

PEDAGOGIC EXPERIENCES IN PROJECT-BASED ACTIVITIES IN THE COURSE OF DESIGN IN THE PUC-RIO

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Abstract

As a compendium of a master degree dissertation, this paper presents some aspects of a case study regarding the apperception and evaluation of pedagogical experiences carried out in two Basic Project disciplines offered by the Art and Design Department of PUC-Rio.

The main purpose of this research was to investigate, while supported by a Qualitative Research Case Study, the strategies, dynamics and results of these efforts. The analysis was supported by bibliographic and exploratory research, including documents and notes that were taken during lectures and classroom activities. Interviews with teachers and students were also used. The theoretical background for the research was elaborated from two thematic axes: Project-based Activity; and Teaching and Learning Process.

This article presents three of the seven pedagogic experiences observed and analyzed: mini projects, drawing lived experiences, observation of the familiar, brainstorming, modeling, words play, images and words associations.

The analysis of the data collected in the field shows that the pedagogic experiences, true didactic resources used by teachers with the objective of motivating their students and leading them to a better relationship with the core of the Project disciplines, can be considered activities that keep a close relationship with sensations and perceptions.

Keywords: Brazil, Design, basic-project activity, pedagogic practices and teaching approach

1 Introduction

As a compendium of Ribeiro's [1] master degree dissertation, this paper presents some aspects of a case study regarding the apperception and evaluation of Pedagogic Practices that are being used in term project disciplines as part of an undergraduate Design programme, offered at the Arts & Design Department of the Pontifical Catholic University of Rio de Janeiro (PUC-Rio), in Brazil.

Since the creation of the Industrial Design School, in 1962, the first in the country, the backbone of most undergraduate design programmes in Brazil is formed by a sequence of term projects. By addressing the process of configuring objects or visual information systems, these projects bring together several branches of knowledge and skills acquired in other areas.

The design course offered by the Arts & Design Department of PUC-Rio was created in 1978, based on the curricular model common to all the design schools active in Brazil by that time.

From 1981 on, however, the Arts & Design Department began to implement a teaching model that reflected the Brazilian context, which was open to individual inquiries, and aimed at differentiated teaching for designers.

The new model led gradually to the configuration of a teaching approach, nowadays called Partnership Design, which has been in use for about twenty five years to teach project-based activities at undergraduate level in PUC-Rio.

According to this approach the student, or group of students, is encouraged to choose, within a real world context, a person or social group to point out a real problem to be solved and take on the role of partner in the search of a solution. The student and the partner undertake together the project's completion, going through the different phases required to define the configuration of a solution.

In the curricular structure of the Design course of PUC-Rio, two disciplines are directly responsible by the application of the methodological focus of the Design Partnership: Basic-project I and Basic-project II. Adopting this approach, along with Pedagogic Practices, these disciplines contribute for the development of the student's self-sufficiency and capacity of expression, and also help them to rescue and to develop their creative potential.

The methodological approach used by Ribeiro in this research was the qualitative research case study. The analysis was supported by bibliographic and exploratory research, including documents and notes that were taken during lectures and classroom activities. Interviews with teachers and students were also used. The case study was carried out over the period of one year and covered 20 class hours. The work involved 9 teachers and approximately 100 students.

The theoretical background for the research was elaborated from the following thematic axes and authors:

- Partnership Design; Couto [2], Ripper [3], Branco [4].
- Project-based Activity; Bonsiepe [5], Bomfim [6], Whiteley [7].
- The Teaching and Learning Process; Jobim [8], Cunha [9], Perrenoud [10], Morin [11] [12].

Following the guidelines of Design Partnership, the students were introduced to several pedagogical practices aiming the development of the creativity along with the capacity of design having real situations as a starting point.

2 Pedagogic Practices: creativity exercises

The theme of the research accomplished by Ribeiro arose from the observation of "Pedagogic Practices", comprised of didactic resources used by teachers in classroom, with the goal of motivating their students and taking them to a better relationship with the programmatic content of the disciplines they teach.

Many teachers are induced to seek theoretical approaches that can provide them with answers and support to their routine classroom practices. Through reflection, they try to understand and to keep in permanent motion the elements that help them to adjust their practice as educators. These teachers find support in the educational theories that somehow structure the pedagogic practices in a conscious and controllable form. Given the act of teaching is a complex set of pedagogical resources that help them to configure the presented contents, the theories help them to preserve the meaning of the practices and yet encourage constant review. These resources are used regarding situations that keep narrow relationship with sensations, perceptions, ways to feel, to see and to be in the world.

One of the richest aspects of the observation of pedagogic practices is the fact that although the actions can suffer the intrinsic difficulties of relationships among people and of their own development, they can be examined, evaluated and reviewed by the time they are happening, respecting the needs of that moment.

The reflection over the contents, dynamics and results of pedagogical practices is a fundamental process for the constant and necessary reconstruction of them. It is necessary that they are always being rethought and readapted so that they are not transformed in a mere instrument, indefinitely applied. The use of pedagogic practices only makes sense when associated with pre-defined objectives.

The pedagogical practices, for sheltering the contradictions and difficulties of an activity that builds up by the moment of its application, reflect, when accomplished, the realities of a live and dynamic process that is in permanent process of renewal.

This article illustrates the first three of the seven pedagogic experiences observed and analyzed by Ribeiro: mini projects, drawing lived experiences, observation of the familiar, brainstorming, modeling, words play, images and words associations. The first three are briefly described below.

2.1 Mini Projects

This practice provides the student with a wide view of the basic-project activity. It has a workload of 120 minutes, period in which the student tries all the phases of the design process of an object or of an information system.

This activity is not initially explained to the student. It is only asked that he or she bring to class his or her preferred materials, such as: vinyl, plastics, paper, cardboard, scrap etc. The proposed themes can be close to reality, like office utensils, masks, books, toys, etc, or very subjective themes, such as, a package for feelings, a machine of manufacturing dreams, a vehicle to transport happiness, etc.

During the activity, the students are oriented to organize themselves in groups and start to generate ideas always using words and drawings. The object configured shall present an adequate level of consistency, since even with a fictitious situation, it should be defined for example, the user profile, where that object will be used etc.

After choosing a possible solution for the problem in study, the students start to build their objects. It is in this phase that they realize the limitations of the materials and the need to review some project decisions.

The relevance of the application of this activity resides in the fact that, with the development, the student gradually gains conscience that all the stages of the design process are equally important and necessary to get to a final and satisfactory solution.

With the object built up, the group shall choose a name for it and do a complete detailed report of all the parts and functions. This information shall be part of a poster, for presentation of the results for the rest of the group.



Figure 1. Students discussing, executing and presenting their projects.

The goal for this activity, although in a superficial manner, is to place the student in touch with the process phases of a project. It still allows the experimentation with materials and the acquaintance with its possibilities and limitations.

2.2 Drawing Lived Experiences

The drawings are instruments for the presentation of the discipline in classroom and for discussions about the project's development.

From the belief that words alone can't make for an effective interactive communication between humans, and considering that the students are working close to people, social groups or project partners, the classes evolve from the drawings presentation sessions of observations accomplished with the project partners.

The drawings are made during the classes and show what was observed by the student, they are representations of lived situations. Through these drawings it is possible to discuss the events and to define appropriate paths for the project. In the first day of class the student is instructed to prepare a folder to chronologically organize their drawings.

In the next step the teachers ask the students, during their observations with the social group, to draw, whenever possible, the observed situation, the individuals, or even the sensations, whatever they are. When it is impossible to draw, the students shall write down important observations so that, as soon as possible, these annotations can be transformed into illustrations too. Complementarily, they work on some additional drawings during the classes. The students are free to choose the material with which they will perform the activity, such as pencil, wax chalk, pencil, charcoal etc.

These drawings are often used during the classes, when the students relate to their classmates how was their visit with the social group. Sometimes the accomplished drawings awake curiosity and raise many interesting questions.



Figure 2. Student illustrating what was observed in the social group

Some students take the act of drawing as a big trammel, when they themselves question their drawing skills. Sometimes they are discouraged to be exposed in front of the colleagues that they consider having greater ability. The teacher, in this case, talks and encourages the students, explaining that the quality of the drawing will not be evaluated, that it is just a record instrument as well as the words, but maybe the drawing can communicate things that can't be written with words during the observation session.

The observation is a way of information discovery, looking for it, noticing it. The observing act is present in people's daily activities, but many times the person do not realize it. The observation can be accomplished with a defined goal, concentrating on details or just in the contents and processes.

In this activity, the frequent exercise of the observation and its translation in drawings induce the students to become more and more familiar with their project theme, besides developing the capacity of expression of those that resist to the drawing by thinking that they do not know how to draw.

2.3 Observing the familiar

Now a familiar object is chosen, such as, an orange or a chocolate candy, to be observed during this dynamic. Specifically in the situation observed, the object used was a chocolate candy named "Sonho de Valsa", a kind of chocolate with three layers of solid stuffing chocolate and well known in Brazil.

After the distribution of a candy for each student, the teacher suggests that they explore all the aspects of that object: external part, internal part, intermediary part, composition, color, texture, writings messages, printed images etc. For the chocolate lovers, the observation was, according to them, a kind of "torture", because they had to keep looking, handling and feeling the smell without being allowed to immediately eat it. During the observation process the students' attention is called for the fact that, in some way, those sensations are already part of the observation and should be registered.

Each student does the observation of his own object in details, and they also observe the interaction of one of their colleagues with the object. The observations are registered with the largest amount of information possible, through texts and drawings, under the orientation of not censoring anything. After the specified time for the session, 20 minutes, the students divide into groups to elaborate a presentation of the product for the group. This presentation is made in the following class, and it is based on the record of the observations. It's accomplished through an illustrated poster and of a text that should be in the maximum two paragraphs. Generally the presentations result in real dramatizations, of the text and of the poster, previously prepared.



Figure 3. Students illustrating the observation of the candy, and then telling to the rest of the group their main impressions about it.

This activity intends to familiarize the student with the observation technique and with all the countless possibilities, as well as to stimulate their capacity of observation. This exercise allows the student to understand how can a simple and familiar object, from their everyday use, be looked under several points of view, and have small details that are actual results from a project.

3. The teaching/learning relation and the project based activities

Many of the aspects found in the activities described above can be considered as a stimulant for the development of the creativity. Through ludic activities, it is possible to take control of the situations; to provide the acquisition of knowledge in several areas; to create in the individual the need of creative attitudes and activities, through the mobilization of sources of ideas and constructive criticism; and to encourage the objects manipulation, ideas and materials. (Novaes [13]).

To show the students the value of their ideas, respect the appearance of original ideas and make the students discover their value, besides encouraging them to find out by themselves the answers for their questions, also are facilitative terms for the development of the creativity.

When observing and documenting the pedagogic practices described above, it can be noted that some teachers, clearly and unequivocally, encourage their students' autonomy, making the classroom a place where the dialog, the questions and the games are valued.

All these actions need to be guided by the analysis of the needs of the students and by the knowledge of the social environment in which they live. The set of these actions are the base to think in pedagogical practices, didactic materials and evaluation manners that can always optimize and renew the teaching and learning process.

We can think about an environment where the relationship among the ones who teach and the ones who learn is basically based on the interaction between affection and the intellect. This dynamic environment encourages encounters between the objective and the subjective field through different knowledge bases and interpersonal relationships.

We could notice, in the basic-project activity groups that were observed, the search for these encounters, since the choice of the project theme, where the student is frequently stimulated to work with something that gives him personal satisfaction, all the way through the constant concern with making the activities joyful, through ludic materials, or providing other points of view for everyday aspects.

The picture bellow illustrates aspects of a clearly constructivist stance in the application of the observed practices.

Table 1. A comparison between the constructivist and the Project Basic teaching

The Constructivist Teaching	The Project Basic Disciplines Teaching
The seek for the students' questions is highly valued;	In mostly project-based activities the students' questions is the start line for the development of a new knowledge;
Curricular activities based in primary sources of manipulative materials data;	The Design Partnership approach proposes a work in a real context;
The students are seen as thinkers with emergent theories on the world;	The observation and involvement with the real context become the main reason of development of projects, is the student who analyzes, processes, translates and transform those data;
The teachers generally act in an interactive way, being mediators between the environment and the students;	As much during the activities applications, as during the regular classes, the teacher's role is to instigate the students, and provide expression's way for the students' knowledge;
The teachers look for the students' point of view to understand their current conceptions seeking to use them in the subsequent lessons;	The projects development in these disciplines depends only and exclusively of the information brought by the students regarding the social group with which they chose to work;
The evaluation of the student's learning is intertwined with the teaching and the process happens through observations done by the teacher to the student during the work and for the presentations of these works;	The whole process is closely accompanied by the teacher that acts as mediator and tutor;
The students, whenever possible, work in groups.	The group is a condition of the projects' accomplishment and also of most of the activities.

It can be discerned in the work that is being accomplished by teachers of the project disciplines of the PUC-Rio's Design course aspects of the constructivist pedagogy, here summarized as: to propose problems of emerging relevance to the disciples; to structure the learning process around "great ideas" or primary concepts; to find out and value the student's point of view; to adapt the curriculum to students' suppositions; and to evaluate the student's learning process in the context of the teaching. All of these principles can be found in the description of the Pedagogic Practices, upon which this research object is based. (Brooks and Brooks [14]).

It has become clear in the observation sessions that teachers and students exercise the role of 'producers' of their own transformation function. When taking over this participative stance, teacher and student live experiences of rupture and redefinition of their knowledge, and the result of these ruptures points to for a dialogical situation, as an intermediary category between knowledge and people (Fernandes, [15]).

The sharing of experiences and knowledge between teacher and students should establish the teaching/learning relationship. In all observed activities, the work was never solitary .On the other side, it was being built and rebuilt by the groups in each class, in each discovery, each new challenge.

Traditionally, the teaching has been judged as a mimetic activity, a process that involves the repetition by the student, or repetition of the information brought by the teacher.

4 Conclusion

In the accomplished research, besides the observation and documentation of the pedagogic practices, it was possible to document methods and procedures that are helping to make more efficient the teaching contents and processes in the PUC-Rio's Design course. The characteristics of project disciplines, among others in the curriculum, require of the students autonomy and entrepreneurship, request in its base instruments that help to promote the enlargement of the limits for the students. In Design Pedagogy studies it is important to consider these matters in a way that the branching in the fields of teaching and learning can be considered.

The Design is a notably flexible discipline, prone to interpretations radically different in the theory as well as in the practice. The multi faceted nature of the Design imposes interaction, dialogue and partnership with several fields of knowledge, hence the importance and the opportunity of analyzing the Design teaching methods from the perspective of other fields of knowledge, as in this article, where support was sought from the Psychology and Pedagogy areas.

By this research one can be conclude that the work that has been accomplished by the 9 Basic Project teachers in classroom, illustrates the search for paths that can, somehow, finish with the conservatism and with the lack of innovation in the Design teaching.

To relinquish old paradigms in this field constitutes a challenge. To rethink the activity and the role of the designer as a result of a global relationship, which includes the environment, the place where the configured object is inserted, the subjectivity and the collective vision due to the culture, which presides the relationship of the fellow man with the object, is a path already pointed out by numerous scholars in the field of the Design.

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