for generations</u>. (...) cannot describe it in another <u>word</u>, it is in a way, I think, love, because it is <u>a wonderful experience and love</u>, when present, gives people a lot of pleasure, <u>a lot of satisfaction</u>, doesn't it? So it's the experience itself, <u>it was a very good experience registered in people's minds</u>, right? And <u>I recommend that you do</u> ... that <u>everyone goes through this experience</u> and that it can be part of their lives, and of <u>their children too</u>, right? (...) because we see that sometimes <u>something that was in disregard can be transformed</u>, then, you strive and you start to reflect on things, reflect a lot of these results of events, right? (...) I think in those cases <u>if you get involved as I was involved there</u> (...) I think that <u>idea could be extended to the school</u>, bring the school closer within that proposal of that idea.</p>	<p>(1st idea) It was a space of the city hall equal to many others: in disregard, which had nothing, it was not even paved. E (2nd idea) He saw that they had already planted some trees there and decided to make a contribution by signing a petition that added more than 500 other signatures making the mayor appear one day in that square and then came the bioarchitecture project giving effect to the petition. D (3rd idea) It was a project that took into account the area, the staff that was already there, the future users of that space. It was not a project done inside a room. D (4th idea) The square was very beautiful, people enjoy it a lot, several people walking, taking the little dogs to walk, children playing in the square, all together having a recreation in the afternoon, on Saturday, Sunday. E (5th idea) A lot of things depend on money but there are other things that we need to be dedicated and go after. C (6th idea) This was a gift of joint effort. If the community participates it will be able to take care, it will be able to enjoy and pass this to the next generations. D (7th idea) The Brizola School, facing the square, also participated. That child who was ten is almost seventeen and aware of things, passes there today and must be looking with pride to have built the giant tortoise. D (8th idea) This was an experience that was registered in our mind, wonderful, of love, of great satisfaction, it is recommended that it be done, that all may experience this and that it may be part of our lives and our children's. C (9th idea) When you strive, something that was in disregard can be transformed. C (10th idea) Extend the proposal to bring the school closer, involve others as we have been involved. C</p>



**Fig. 4:** Discourse Analysis Tool 1 - DAT1 (The anchor column was suppressed here because it was not filled in this section. Source: Prepared by the author.

Finally, DAT2 (Discourse Analysis Tool 2) was used, as shown in Figures 5 and 6, for the construction of a DCS for each group identified in the previous step, represented by letters (A, B, C, etc.), using as many DAT2 as the number of clusters. Thus, all key expressions of the same grouping, for example, represented by the letter "A" of the DAT1, were copied to the "key expressions" column of the DAT2, constructing the DCS itself, obeying a classic schematization of the beginning, middle and end type, or from the more general to the less general and the more particular, providing cohesion and eliminating particularisms of sex, age, particular events, etc., following the methodology proposed by Lefevre and Lefevre (2005).

KEY EXPRESSIONS	DCS
<p>6 - J. - <i>It was not just a material and the physique that was the construction of a collective ... was not only my dream, it was everyone's dream, right? Joining with mine, and the moment the school started to see ... the people from the school doing the theater, do you remember? There was a lot of work with the kids in the school. You did not go there and make the square. No! There was a work, there was an awareness work inside the school, you did a play with the children, you took the actor there that went from classroom to classroom and talked with them raising awareness, then there was a pedagogical work too, the time the teachers began... The school community, let's put it this way, began to see that with other eyes, went from the crazy dream of J. to a crazy collective dream, you understand? There were more people involved, but for us, we still wanted more, we wanted the community, that community that was throwing the trash there, that buried the animals there, right? (...) but they had a lot of collaboration from the principal of the school (...) The students, they were from the moment that you took the people to work sustainability with them, that was being inserted in their daily school, they were very participatory, weren't they? They wrote the theater plays, the monologues (...) in the end everyone got involved, (...) the students that we took part in it are no longer those children or those adolescents of 12, 13, 14 years, no longer. They are already men, today, and women and the square is still there, have you stopped to think about it? (...) because it was not only important for us to clean that place, to leave a nice place for people to use, it was important for them, the only thing is that they did not have that awareness, and we somehow managed to make them aware ... it's no use just to put together projects and think - "No, we're going to make a viaduct here, let's make a square there, let's make a street, an alley", I don't know, as you say, we have to see which thing is really important to people, what they really need ... Persistence, caring, the way we treated people ... it brought together people with different professions, didn't it? (...) but people who had a common goal, and the same way of thinking, of dealing with patience, with affection ... Because the students themselves ... most of them don't live there, they were from others neighborhoods, (...) because there were few who were around, even those few helped, collaborated.</i></p> <p>7-Jo. - <i>And then Mr. E., ... there were already some trees planted ... He commented that that was an escape to relieve the "stress" of his work ... I said - "Well, I'm going to give my contribution to this from here (...). I expressed the interest of doing a petition ... but it was so fast ... I think it collected more than 500, enough, this is there in the City Hall, and then we waited, shouldn't we? (...) to our surprise ... the Mayor, ... one day he appears out of nowhere in that square, right? (...) he came, he said - "no, there is a project to pave here, to ply all around", which was not even paved ... we continued waiting ... then you guys came ... with that wonderful project that aggregated us, wasn't it? It was bioarchitecture, wasn't it? (...) and it was cool because you also consulted us, it was</i></p>	<p>The resident of the house facing the square had already planted some trees and commented that that was an escape to relieve the "stress" of his work. I said, "Well, I'll make my contribution to it from here, too." Since then, I was interested in making a petition. But it was so fast. I think it gave more than 500 signatures. It gave enough! It's right there in the city hall. So, we were just waiting, right?</p> <p>To our surprise, the Mayor, one day appears out of nowhere in that square, right? He came and said, "No, there's a project to put on, to ply everything around." We waited and waited.</p> <p>You came and with that wonderful project you aggregated us, didn't you? It was from bioarchitecture, wasn't he? And it was cool because you also consulted us, it was not a job that we come, let's do and goodbye! A project made inside the room. No! I noticed that it was a project that had the participation of all people, it learned there from the area and from the people who were already there, the residents' association that also approached, people from the surrounding area.</p> <p>Because it's no use just to set up projects and think - "No, we're going to make a viaduct here, we're going to make a square there, let's make a street, na alley", I don't know, as you say, we have to see what is really important to people, what they really need.</p> <p>We wanted that community that dumped the garbage there, buried the animals there, didn't we?</p> <p>Because it was not only important for us to clean that place, to leave a nice place for people to use. It was important to them, but they didn't have that awareness, and we somehow managed to make them aware</p> <p>It was not only the material, the physical, it was the construction of a collective. It was not just my dream, it was your dream, wasn't it? joining with mine.</p> <p>So you put together several people with different professions, didn't you? But people who had a common goal, and the same way of thinking, of dealing with patience, persistence, tenderness, the way we treated people. We visited from house to house to hear, "What if there was a square there, what do you think it could be? Is it interesting to have a square here?"</p> <p>And at the same time, people started to go there, even with those rubbish things, people sometimes stopped to observe, so they participated in the process since the waste was removed. It was very gratifying.</p> <p>It was also nice that the school was participating. The family school, which opened the space, I remember, right? It was very good the little people there from the Brizola School, which faced the lot. Those teenagers 12, 13, 14, are already men and women today, and the square is still there, have you stopped to think about it? That child who was there at the age of ten is almost</p>

**Fig. 5:** DAT2 - MAIN IDEA D - "Everyone participated in it in some way, the result of a joint effort, generating a gift that receive." Praça Cultura Viva" Project - Praça Val Rai - Question 2: "How did you like the experience? Has it brought you ... Which ones?"

Source: Prepared by the author.

KEY EXPRESSIONS	DCS
<p><i>not a project done inside a room, I noticed that it was a project that had already learned about the area and people who were already active there that had contact with E., at the Brizola School, the school facing the square (...) that child who went there at age ten is almost seventeen years old, that is already aware, you're already aware of things, right? So he goes over there today and must be looking at it with pride, right? Say, "Wow, I had my hands on the construction of that tortoise over there," because there's a giant tortoise there, so I guess that's it, I think those things are the things we have to value, keep giving value, because it is the community that will be able to take care of this, will be able to use it, right? And pass it on to the next generations.</i></p> <p><i>9 - Re. - Because it was not a job where we come, let's do this and bye! No! It was a job that it had to have the participation of all people. (...) we visited from house to house to hear, "and what if there was a square there, how do you think it could be like? Is it interesting to have a square here?" (...) and at the same time, when we started our work, people started to go there, even while it had a lot of rubble, people sometimes stopped to observe us, so they participated in the process since the withdrawal of the garbage there. So it was very gratifying ... as an experience even because we met other people, the association of residents that also approached, people there, the school we also participated in the family school, which opened the space, because the school is across the square, so the school also won this gift.</i></p>	<p>seventeen already, is aware of things, right? They go through there and must be looking at it with pride, right? Talk - "I put my hands on the construction of that tortoise," because there's the giant tortoise there.</p> <p>There was a lot of awareness work with the children inside the school, a pedagogical work as well, being inserted into their daily school life.</p> <p>There was a lot of collaboration from the direction of the school and the students were mobilized from the moment you took the people to work sustainability with them, the actor went from room to room and talked, you guys wrote the theater plays, the monologues, in the end everyone got involved. They were very participative, weren't they? Even with the majority of the students living in other neighborhoods, they helped, collaborated.</p> <p>It was the time that the teachers, the school community began, let's put it this way, to see it with different eyes. There were more people involved, it happened to be a crazy collective dream, you know? The school also won this gift.</p> <p>So I guess that's it. I think these things that these are the things we have to value, continue giving value and make the community participate because it will be able to take care of it, it will be able to enjoy it, right? And pass on generations.</p> <p>At that moment, we realized that, somehow, it had happened, it gave us our petition effect. I think it was a gift of joint effort that we all reap.</p>

**Fig. 6:** Continuation - DAT2- MAIN IDEIA D -"Everyone participated in it in some way, the result of a joint effort, gener everyone could receive." Praça Cultura Viva" Project - Praça Val Rai - Question 2: "How did you like the experience? Did reflexions? Which ones?" Source: Prepared by the author.

## 8 Landscape reading

For the reading of the experiences it is essential that one takes into account the reading of the landscape. The concept of landscape permeates several fields of knowledge, including non-formal knowledge and knowledge of traditional populations, assuming different meanings, depending on the area of knowledge, author and research focus. It is object of study of several areas of knowledge and when assuming an interdisciplinary character, its meaning has changed in the scope of the paradigms that have been imposed in the scientific context.

In this sense, Sandeville Junior (2005) concludes that the "landscape, more than space observed, is space experienced, the sensitivity of people with their surroundings," a space that goes beyond observation, constituted from experiences, senses and shared experiences, and thought "as a vast field of social meanings, tensions and contradictions" (Sandeville Junior, 2005, p.53, our translation). The landscape is like "a human text to be deciphered", a "hidden thought", a "place of memory", a "point of view", according to Besse (2014, pp.21-22), besides being a "way of thinking and perceiving "the human being, being seen as an interpretation, a reading, a language, a cultural appropriation of the world by the individual or collective subject.

The landscape tells us about men, their points of view and their values, and not exactly the outside world. In reality, there would only be interior landscapes, even if this interiority is translated and inscribed "in the exterior", in the world (Besse, 2014, p13, our translation).

Besse (2006) defines the landscape as a cultural representation, as a point of view, a way of thinking and perceiving, a dimension of life. In this way, it is understood that the landscape does not exist either objectively or in itself, but rather through "an interpretation", "a reading", demanding the study of a form of thought and subjective perception, informed by cultural codes, returning it to an earlier state (the landscape itself) to discover its reasons for being, in culture and in social life (Besse, 2006).

Thus, it is understood that the reading of the landscape for one person cannot be the same for the other, when realizing that two people cannot have identical experiences of life, subjective and synaesthetic perceptions throughout their lives. In this way, different readings of the landscape can be obtained for the same place in the same space and time, depending on who reads it and experiences it.

## 9 Results

The presentation of the results (DCSs) was the presentation of synthesis tables with the main ideas for the analysis of each question, as presented in Figure 7.

QUESTION 2 - HOW DID YOU LIKE THE EXPERIENCE/VIVENCIA? DID IT BRING YOU ANY REFLECTIONS? WHICH ONES?	
Main Ideas	It brought a reflection on the bioconstruction itself.
	It generated a reflection on the public space, a sense of identity with the place by the surrounding population, transforming a devalued space into a place of living culture.
	The experiences of bioconstruction have brought a new experience of personal and professional growth, recommended for other people and groups.
	Everyone participated in it in some way, the result of a joint effort, generating a gift that everyone could receive.
	In the beginning, it was a heap of rubble, just a space equal to the others, in disregard and after the square came to fruition, the staff began to frequent it with the family.

**Fig. 7:** Main ideas, question 2 - "Praça Cultura Viva" Project – Praça Val Rai. Source: Prepared by the author

A paragraph for each summary table was written with the main ideas of each question to facilitate the understanding of the results obtained, as follows:

At first, the place was a heap of rubble, just a space like many others, in disregard. The experiences of bio-construction have brought a new experience of **personal and professional growth**, recommended for other people and groups. **Everyone participated in it** in some way, the **result of a joint effort**, generating a gift that everyone could receive. This provided a **reflection on the public space** and on the **bioconstruction itself**, a sense of **identity with the local** by the surrounding population (Amaro, 2017, p.79, our translation).

## 10 Final comments

Overcoming the impacts that the current model of society imposes on the environment requires facing major challenges related to its sustainability, especially in cities where the majority of the population lives. During the construction and development of the research it was verified the importance of the participation of everyone involved so that joint efforts could reverse this scenario, maintaining or creating the identity with the locality, affectivity, and cultural richness through actors and not only spectators of this process.

In this way, the PAR / VCP methodology was used for the development of the bio-construction experiences, and the DCS method was used for reading of the landscape of the object of study (bioconstruction experiences) from the perspective of its participants so that the objective of the research could be achieved. The results revealed, in a systematic, clear and concise way, the events in general, reflections, changes and important moments about the events, revealing the landscape reading not only of an interviewee but of every one of them. The data collecting and processing method proposed by the DCS is important not only for evaluation, but also for the generation of data on participatory actions, based on matrices, diverse among themselves, urban scales, type of social organization and work, degrees of participation, age, sex, schooling and life experiences, bringing a wealth of details in the speeches.

Through the DCS method it was possible to capture, decode and present through the Discourse of the Collective Subject the actions, interventions and experiences of bioconstruction. When acting, the landscape changes, and in the case of the experiences studied, this happens through the PAR / VPA methodology.

In this sense, the concepts of permaculture and bioconstruction used in the experiences presented a way of doing architecture, urbanism and landscaping, aiming at a more integrated intervention with nature, with the least possible impact, in which the activities and techniques employed are based on the reflection on the use of materials and how they are reinserted into their cycle, resuming the movement, shifting from a perspective of garbage and scarcity to a perspective of reinsertion into a cycle and abundance.

The combination of complementary methods such as the PAR/VPC and the DCS used for the occurrence and data treatment of the bioconstruction experiences, pointed to the importance of "**parti.cipate+co.laborate**" in contemporary processes of collective construction of knowledge in different areas, practices and theoretical approaches through transdisciplinary, multicultural actions involving non-academic actors and communities and generated, in the cases studied, reflection and awareness about the participatory, collective and environmental issues addressed and worked out, understanding that several other issues could be worked out with this combination of methodologies and with differentiated approaches to participatory and collaborative case studies.

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