Project-based learning: Design labs in afterschool

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ABSTRACT
This article aims to present teaching practices from Design as a curricular tool that is part of the school shift. These teaching practices have as a method the Learning Based on Projects of Active and Active Learning Tools that use the Student. The context of the research application took place in a public elementary school of the state network in the city of Porto Alegre/RS. The theoretical path was based on the studies of Fontoura (2002), Bender (2014), Bacich and Moran (2018), as well as the concept of participatory design by Sanders and Stappers (2008). It presents main activities developed and in the installed Design studies, being Graphic Design, Design for Permaculture of Product Project and counts on the school of students' experiences, in these practices. A conclusion aimed at teachers who make use of design skills as instruments of education. Furthermore, it is corroborated by studies such as that of Fontoura (2002) that point out as possibilities of design to break out of academia and the formal job market and reach educational environments.

Keywords: Project Based Learning, Design, Afterschool.

1 INTRODUCTION

Within Freire's inspiring perspectives, loving-kindness materializes in relationships that prioritize polyphonic learning, supported by mutual respect, in which the construction of knowledge and culture are connected with values supported by welcoming.

Starting from the idea that it is in everyday life that the subtleties of life happen, we choose this space/time to perceive the world and its complexity. Paraphrasing Alves et al. (1998) seek to understand, in a different way from the learned, the activities of everyday school or common daily life, requires that we are willing to see beyond what others have seen and much more: that we are able to immerse ourselves entirely in a given reality seeking references of sounds, being able to swallow feeling varieties of tastes, walk touching things and people and letting yourself be touched by them, smelling the smells that reality is putting at each point of the daily path.

Seeking to understand the reality of everyday life in the school environment and new possibilities for the "use" of Design, this article begins. The objective of this research was to understand how students perceived learning from the design process experienced through Design laboratories inserted in the school routine. With this, we present some reflections on the possibilities of

implementing Design laboratories as tools in the elaboration of educational projects aimed at Elementary School II.

We believe that Design can assume responsibilities consistent with the school reality, discussing issues such as accessibility, income generation and stimulation of local culture from the graphic and material language in the urban fabric.

For Bonsiepe (2011) Design can present a humanist perspective since it assumes the exercise of design capacities capable of interpreting the needs of social groups and elaborating viable, emancipatory proposals, in the form of instrumental artifacts and semiotic artifacts. Design thus goes beyond the condition of an aesthetic and functional tool in the creation of products and services to gain potential for individual and social development.

Going to meet these possibilities Bonsiepe (2012) emphasizes: it is necessary to practice the "pedagogy of project". This was a personal conviction of the author about the benefits that the knowledge of Design can bring to a general formation.

This article aims to understand the applicability of the methodology of Project-Based Learning (PBL) in the Design laboratories inserted in elementary school II. The students had the opportunity to participate for ten months in three Design laboratories implemented in the school countershift. In these laboratories were developed projects oriented to Product Design, Graphic Design and Design for the

Permaculture. The collaborative spaces aimed at the transposition of the teaching of Design from higher education to elementary school, seeking language adequacy, implementation of the methodology and review of the research problems suggested by the students. The theoretical support was based on the reading of several authors, indispensable for the understanding of the themes addressed and the construction of a scientific approach.

The research that originated this article was submitted to the Ethics and Research Committee of the Federal University of Rio Grande do Sul, being approved in all the documentation presented, including the presentation of the Term of Free and Informed Consent to the parents and guardians of the students and Term of Assent to the students.

2 ACTIVE LEARNING METHODOLOGIES: FROM STUDENT AUTONOMY TO PARTICIPATORY DESIGN

We have learned since we were born from concrete situations that little by little we can expand and generalize through induction. We also learn from ideas and theories to test them later in the concrete world, from deduction. Learning can also occur when someone more experienced speaks to us, or even when there is a direct development by experimentation from questions, research, activities and projects. What we mean by this is that learning is active, from the context in which each person finds themselves (BACICH and MORAN, 2018).

To elaborate any reflection about the autonomy of the student in educational environments we will consider as the first aspect the current model of education in Brazil, a reflection of the era in which it was conceived: the industrial revolution. In this model students are educated as on an assembly line, to make standardized education efficient. In this way they sit in rows of neat wallets, listen to an "expert" in the exposition of a topic and still need to remember the information received to respond to evaluative tests. In this environment and educational model all students should receive the same education. The weakness of the traditional method is that not all students come to the classroom prepared to learn. Some lack adequate training regarding the material, have no interest in the subject or simply do not feel motivated by the current educational model (BERGMANN, SANS, 2016. p. 6).

Parallel to the "industrial" model of teaching, what is seen in Brazil over the years is a constant deterioration of the working conditions of educators and, consequently, of the teaching offered, especially in public schools. For many decades there has been a favorable discourse in relation to the valorization of education, however, as Gadotti & Romão (2004) points out, what is seen in practice is a series of questions about the management of resources and the lack of community participation in the definition of school priorities.

For Gadotti & Romão (2004) the paradigmatic crisis reaches the school and it asks itself about itself, about its role as an institution in a postmodern and post-industrial society, characterized by the globalization of the economy, communications, education and culture, by political pluralism, by the emergence of local power. In this society there is a growing demand for participation and autonomy against all forms of uniformity and the desire to affirm the uniqueness of each region, each language, etc. How to translate this in school?

It is the teacher's duty or, more broadly, the school, not only to respect the knowledge with which the students, especially those from the popular classes, come to it – knowledge socially constructed in community practice – but also, as I have been suggesting for more than thirty years, to discuss with the students the raison d'être of some of this knowledge in relation to the teaching of the contents. Why not take advantage of the experience that students have of living in areas of the city neglected by the government to discuss, for example, the pollution of streams and streams and the low levels of well-being of the populations, the dumps and the risks they offer to people's health. Why aren't there dumps in the heart of the rich and even purely remedied neighborhoods of urban centers? This question is considered in itself demagogic and reveals the ill will of those who ask it. It is a subversive question, say certain defenders of democracy (FREIRE, 1987, p.16).

From these attentive looks at the way of learning, in contrast to passivity in learning, active methodologies and hybrid learning gain space in research and application in classrooms (BACICH and MORAN, 2018).

The active methodologies emphasize the protagonist role of the student, his direct, participatory and reflective involvement in all stages of the process, experimenting, drawing, creating, with guidance from the teacher; hybrid learning highlights the flexibility, mixing and sharing of spaces, times, activities, materials, techniques and technologies that make up this active process (BACICH and MORAN, 2018, p. 48)

In addition to the appropriate use of active methodologies for learning, the preparation of school environments for the use of children and adolescents are also capable of generating autonomy, since the student is able to access materials and take responsibility for educational spaces together with educators. For there to be this accountability, the spaces must be adequate, respecting ergonomic issues inherent to the age of the users.

Another important aspect for autonomy in school is the possibility of including diverse materials in learning. Leaving the place of the same daily classroom practices and perceiving materials that can be reused can be a power in experiments and educational practices.

With these examples, one can raise a question: what relationships do these active methodologies have with Design processes? It is believed in the importance of the participation of the subject in the construction of environments for its use, whether physical or intellectual uses, especially in the context of the child and educational spaces. Thus, active teaching and autonomous learning are articulated with Participatory Design, since the potential of action in both spheres imprints a change from passive relationship to engagement in experiences that are meaningful.

As in the active learning methodologies, Participatory Design has a less hierarchical and centralized focus for the development of projects. Within the new perspectives of the Design process co-creation also emerges as a new proposal, in this area the emphasis is on the customization of products and services that includes the active participation of the client. These are involved in the generation of ideas and decision-making pertinent to Design (SANDERS AND STAPPERS, 2008, p. 8).

In practice, we see industrial designers with many years of experience in product development who are taking on new roles as design researchers. Joint project teams will be much more diverse than they are today. The future Codesign will be close collaboration between all stakeholders in the Design development process, along with a variety of professionals with hybrid design/research skills. These team participants will vary in several types of culture simultaneously: disciplinary culture, company culture, ethnic culture, worldview, mindset, etc.

It is believed, with this, that designers will be an integral part of the creation and exploration of new tools and methods for the generative thinking of Design, and useful also in learning processes carried out in formal education. In the future, it will be these professionals who will create the tools for non-designers to be able to express themselves creatively.

3 DESIGN METHODOLOGY FOR LEARNING FROM DESIGN

In this research the pedagogical potential of Design is explored through the crossing of information between design practices for pedagogical instrumentalization and practices that have in view the resolution of everyday problems, inherent to Design. Believing in the pedagogical potential of Design is possible since previous experiences have followed similar paths. The experience of EdaDe – Education of young people and children through Design, elaborated by Fontoura (2002) in Florianópolis (SC), gives us significant support in conducting this project. For this author teaching with Design as a tool allows, among other things, to develop in children skills applicable to the real world, such as critical and creative thinking; sensitivity; problem solving; measurement; written, verbal and graphic communication; negotiation and conflict resolution; leadership and group work, in addition to creating opportunities for building new knowledge and understanding; as well as teaching thematically and making use of an interdisciplinary pedagogical approach.

As a methodological guideline adopted in this research, Project-Based Learning (PBL) developed by Bender (2014) was used, as can be seen in Figure 1.

Figure 1: Synthesis of the Project-Based Learning (PBL) method

Source: Bender (2014)

The following are the main steps of the PBL methodology:

• Project anchor

Typically, some kind of anchor is used to introduce a project and to let students get interested in the topic. Anchors can be simple narratives that describe a problem or a project to consider, or something more engaging, such as excerpts from a book or video.

• Driving Question

The driving issue is the main focus of the PBL experience. It can be developed in advance by the teacher or can be carried out from teams of students developing these questions as part of the project. In conjunction with the anchor, the driving question should both arouse

students' attention and focus their efforts on the specific information they need to address the problem.

- Student Voice and Choice

When students are engaged in a learning experience of this nature, they are much more likely to actively participate in all phases of the learning process if they have considerable discretion over which issues will be addressed and which activities will be undertaken.

- Research

Teachers use a wide variety of teaching procedures in the research phase or stage. Some of these procedures are structured teaching from videos, labs and demonstrations, learning by observation, semantic maps, guest speakers, peer reviews, group discussions, journaling and thoughts out loud.

- Innovation

Taking on the role of facilitator, teachers should use all available means to stimulate inquiry and reward innovative thinking as students advance in their planning, research, and development of artifacts.

- Teamwork

Knowing how to work collectively in problem solving is, in many ways, one of the most important skills that any young person can develop, since it is a crucial skill for virtually all jobs of the twenty-first century. As students gain experience in teaching at PBL, they also become more experienced in group work, as they are accustomed to planning activities together, specifying roles for various group members, supporting each other's ideas, and offering each other appropriate and useful peer assessments.

- Reflection

Reflection on one's own work is a powerful tool for improvement, and for this reason, creating opportunities for students' reflection within the PBL experience is something emphasized by virtually all proponents of the teaching model. Reflective thinking prepares students to more actively develop skills of this type of thinking and thus approach problems in innovative ways.

- Feedback and review

Feedback can be based on teacher assessments, self-assessment, or peer evaluations. As students mature, the importance of self-assessments and peer assessments increases, as these skills are likely to be necessary for many students' vocational future.

- Public presentations of project results

The presentation of the work developed in the classroom to other people in the community is a way to show the value of this work. Perhaps this is the main reason why student engagement tends to be much higher in PBL learning experiences.

In the research that originated this article there was the option to incorporate Design as an extracurricular discipline, offered in the school countershift, in a model conceived and developed in such a way that there is integration of contents and simultaneous dialogue between the activities of the curricular disciplines. In addition, Design has also been incorporated as a method of design development in all disciplines, from a structuring of problem-based activities. With this the Design process is instructed from specific attributions of the area, and as a method of design organization, simultaneously (figure 2).

Figure 2: Model for inclusion of Design as a teaching tool
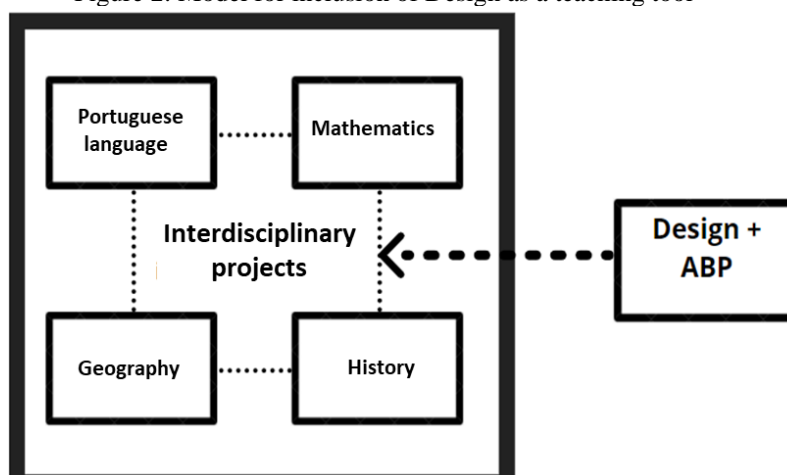
In the structure of this project there are three distinct roles for the realization and orientation of the activities towards the students, they are the articulators, mediators and facilitators. The team members (mediators and facilitators) are students and professionals from areas of knowledge such as product design, graphic design, visual arts and environmental engineering. The articulators are always school employees interested in maintaining a link with the Pedagogical Political Project.

The structuring and organization of the activities was under the responsibility and supervision of the author of this article, as well as the presentation of the research method to the project team.

Figure 3: Project Team Structure
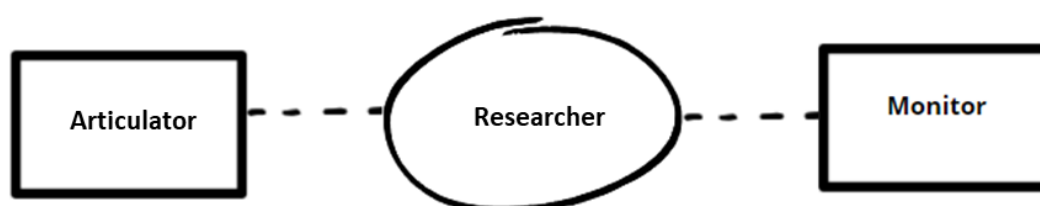
The establishment of the target audience involved in this research was based on the fulfillment of some requirements such as: students at risk and social vulnerability; in distortion with age/school year; with incomplete literacy; repeating students; in a situation of nutritional risk. It was also predicted that the groups would be heterogeneous, in order to enable peer learning. This meant that students were also selected who were not necessarily in any of the above groups, but who showed interest in participating in the proposed activities and spending more time in school. Thus, one hundred students who showed interest in adherence, and who were inserted in the defined groups, were invited to participate in the project.

4 FINDINGS

The arrival of the research group and the first months of work at the school brought to the researcher and the monitors objective issues such as the organization of activities from weekly meetings, creation of a conversation group and exchange of files in social network, in addition to the joint study of the teaching plans of the 6th to 9th grade.

Subjective issues also arose along this journey, we pointed out some: the formation of group consciousness between researchers and students represented a circumstance to be transposed at the beginning of the project. At the same time that the young people showed interest and motivation for the project, they also expressed some discomfort in sharing "territory" and routine with the group of new monitors. There was, during practically the entire year of the project, the attempt to suppress manifestations of violence by the monitors among the students – the aggressive and sexualized behavior was often naturalized among the students.

For the planning of the activities, it was reflected on the role of the educator in the project and in the resolution of unstructured problems from the Design approach. Having as guiding methodology the Project-Based Learning, the activities were defined after a period of experiences with the students to understand what sharpened the curiosity of the children. From the verified interests, the project team began to delineate, weekly, ways to interact with the knowledge, materials and technological tools that were pointed out as the focus of interest by the students.

The non-preliminary structuring of the project, with delimitation of themes and tools, has always been part of the team's purpose. The intention was to construct driving questions spontaneously, from the students' own learning interests with a focus on problems and real-world issues, exactly as Bender (2014) proposes for the conceptualization of Project-Based Learning.

The team of monitors and facilitators, occupying a place of observation and listening, invited the students to dialogue on various themes, tours of the school and surroundings, with a look directed to the resolution of problems from the Design.

After the development of the anchor question, mediators and facilitators drew together a roadmap for the execution of the activities with pre-defined goals from the planning of the methods and techniques to achieve each objective.

It is presented in Figure 3 the planning of the pedagogical actions of this work and the compilation of significant actions both for the resignification of the spaces of the school from that of Graphic Design, Design for Permaculture and Product Design.

Figure 3: Development of Design activities

Source: Author of the article

4.1 PERMACULTURE DESIGN LAB

The Design for Permaculture laboratory aimed to propose reflections and practices that sought to address education through permaculture and social protagonism. Activities of walks in the forest

surrounding the school, collection and construction of a seed bank, construction of composting units and restoration of the land in the space of the old school playground for the preparation and management of the school garden were proposed.

The school garden was born from a joint project, from reflections of the students in conversation circles, in the walks through the forest surrounding the school and in the classroom. The project consisted of presenting the benefits of the initiative to the school community, as well as verifying the technical feasibility for this task from the acquisition of materials and inputs. After the approval of the project, the team chose the location of the garden and the area to be used for planting. Some elements were considered for the realization of this choice, thus, we thought of a nearby water source, sun exposure, evaluation and optimization of the soil, and, finally, request in the school community some seeds to be planted to optimize the school menu.

It was decided that melons, strawberries, corn, cucumbers, black-eyed peas, black beans and radish would be planted. The space of each bed was defined and the maximum dimensions of each species were studied, as well as the main characteristics of each one regarding the care necessary for its maintenance. Before the cultivation were carried out tests for the verification of the soil, in addition, the students were performing the fertilization from the development of efficient microorganisms, bacteria, fungi and yeasts that exert the decomposition of the organic matter, increasing the fertility of the land. Figure 4 (A) shows the students fertilizing the garden, installing signs figure 4 (B), and executing the beds, figure 4 (C, D).

The school garden began to bear fruit six months after planting. Already in the first harvest the food was directed to the school canteen and incorporated into the diet of the students.

Figure 4: Development of activities in the Permaculture Design Laboratory

(A) Students sowing the garden. (B) Development of signage for the garden. (C) Creation of flowerbeds. (D) Students building the flowerbeds

4.2 GRAPHIC DESIGN LABORATORY

In this project we sought an adaptation of the academic teaching of Design for the teaching of children and young people. In this way fundamental issues to Graphic Design were worked in the final years of elementary school, such as initiation to color theory, graphic expression through drawings, illustrations, types of strokes, exercises to stimulate creativity and introduction to photography. The monitors brought questions about cultural identity and the basic premises for the execution of a graphic project.

As an activity selected for presentation in this work we show here the graphic revitalization of the wall of the school cafeteria. This space is located in a place of constant circulation, characterized by old artistic manifestations of students who once occupied that place. Thus, the paint was quite worn, the humidity of the environment was also in charge of making its own illustrations, and, in addition, the overlapping of old graffiti damaged the notion of belonging of the students who are now in the school.

At first, brainstorming was carried out in the classroom so that the students could graphically manifest what they would like to illustrate on the wall, as can be seen in Figure 5 (A). After this activity the group came up with a concept for the characterization of the space. Thus, it was defined that there would be inscribed images and texts that characterized the daily life of the students. All the themes worked on in the Laboratories served as inspiration at this time. Thus, Permaculture, resignification of spaces, art, Design, gender, race, urban violence, moral harassment were some of the issues that were present in the great "Mural of Our Daily Life" title of this project.

The word "Google", for example, occupied a prominent position in the design of the wall, was inscribed centered, it is seen in figure 5(B). For most of the students of this project access to technology is still quite scarce, few students had, at other times than in the project, the opportunity to carry out any type of research on the internet, one sees the fascination provoked after this contact.

The words "Nêgo" and "Favela", figure 5 (C) were also chosen by the group to adorn the wall. This choice refers to issues such as honor and pride in relation to skin color and place of origin, and more, concerns the unity of struggle against racism and the right to life, ensuring the maxim that reverberated in the project - representativeness matters!

After the preparation of the space, the students were able to experience the awaited moment of performing their graphic expressions on the wall. For a week all the laboratories gave way to this activity.

Figure 5: Development activities Graphic Design Laboratory

(A) Illustrations worked in collective brainstorming. (B) Beginning of the illustrations on the wall. (C) Students finishing their work

4.3 PRODUCT DESIGN LABORATORY

In the Product Design Laboratory there was a concern to explore with the students practices anchored in problem solving, going through the design phases characteristic of Design, such as: acquisition of information, search and definition of concepts, morphological, aesthetic, technical and structural detailing, production and post-production of product.

Thus, after the subjects that should guide the progress of the Laboratory, the group defined that it would carry out an investigation about the spatial problems of the school (figure 6). For two weeks the classes, divided into project teams, took notes, recorded images and some verbalizations with the users – colleagues and themselves – about the use of the school spaces and the problems related to the lack, accessibility and safety and comfort found in these places.

Figure 6: Development of activities in the Product Design Laboratory
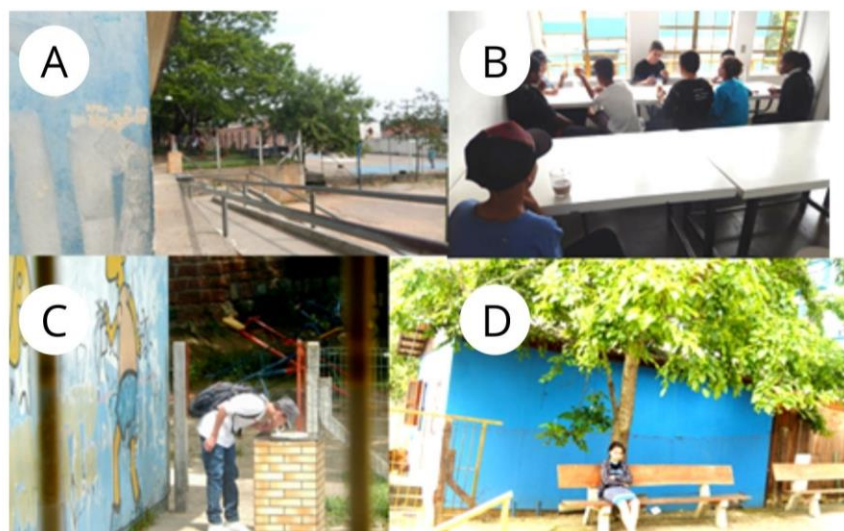
(A) Ramp access to the courtyard. (B) School cafeteria. (C/D) Common spaces

With the awareness of the comfort, well-being and safety to which the students were or (were not) exposed daily, the project problem was defined: to develop a living area in the space commonly known by everyone in the school as "Dirty Corner" (figure 7). This place, located in a recess in the

courtyard, was used by the school management for a long time as an open-air warehouse, where classes, chairs and all kinds of material that could be reused were being thrown.

Figure 7: Choice of the place to be restored, the "dirty corner"

The students designed and described alternatives to improve the chosen space, so, after the diagnosis of the environment and possible improvements, a compilation of actions was organized by the group. Models were developed to assist in the visualization and understanding of the concept of scale from the aid of mathematics classes (figure 8).

Figure 8: Development of models from the project definition

(A) Student developing model. (B) Group assembling elements in the model

The development of the furniture was carried out by the students in partnership with the Product Design monitors who carried out the processes of wood cutting, sanding of the pieces, fixations from fittings, collages and painting (figure 9).

Figure 9: Furniture development
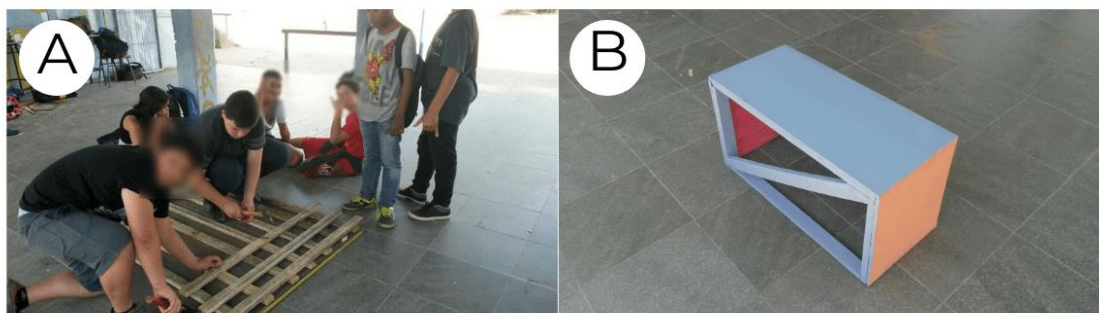
(A) Students producing elements for the designed space. (B) Student produced stool

In line with the assembly of the furniture, another group of students was responsible for preparing the area of the new space (figure 10).

Figure 10: Group preparing the space, with cleaning, sanding and painting of walls

(A) Students preparing paint (B) Student painting the walls

The "new corner" as soon as it was finished generated commotion and pride in the group of students, who can present the new space to the school community, and enjoy it for a few days. Figure 11 shows the result of the resignified space.

Figure 11: Space produced by students

5 DATA GENERATION

After seven months of project and research activities installed in the State School of Elementary Education, it was necessary to give voice to the students in relation to the educational path experienced. Fifty students (twenty-five girls and twenty-five boys), among the one hundred enrolled in the after-school activities, were invited to compose the focus group, all enrolled between the 6th and 9th grade of elementary school.

The choice of the participants of the focus group was carried out aiming to form a heterogeneous group, representative of the enrollees, where gender, race and diverse economic situations were contemplated. The students were given a questionnaire (chart 1) with the questions and alternatives for answers, in addition to the possibility of describing answers that diverged from those presented.

One can verify issues such as repetition rates, plans for the future, relationship with colleagues and rules of coexistence stipulated by the project monitors.

Still about the laboratories and direction of this research some inquiries about Design for Permaculture, Graphic Design and Product Design were carried out, as well as the perception of the participation of students in the activities in the school countershift.

Table 1: Questionnaire for quantitative research

Questionnaire for quantitative research
1 - Have you ever repeated any school year?
2 - In which year/series did the repetition occur?
3 - Why do you think this repetition occurred?
4 - What are your plans for when you finish elementary school
5 - In relation to our project, how did you perceive the relationships between colleagues?
6 - What about the relationship between students and teachers?
7 - How were your impressions about the rules of coexistence?
8 - Regarding the laboratories presented in this project, which did you most identify with?
9- What do you mean by Design for Permaculture?
10 – What do you understand by Graphic Design?
11 – What do you mean by Product Design
12- What do I consider most important in relation to the project activities in the school countershift?

The use of this instrument proved to be useful since it brought tangible answers about important characteristics of the target audience of the research. Issues such as school failure and its causes were evidenced from the students' point of view, in addition to the plans for the future. Aspects related to the understanding of Design and its applications were also put on the agenda. We know with this instrument new nuances of the students involved in the research, and we value these results for decision-making in modeling future research. In addition, we can understand some behaviors during the learning process, thus improving our daily listening, reflecting on the possibilities of continuous improvement in the school environment.

6 DISCUSSION OF RESULTS

The results showed that the number of non-repeating students was higher among the students enrolled in the project. We saw that 36% of the students who responded never repeated the year. Still, a sizable portion had repeated the year at another school and migrated to that institution. Among the respondents, 30% repeated the year once, and 34% students repeated the year more than once.

When investigated in which year the students had repeated, it was noticed an increase from the 3rd year of elementary school, among those who repeated some year 16% did so in the 3rd year of elementary school. There were similar results among the repeaters for the 5th and 6th grades, and for

the 7th and 8th grades of elementary school. Among the repeaters, 26% repeated between the 5th and 6th years, and another 26% repeated between the 7th and 8th years.

The reasons for failures, according to the students, are mainly related to family problems, with 30% of the answers, followed by the lack of understanding of the explanations, attribute this factor to the lack of adequate explanations on the part of the teachers (20% of the answers). The lack of organization in relation to the study routine itself was also pointed out as one of the reasons for the failures, with 12% of the answers.

When asked what the students' plans would be for when they finish elementary school, the vast majority of students reported that they intend to study and work (20% of the answers), while 18% of students admitted that they intend only to work.

The students answered about their relationship with their peers. Of the respondents, 30% stated that the level of relationship with their peers is "bad". For 25% of the students, however, living with their colleagues is considered good. It is seen in this question the reflections of the violence commonly felt by students at school, manifested in various ways among all those involved in the educational process. On the other hand, it is perceived the importance of the school for the formation of affective bonds and its importance for the development of the emotional intelligence of the students.

The student-teacher relationships are presented according to the duality – love x hate – typical of these relationships on the students' gaze. Among the students who answered this survey, 27% consider the relationship with teachers as "good". Among those who consider this relationship as "very bad" are 24% of respondents. The web of feelings, emotions and subjectivities that involve the relationship between teacher and student can determine the quality of schooling and the learning process. Paradoxically, however, it is not always easy to bring this perception to light, which can transform the affective aspect according to some absences experienced by young people, such as the lack of other spaces of conviviality, absent parents. The lack of bond with the teacher can, however, lead to violence, indiscipline, demotivation and difficulty in maintaining attention. In this aspect, we see the challenges to transform a rational school into an affective school

The rules of coexistence were judged as "reasonable" – 33%, "good" – 25%, and "very bad" – 17%. They considered in this topic that the teachers and the coordination are firm when necessary and enforce issues related to respect and order.

The students also left their impressions about the Permaculture Design Lab. Among the alternatives presented, 28.8% of the respondents believe that Permaculture is about "knowing the natural species and adapted to the conditions of the soil and the surrounding climate". For 25.4% of the students, Permaculture is about "studying ways to conserve and expand the biodiversity of the ecosystem of which I am a part." Still, 22% said that this area of knowledge deals with the care of the living conditions of the soil and help with the maintenance of its soil fertility. In a smaller number,

20.3% said that Permaculture refers to a sustainable production of crops without using chemical inputs, and finally, in a small way, 3.5% of respondents said that the discipline is about the use of the environment for their own benefit.

Regarding what the students understood about Graphic Design, the alternatives expressed were very concentrated between "translating ideas with written messages and forms" and "organizing my ideas (drawings, paintings, texts) from a survey, and thinking of ways to communicate it", with 28.3% and 26.7% of the responses, respectively. Still, learning exclusively to draw and write in different spaces received 18.3% of the answers, followed by the use of computer programs, with 15% of the answers and "draw what comes to mind", with 11.7%. As the answers could be combined we realized that there was the internalization by the students of the possibilities of Graphic Design, as well as the breadth of this design area.

Questions pertaining to the Product Design Lab were also conducted. Asked what they meant by Product Design, 25.8% of respondents said they understand it to be about creating products from the disposal of materials. Still 22.6% of the students said they understand the design of products as the observation of users, research for similar products, sketching of alternatives, planning, production and use of discarded products. Still, another 22.6% said that designing products concerns the analysis of the different people who occupy the places and their needs to stay comfortably and safely. A smaller group, 21% of respondents, say that Product Design is responsible for conducting tests and adjustments on existing products to discover the possibility of improvements in new products. Still, the alternative with less adherence concerns the creation of beautiful products, with the aesthetic issue as the main focus, among all 8.1% chose this alternative.

Finally, in this data collection instrument, we asked the question "What do I consider most important in relation to the project activities in the school countershift? Among the participants 28.8% said they learned to structure projects, 25.4% of respondents said they learned new things, for 22% of students the social ties developed were important because they said that the most important thing was to meet new friends. There were also those who found the activities tiring and boring, 15.3% said they found it tiring and make better use of the shift outside of school, while 8.5% said the experience was boring and would not participate again.

7 FINAL CONSIDERATIONS

The designer, in the words of Margolin (2006) is not only a citizen, he is also a collaborator responsible for the future paths of his society. Freire (2000) in his reflective incursions declared that for him it was not enough to have consciousness, but to produce awareness, and this means to go beyond the spontaneous vision of reality and experience a critical exercise of the same reality, demanding, with this, a position and action.

In the first investigations of the research group at the school, what was sought was the understanding of that context. The multiple realities that involve a primary and elementary school (approximately 800 students enrolled), in a peripheral region of the city, lacking in human, social and economic resources. The designer is responsible for reflecting on his practice, for this he seeks answers to the understanding of the "other" – other, this, different from our cultural parameters, fixed, above all, to the academy and the labor market. At this point in the project there is a displacement towards the universe of others.

The presentation of the craft of Design needs to be translated into an accessible language, valuing above all the culture of people's daily lives, of popular manifestations, of the segments pulverized in society as integral parts of the social construction. In that context – needy children, susceptible in all sorts of ways – "Design" is probably just a pretty word. It is necessary to build a revaluation of the popular, opening new horizons for the communication of material and symbolic activities.

The knowledge of reality, slang, greetings, the resignification of fashion, the predominant musical style, involves respect for the usual symbols in the peripheral schools of Porto Alegre, and more, in the peripheral schools of the eastern zone of Porto Alegre, improving this cut for the context of the neighborhood and the school.

In this project it was up to us, as a team, to see the object of research not simply as an object, but as a human action with symbolic representations. With this, little by little the individual abilities of the elementary school students involved in the research were manifested, from the presentation of a design culture, where the actions are oriented through the acquisition of information and data.

At the end of the project what is sought is to identify ways that show the formation of cultural identity in the school, in the figure of the students participating in the project. This identity translates the profile of the people who live in that peripheral zone – peripheral areas in the political and geographical sense – seeking the inclusion of local particularities in the form of products and services that present universal quality, and enabling, even if occasionally, the construction and valorization of characteristics intrinsic to the community.

Through the quantitative instrument developed we verified that the rates of repetition in elementary school of that school are still expressive. According to the personal interpretations of the students, the reasons related to this repetition were due to family problems and the lack of understanding of the explanations given in the classroom.

In addition, we can see that the students perceived the attributions of each Design nucleus presented, articulating these with other areas of knowledge, such as mathematics in the implementation of planting areas in the development of the garden, Portuguese language and arts for the construction

of graphic panel and also mathematics with notions of scale, for the feasibility of the reading corner project.

We can, with this, believe in the possibility of including Design in the school curriculum of that school as an area of knowledge and as an integrating theme among other disciplines.

In any case, we must recognize that Design as a discipline or area of knowledge in a formal curriculum of regular education would require an amendment to the current Law of Guidelines of Bases of National Education (LDB), in addition to a broad national debate, involvement and political mobilization. It would also be necessary a movement of dissemination of educators about the potentialities of Design, in addition to the training and qualification of these for the application of specific themes. We do not disbelieve, with this, that Design is viable as a curricular area in a national teaching scenario, but I understand that more studies will be needed in this sense so that there is the stimulus of Design as a practice in elementary school.

The inclusion of Design as an integrating theme among the curricular disciplines, starting from a design bias, as a complementary and non-formal program may represent an initial and viable possibility in the short term. This alternative also presented and discussed in this project, sought to coin integrative dynamics in formal disciplines with a project-based learning approach allied to Design, thus amplifying its potentialities of structured organization for the resolution of problems experienced in school thus allowing another childhood culture, different from the logics of reproduction that other generations experienced in the educational environment.

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