

Design for Non-designers (D4ND)



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Abstract This article exposes a methodology of design workshops for non-designers (D4ND) developed in an academic context interested in (1) deepening the explanation for what is the design for non-designers and (2) the strategies which may be to provide the tools of design thinking to non-designers. It is not a matter of transposing formal training structures to non-formal training, but rather, to explore new pedagogical processes involving design students to be applied to non-designers. Design is seen here as a discipline supported by an active learning process, critical, and directed towards problem-solving. We use the word design in its broadest sense, contemplating a humanist vision capable of generating social transformations, promoting more democratic actions that aim at a better, more just and equal world. At an individual level, it can empower people (students and non-designers) to increase their quality of life. In the first part, we address the assumption of D4ND project, beginning by describing its goals and identifying its actors. Later we questioned the work process through design and how to create knowledge through the implementation of the workshops. In the second part, we expose the methodology of the exercise of D4ND and present a synthesis of its outputs: five projects. We conclude with an analysis of the outcomes of this pedagogical experience, at the level of the students, as well as the team teachers. Closing this paper with the perspective of the future of the D4ND project.

Keywords Design · Design thinking · Workshops · Pedagogical practices

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I Part: D4ND Assumption Concepts

1 Introduction

This article presents and discusses an exercise made with last year's students from Product Design Bachelor in the Fine Arts Faculty of Lisbon University. The exercise proposed to develop a design workshop for non-designers. This term non-designer was adopted to refer to an audience that does not have formal knowledge in the area of design.

As described by Vasconcelos,

The (design) teaching activities are developed around the theoretical and practical exercises (...) On one hand, guide the theoretical component, on another hand, ensure a student's work orientation base, establishing itself as the tone or as a main argument for research, exploration, development of ideas, and students' skills (Vasconcelos 2014, p. 2).

The initiative exposed here provided a new look at the design discipline in favor of ideas and actions that allow access to its concepts and methodologies. In this case, design through its conceptual, projective, and transformative capacity is at the heart of the problem that was revised to be disseminated in other fields.

2 D4ND Goals

Fontoura defends the idea of 'Education through Design' (EdaDe) which is close to the one proposed here. As the author states "the term 'through means': from one side to the other, across. The expression 'Education through Design' has been used for some time and its origin is in the expressions 'Education through Design' and 'Education by Design'" (Fontoura 2002, p.7).

In this case, 'through design' is the common denominator of the objectives of our proposal:

- to provide knowledge of the work of several leading designers and architects with the possibility of identifying their modus operandi;
- to reflect on the strategies and design tools and make intelligible the extent and complexity of the factors that most affect the exercise of design;
- to promote the development of integrated, disruptive and critical thinking and know how to apply methods of analysis, planning, organization and design management;
- to increase autonomy, the creation of common and individual values resulting from the synthesis of learning and testing, as well as rehearsing ways of approaching the discipline and its practice;

- to guide to know how to apply acquired pedagogical and scientific knowledge to the academic path and real situations. And, to prepare students to respond, monitored by the teacher, to any of the three levels of active design within the organization: the strategic, the tactical, and the operational.
- to promote the search for strategic solutions for internal communication of group dynamics management and also for visual communication of the results of the planning of the workshop activity.

By taking this knowledge out of the academy, we wanted to develop, test, adapt, and apply innovative design practices to a non-formal educational environment. To foster closer ties and strategic cooperation between institutions in different sectors of education, peer-based learning was promoted based on workshops.

This step aimed to promote the connection to other realities and to encourage multi, inter, and transdisciplinarity. Motivated by Brown's phrase (2010, book subtitle) where he considers that "design is a powerful tool", capable of providing working methodologies to intervene in very diverse areas (Vasconcelos 2017, p. 61).

Design is seen here as a human activity, as an area of knowledge, as an active process of learning and critical problem-solving. This design perspective promotes skills capable of generating social transformation; through the recovery of man's design capacity and the promotion of these more democratic actions that, collectively, aim at a better, more just and egalitarian world.

3 D4ND Actors

To disseminate this creative and innovative culture, partnerships were established with the educational services of museums and educational centers. In this way, it was possible to approach the target audience - non-designers - and promote the transfer of knowledge on the application of the methodologies, tools, and concepts studied. The institutions contacted understood the importance of this work and contributed to the dissemination of the workshops as an approach to the reality external to the academy.

They realized the design in its broadest sense and meaning, as a power able to actively collaborate in the field of informal education. As a result of this process, four types of actors were involved:

- the teachers who assumed the role of tutors and who questioned how the design, as a formative element of culture and troubleshooting process, can promote the formation of non-designers (the basic question of work);
- the students who developed their autonomy and critical capacity assumed freedom, rights, and obligations and defined how the knowledge of design can be expanded and be available to the general public. For Pilloton (2009, p. 41) "student designers are one of the few groups overwhelmingly filled with optimism and belief in the potential for design to ameliorate social ills and make life better".

- the museums, educational centers, and training centers that hosted the proposed activities. They gave space to the project experiences and made the bridge with the target audience;
- the non-designers who understood the potential of design, making use of its tools, its foundations, its working methodologies as a way to interact with material and immaterial culture and design objects.

4 Through Design?

The creation process is often a complex and open problem-solving process. For being too vague and sometimes inaccurate, Simon (1981) illustrated it as “an exploration within an immense labyrinth of possibilities”.

However, as the resolution process progresses, it can be structured and better specified. From the various possible solutions and the use of validation procedures for the design options, the solution becomes clearer. Design can then be understood as this possibility of critical thinking that offers tools to organize and seek better solutions. It is architectural thinking that is transformative, creative, and innovative.

And, what is design thinking? For many authors (Steck et al. 2011, p. 3), “Design Thinking is a mindset. Thinking like a designer can transform the way you approach the world when imagining and creating new solutions for the future”.

It is also a process, which begins with the definition of a purpose and develops through a series of questions and answers to obtain solutions (Bernsen 2006, p. 11). If designing is an activity inherent to human beings (Cross 2008, p. 11), the knowledge of the design tools activates and reveals these design capacities, helps in the interpretation of needs and the elaboration of viable solutions.

It can also be perceived through the project management function, as a conceptual activity, or even as a cultural phenomenon. It is a vehicle for social and political change, a way to make responsible decisions with planning. Andrea Branzi advocates when he said that “the design lies not in the finished products, but in the act of making them. Not in the result but the process” (Branzi apud Manu 1995, p. 63).

It is in this broad sense, that is, as a fundamental human activity (Bonsiepe 1997, p. 15) that argues the role of design as a tool that encourages creative and critical thinking with the purpose of implementing projects through know-how and critical making.

In this sense, it is believed that the design has a great potential for solving complex problems, difficult or simple, and can be a formative contribution to the overall education of all, here called non-designers. The skills associated with the design process - critical problem solving - are found in the development of creativity, empathy, autonomy, proactivity, and entrepreneurship. These features are arguably useful for people, contributing to their self-satisfaction and consequently increasing their quality of life.

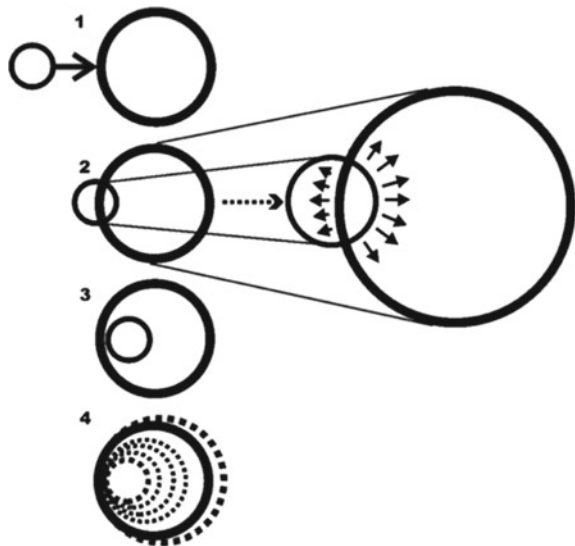
The design process or the methodology of the project needs to foster individual skills and personality profiles at various levels as Brown (2008, p. 3) values included:

- Empathy (...) able to imagine the world from multiples perspectives;
- Integrative thinking (...) not only rely on analytical processes (those that produce either/or choices) but also exhibit the ability to see all of the salient – and sometimes contradictory – aspects of a confounding problem and create novel solutions that go beyond and dramatically improve on existing alternatives;
- Optimism (...) that assumes that no matter how challenging the constraints of a given problem, at least one potential solutions in better than the existing alternatives;
- Experimentalism - significant innovation doesn't come from incremental tweaks. Design thinkers pose questions and explore constraints in creative ways that proceed in an entirely new direction;
- Collaboration - the increasing complexity of products, services, and experiences has replaced the myth of the lone creative genius with the reality of the enthusiastic interdisciplinary collaborator.

We assume that this set of skills that goes through the design process can (and should) be promoted to a wider group of people. It means involving non-designers with the procedures adopted by design (methodologies, methods, and techniques) and using them as learning resources. This is not simply a transposed projective structure for training. It is rather to identify the processes used by designers, interpret the modus operandi of the potential reference of professionals within the design culture to critical thinking, and thus explore their educational potential.

The path of this design knowledge was illustrated by Fontoura in the diagram on the acquisition/construction of knowledge (Fig. 1).

Fig. 1 Acquisition/construction of knowledge. (Fontoura 2002, p. 173)



According to this author,

The acquisition and development of skills lead to competence. This term can take on several meanings, so it is important to make clear the meaning is given. The notion adopted here is the broadest; it integrates knowledge, skills, and attitudes. It's understood as "knowing in action" or "knowing in use" (Fontoura 2002, p. 172).

Knowledge, from this point of view, does not occur through its transmission, which would result in a mere reproduction of acquired knowledge. The proposals presented for the workshops allow the appropriation of knowledge and above all, its construction. This is why they are called tools, instruments, or devices, which provide the Design Thinking, from critical thinking to critical making.

5 Why Workshops?

It is building that men become builders.

Aristóteles *in* Ética a Nicômaco

According to Scaletsky, "a workshop is a moment of creative immersion, of launching ideas that seek, through various techniques, to lead the formulation of project scenarios, creation of concepts or even the proposition of concrete first ideas" (2008, p. 1135). It is a dynamic knowledge platform and open enough to practice and collaboration. Usually, the action is directed towards a group or a system. It is considered a decentralized activity, which follows the guidelines of a monitor. It happens in a short time and is based on intellectual curiosity and unconventional attitudes towards the presentation and resolution of problems. In short, it is a field of experience.

In the Tactile Workshop's purpose, Munari states that "children need to understand and to classify, to put in order what they learn", referring to the way "communications skills are built up in language" (2004, p. 3). He adds that these moments are crucial for the preparation and development of the personality, in a performance of action without imposing oneself (Lao Tse).

The workshops have the potential to deepen, namely, concerning innovation and by generating rapid changes in those involved in the process. This statement is valid not only for those who participate in the activity itself (non-designers) but also for those who develop/create it. The contact between student-teachers was also an opportunity to work together on themes specific to the culture of design and mutual interest. The design was discussed, its essence was chosen and its form of transmission was defined.

Outside the academic scope, in contact with real life, the workshop promotes experimental research in the field. The workshop is the moment when the various topics or knowledge about design were evaluated. To measure the impact of the meeting, the focus was on creativity and innovation and to assess the opportunities of informal learning of the proposed actions.

Part II – The Design Experience

6 D4ND Methodology

As already mentioned, D4ND is the result of an exercise proposed by the subject Projeto IV, intended for students of the last year of Product Design Bachelor in the Fine Arts Faculty of Lisbon University. It was intended to actively engage students, not only in class but also in society.

From a list of given reference professionals, they studied one's works and philosophy to identify its essence and translate it into a non-formal educational activity, including its planning, organization, and evaluation. The methodology is based on selecting the work to be carried out, establishing the research objectives, developing the concept, testing it, and debating it to present the proposed conclusions.

The methodology adopted is a qualitative approach to the literature review and documentary research application in the first instance. The teachers worked as tutors guiding the students to be active agents for the development of the design knowledge dissemination process. The concepts and themes addressed in addition to those on design were inventiveness, innovation, interdisciplinarity, openness, and learning processes, especially the characteristics of pedagogy in action. Throughout the development of the project activities, they were encouraged to express their opinions, listen to other groups, discuss their ideas, and explain their decisions.

The dynamics of the workshops promoted in the students (and also in the teachers) the acquisition of management skills, namely concerning intercultural learning and social relations, and also the planning and execution of projects. Teachers essentially played the role of 'facilitators' thus allowing students to be independent constructors of knowledge.

The pedagogical theories discussed are underlying the acquisition of knowledge and learning as the constructivism school that deals with the study of cognition and cognitive processes, which describes what knowledge is and how it is reached.

The constructive view suggests that learning occurs by performing specific experiments and significant within well-defined contexts. These experiences allow them to build mental models and develop ideas, concepts, and personal strategies. The speech, activity, and reflection are constant in this vision. It explores the individual's cognitive processes (Fontoura 2002, p. 38).

The aspects of Escola Nova were also discussed, especially learning by doing philosophy. It was a pedagogical movement established by John Dewey in America and by Rui Barbosa in Brazil, based on the respect of each individual's curiosity and interests. The students were in the center of education. In the educational process, interactions with other group colleagues and an active and participative attitude were valued. Learning, stimuli and individual and group motivation were also discussed to arrive at the implicit question of the proposal for this exercise: how does real and meaningful learning take place?

The concept of openness appeared in some classes and was understood as Popper when he defined an open and democratic society, that is, a “society in which individuals are confronted with personal decisions” (1974, p. 188). The individual or the student is part of the decision-making. He interprets the world of design and chooses the direction of the activity. Umberto Eco also brought this responsibility when he assesses the active participation of the user or observer who takes on a new position and becomes an agent and co-designer (Eco 1991, p. 62).

To encourage initial research, a list with fifty names of reference professionals was available. Each group could choose only one name from this list. After this decision, students analyzed the works and philosophy, searching for the professional essence. At this moment, questions arose about what the designer’s activity is all about, which action is specific to the chosen designer, and how his work can respond to the exercise statement.

The workshop is, therefore, the representation, adaptation, and simplification of the reality studied. It is where the studied processes promote the prospective transfer of analogical reasoning to construct the “scenario” of non-formal teaching activity. Here, scenario means a space that is not necessarily material, but a possible world in which the student can act. Moodboards or other forms of concept maps served as support to represent the investigated references and acted as a lever for the creation of the ideas.

The next step was the organization of knowledge and its translation into a pedagogical activity. The proposed experience was tested, adapted, and tested again to make the most significant process. New learning was build and the expression “learning by doing” by João Amós Comênio (1592–1670) was achieved.

The participating students were not just directors/designers. They were the guinea pigs of the projects of colleagues and invited others (designers and non-designers) to participate in the process. Therefore, they tested their proposals evaluated and improved their activity proposals.

7 Design Workshops Outcomes: “w/ Saul Bass”, “Speculative Design”, “Ar-chi-tec-ture”, “Cochostruir”, “Object (Id)entity”

A good class project is combustible, it is the fuel that powers the creative engine; or put less metaphorically, it is the beginning, not the end, of an experience. (Heller 2009, p. 12)

To illustrate the results of the exercise, we present five of the proposed workshops. They are examples of the work of multiple expression protocols in groups, dialogue, writing, drawing, cutting, photography, performance, construction of models, and/or simple objects, among others. They are activities that promoted the discovery of

design as a system that generates value (political, economic, social, technological, cultural, or symbolic) transmitted as design thinking tools accessible to anyone. The workshops provided space and time for reflection and experimentation to observe, debate, imagine, and create.

The students' work was guided based on the following questions about the proposed activities:

- what was being 'drawn'?
- what was the concept/essence of the work for whom were they 'drawing'?
- how to plan and disseminate the acquired knowledge?
- what design methods and methodology were chosen to be presented?

The examples presented here demonstrate the range of the selected theme, the different realities, and different design methods worked. An action that was characterized by always stimulating creativity, seeking to develop critical thinking and finding solutions to problems.

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Workshop 1 – “w/ Saul Bass” by Joel Antunes, Natália Svabeková, Rodrigo Afonso

This workshop had as a premise to explore the work of designer Saul Bass. His minimalist and simplified approach helped to develop the creative process. The result was individual flipbooks. The workshop is intended for an audience of young people and adults, with a duration of 1 h 30. The materials needed were colored and white sheets, scissors, glue, with which a sequence of actions was carried out (Fig. 2).

Workshop 2 – “Speculative Design” by Inês Guimar, João Calado, and Xavier Guerra

This activity introduces the speculative design of the duo Dunne & Raby through the conception of a project for an alternative reality. Following design thinking, sheats were made with questions that instigated creativity. Diagrams illustrated the concepts related to speculative scenarios, a list of future assumptions were used, and also cards for describing the proposal were created (Fig. 3).



Fig. 2 Workshop 1 plan and photos of one of the tests performed

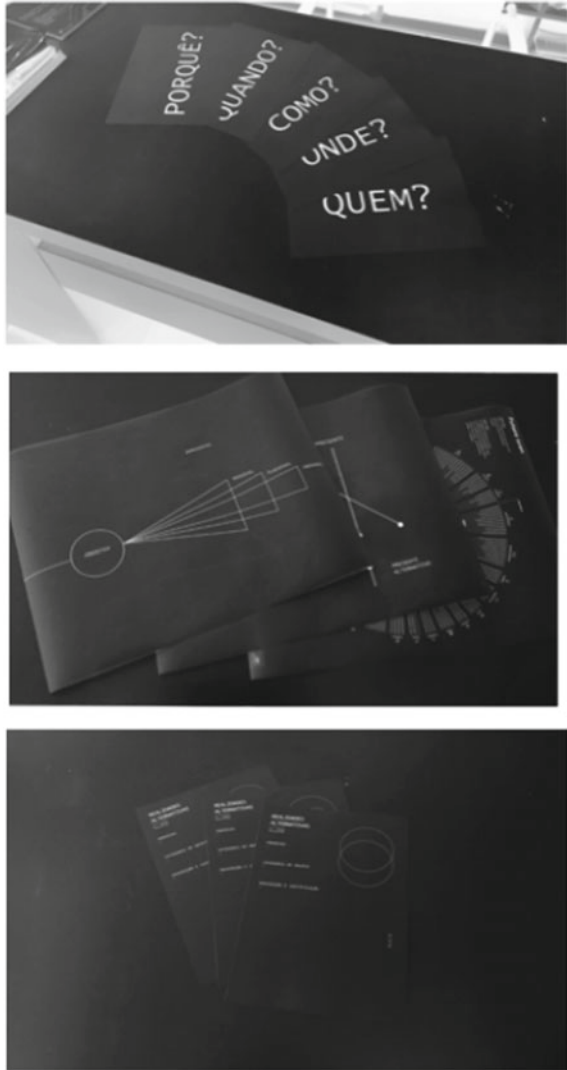


Fig. 2 (continued)

Workshop 3 – “Ar-chi-tec-ture” by Marta Bat and Stijn Haegen

This activity (Fig. 4) aims to introduce the architect Peter Zumthor to those interested in architecture and interior design. The proposal is based on a construction kit (Fig. 5). Spatial speculation occurs not only through the use of the pieces available but also through a re-look at everyday textures that were transformed into backgrounds in the creation of new worlds (Figs. 6 and 7). The exercise covers the dimension of the micro to the macro, from the specific to a general situation, from the solved to the act of solving.

Fig. 3 Toolkit created for workshop 2



Workshop 4 – “Cochostruir” by Ana Margarida Lapa, André Monteiro, and Joana Santos

Its purpose was to contextualize the designer Naoto Fukasawa (Fig. 8) and explore the object production processes, using experimentation and prototyping (Fig. 9). The students wanted to encourage participants to formulate objects’ hypotheses that would respond to what was proposed: the handmade production of a ‘cocho’ (Fig. 10)

WORKSHOP PEDAGOGY

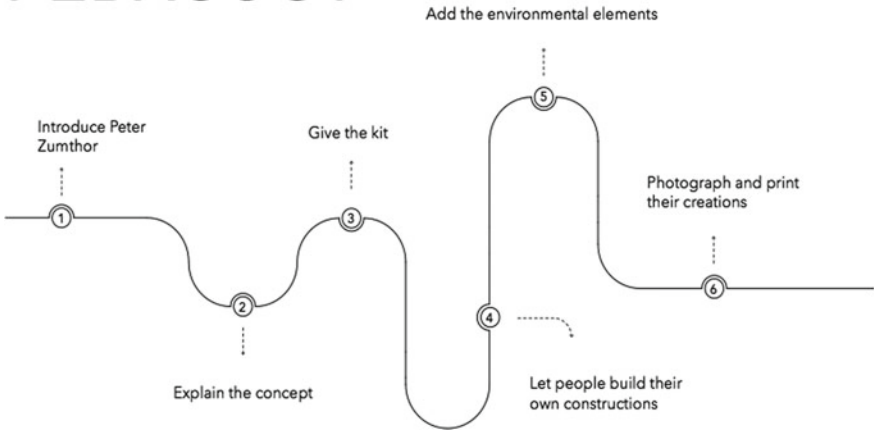


Fig. 4 Planning the workshop 3



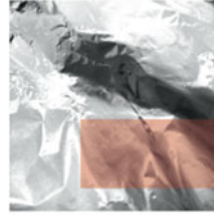
Fig. 5 Constructive kit developed for workshop 3

from simple materials such as cardboard, glue, paper, scissors, x-act, ruler, plaque board, pencil, eraser. They used design thinking as a tool to look at a traditional object that is no longer used today, to exalt its primary function and to investigate current solutions for drinking water.

Workshop 5 – “Object (Id)entity” by Maria Amélia Silva, Gustavo Calé, and Mariana Martins

Andrea Branzi’s work and philosophy is the starting point for this activity. The theme started from the dichotomous premise ‘object-culture’ with the elaboration

VISUAL RESEARCH OF MATERIALS !



We tried to take materials out of
there context and creat a whole now
scene with some basic materials.

BREAD



Fig. 6 Visual and material research

of a cultural scenario and after the integration of a sitting artifact in the projected context. The general objective is to reflect on the current society through brainstorming and theoretical discussions. A project activity of creating an object happened at the end (Figs. 11, 12, and 13).



Fig. 7 One of the built scenarios

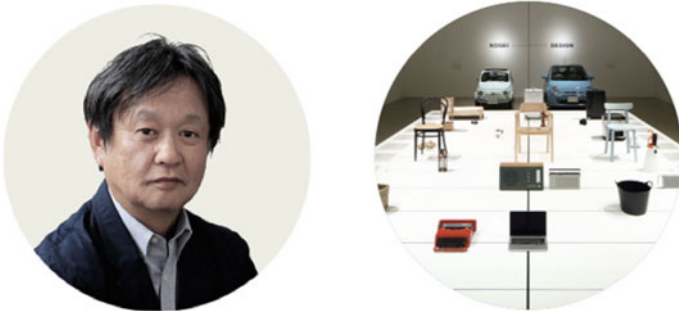


Fig. 8 Presentation of the studied designer

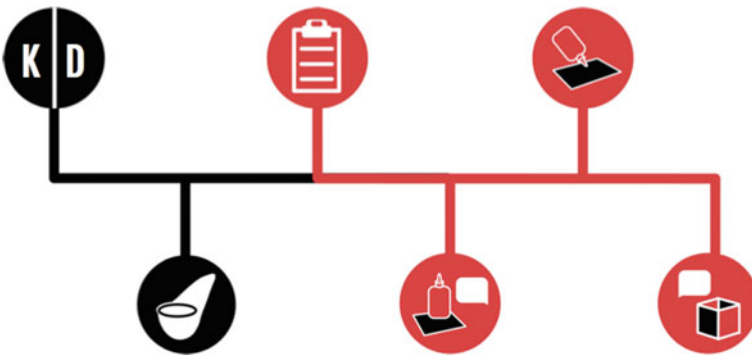


Fig. 9 Workshop 4 plan of action

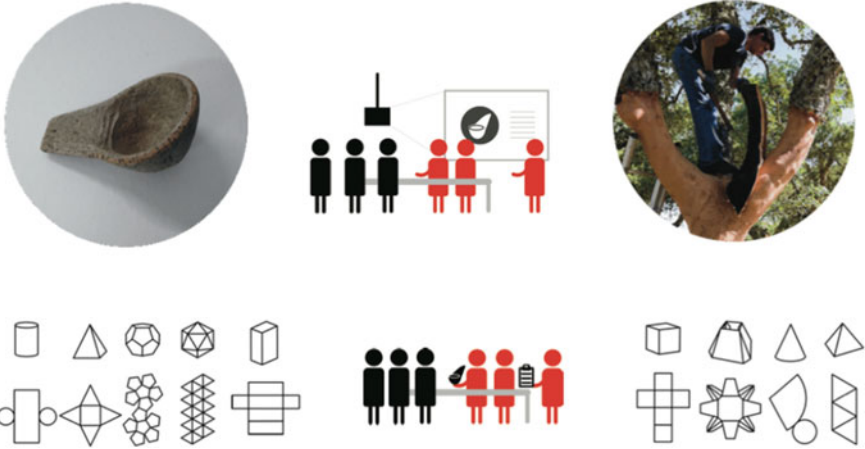


Fig. 10 Workshop 4 organization



Fig. 11 Phase 1 of workshop 5: discussion on objects for a society

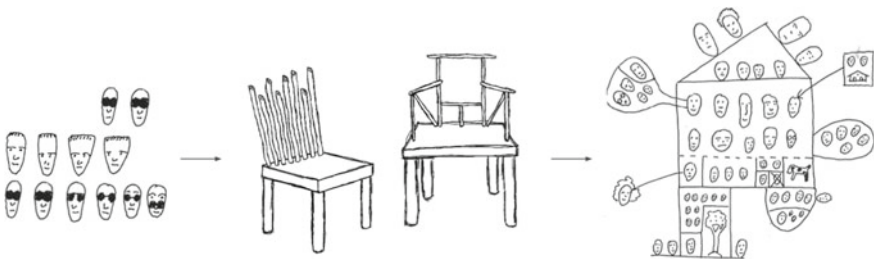


Fig. 12 Phase 2 of workshop 5: discussion on societies for objects

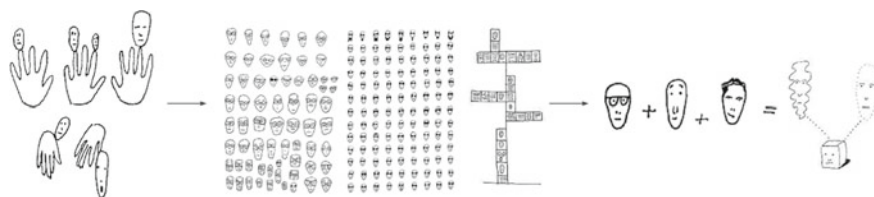


Fig. 13 Phase 3 of workshop 5: development of a scenario and an object about the created society

8 Final Remarks

Creating design workshops for non-designers helps to disseminate knowledge about the designer's activities and the skills associated with design thinking. However, these examples were not only to complement and assist the formation of others (non-designers), but also to empower the students involved. In the classroom, their self-transformation was perceived as a participatory actor, conscious of their profession and skills. They became aware of design methods and simplified this knowledge, realizing that they were able to disseminate them.

In structured workshops, there was the development of an imaginative reflective and critical mind, architectural design thinking, creativity and generalist thinking, observation skills, and learning through experience. We worked with ideational, associative, and expressionist fluency; with concepts of originality and innovation; symbolic and semantic redefinition.

When the workshops were held, students realized the importance to be open to the real world and real people. They also realized that the university could be integrated into the community; as a meeting and learning place. The design has this capability as a discipline to empower, imagine, express, social act. The design 'building through experience' method shows a way to do better.

This was an important experience that still has much to be explored. Future work will be to develop strategies for the implementation of a program of 'education through design' suitable to the Portuguese educational reality. It is a future project that will disseminate design and its creative and innovative culture.

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