Co-created tools for teaching, learning and designing services in Colombia

Facilitating interdisciplinary learning in service design innovation

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Abstract

This paper resumes an on-going research project that is developing and prototyping an improvement on the learning experience for students in design innovation. For this project the key components of the Innovation Workshop's learning experience have been considered, evaluated and adjusted. Among these elements are the tools that have been adapted to facilitate the design and learning process of multidisciplinary teams, composed by designers and non-designers, which work collaboratively through a semester-long project with a company brief. This paper presents and describes three tools from successful student's experiences, why they have been chosen, and how they have been adapted to be integrated into the set of resources for the *Innovation Workshop* learning experience.

KEYWORDS: Innovation workshop, Human-centred innovation, design thinking, service design, service design tools, service design in Colombia.

1. Introduction

Background and origins. In recent decades both the Design discipline and its practice have experienced a great transformation all over the world; the connection between Design, services, value and innovation, by means of interdisciplinary and human centred approaches, have redefined the way in which Design is nowadays understood, valued and implemented, and Colombia has been no exception to this change. However, as it is an ongoing global transition, the effects of this mindset change are just being recognized in Colombia.

With the potential that Service Design has now in developing countries, it is not only important to educate Design professionals in this approach, but also to share this way of thinking with other disciplines. In this attempt it is important to consider that the way in which design methodology is taught has to be adapted, designed and documented for people with different academic backgrounds, in order to make this process explicit, transparent, appropriable and replicable.

Innovation workshop. Working in the context of a multidisciplinary effort by the schools of Design and Management of Los Andes University in Bogota – Colombia, a semester-long course for undergraduate programs was created three years ago. The course objectives are: to develop a concise methodology for conceiving and executing innovation projects, to transfer this methodology to students (both designers and non designers), and to engage company managers throughout this experience.

The course, named *Innovation Workshop*, is offered as a fourth year studio for the design program and as an elective for the entrepreneurship minor offered by the Management school. This structure allows the course to integrate design students with students from all the programs offered by the university, and in this way develop the projects from multidisciplinary groups. During the course the teams, with the coaching of the teachers and the information given companies, apply the methodology of the class, based on the paper: "Innovation as a Learning Process: Embedding Design Thinking" (Beckman & Barry, 2007) for the development of projects that can be either products, services or product/service challenges.

Although during the years that the course have been implemented several adjustments have been made to the contents, the activities and resources; today, more than 3 years with the course, around 54 projects and 228 students from different backgrounds, it is possible to reflect about the experience. Consequently, with the objective of documenting, codifying and improving the learning experience and practice of the course, an ongoing research is being conducted.

This paper presents preliminary results of the research related to the experience of the students around the following questions: how students (designers and not designers) understand service design concepts and methodologies and incorporate them along the different phases of their projects? How to make use of good practices of students and build on their adaptations? What are the barriers that students face when trying to understand and design a service? If any, how can we help students overcame this barriers?
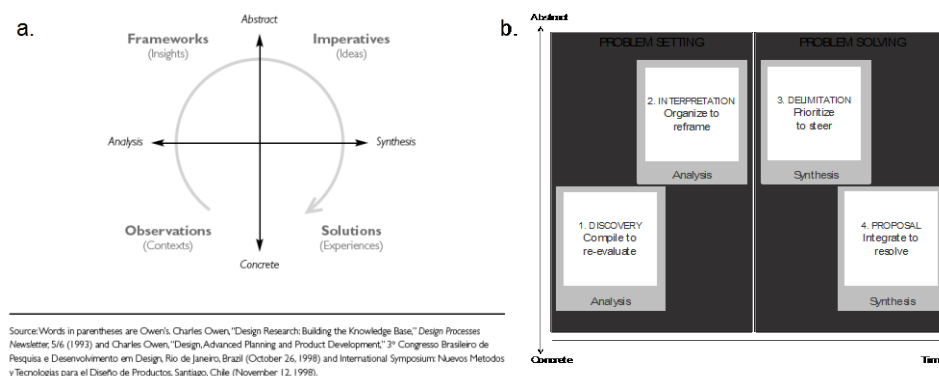
2. Methodology

Since the students' and professors' engagement and participation determine the experience, the evolution of the methodology and the materials developed by both professors and students were examined, with a particular emphasis on tools and resources related to the research questions. Extensive interviews and work sessions were performed with former and actual students, conducted by researchers who were not involved in the original workshop sessions. Emerging patterns about service design concepts, tools, and methodologies were identified and analyzed. Tools from successful experiences were assessed, adjusted and redesigned to be tested during the second part of the research.

3. Tools for service design in the Innovation Workshop learning experience

From this research, the components of the Innovation's workshop learning experience were identified as: human factor elements (teamwork, coaching of the teachers and interaction with companies), methodologies, concepts and tools.

- *Human factor* is the main and most important component. It is divided in teamwork, coaching by professors and interaction of students and professors with companies. *Human factor* is related to the complex experience of working collaboratively with people of different backgrounds to develop a project, thus it was considered as one of the most important indicators for the development and co-creation of the tools presented below.

- *Methodology* is the compass for the learning process and the project development process. For the Innovation workshop the model presented by Beckman & Barry (Figure 1a) has been adjusted (Figure 1b), the phases have been re-named and adapted to the needs of the students, the companies they work with, and the local context in which projects are developed. The graphical representation of the model has been changed as it was found that is clearer for the participants to understand the methodology in relation to its development over time.

a.Beckman & Barry Innovation Model   **b. Innovation Workshop model**

- *Concepts* are the abstract elements of the methodology that frame and support the process. From the research within multidisciplinary teams, one of the main barriers to assimilate design thinking and service design approaches was the lack of a shared language and comprehension of basic concepts between designers and non-designers. Therefore, it was fundamental that the resources enabled the comprehension and integration of concepts such as *stakeholder*, *touch-point* or *front-stage* through the project, as this integration builds a common ground for a fluent communication

- *Tools* are the component that articulates the concepts' implementation throughout the methodology, and integrates all the components of the learning experience. Tools (guides, to do lists or printed forms, among others) have shown to be a key element of the learning experience as they support designers' practices by making them tangible and communicable, plus they guide non-designers and firms throughout the project phases by making assignments feasible.

When assessing the development of the projects in teams of students from design and other fields, complications emerged frequently when the groups were moving from one phase to the other, especially in those paths from concrete experience observation to abstract conceptualization (from discovery to interpretation in our model) and from abstract conceptualization to abstract conceptualization (Interpretation to delimitation in our model). These were the moments were non-designers were more likely to feel lost and disengage from the group, often because they were unfamiliar on how to conceptualize and organize qualitative information with graphical analysis such as profiles, journeys or blueprints; or because they didn't feel comfortable with setting the problem in an intangible connection path (from insights to benefits, to value proposition, before defining the solution attributes).

It was also found that both designers and non-designers tended to use the tools presented in *This is Service Design Thinking* (Stickdorn & Schneider, 2011), *IDEO HCD toolkit*, *IDEO Method Cards*, *Bootcamp Bootleg* (Stanford University, 2011), and those from their previous experiences, in an unconnected manner within and between the different phases, leading to confusion and frustration when trying to make sense of loads of, sometimes inutile, information.

On the other hand, successful initiatives of groups coping with these complications were identified and analyzed. There were communication strategies related to the human factor mentioned before, such as teams that defined clear roles and activities based on each participant's abilities; but there were also tools designed or adapted by the group to overcome their difficulties.

Tools appear to be a manner to codify, share and transfer practices; therefore tools from the state of the art can evolve and be adapted to specific environments. The following parts describes three tools from successful student's experiences, why they have been chosen, and

how they have been adapted to be integrated into the set of resources for the *Innovation Workshop* learning experience.

All the tools presented below have been adjusted and translated into an instruction-template format. *Instructions* convey considerations related to: objectives, outcomes, participants, key concepts and implementation activities. Instructions have been thought to be shared grounds for the team to discuss and take into account basic elements that can help them overcome the barriers. *Templates* were designed to facilitate dealing with the organization and visualization of the information (specially for non designers), and to focus the designers' attention on the content rather than on the layout's design.

3.1 Service Experience

Origins: A team had to understand how was the experience of an Asian restaurant in Colombia, since the restaurant wanted to develop a more sustainable utensil to eat without affecting the experience. After gathering information from different sources they decided to place images on a piece of paper and write down what elements composed every image, as a step between gathering and analyzing the information. With this tool the team was able identify differences between the way waiters attend the customers, the way chopsticks were on the table from the beginning or not, the way forks and spoons were offered depending on the waiters perception of the customer and the way customers changed depending on the location of the restaurant.

Appraisal: Although the results of the tool were relevant, in order to replicate the group's experience with other projects, it was necessary to codify this process in a template that could assist data sorting and analyzing. Additionally, tools such as this one that includes large amounts of information tend to be complicated when the team faces the analysis stage, therefore requesting the integration of, at least basic, guidelines.

What has been added? The instruction format (figure 2) integrates detailed descriptions of the tool, the skills, key concepts and references. However, the main addition was to include in the instruction format suggestions on the actions that have to be done before, during and particularly after gathering the information and filling the templates. These instructions are meant to be a guide that integrates the most common tips and feedback given by the professors in the coaching sessions related to these activities. The template (figure 3) includes definitions and questions to trigger the discussion when filling in the information.

Figure 2: Service Experience Tool instructions

Figure 3: Service Experience Tool Template (adjusted from the A4 original size).

3.2. Behind the service

Origins: When evaluating the ways teams dealt with the problem of trying to decompose and analyze service related projects, it was found that very often they tend to centre their attention on the user's experience and find it complicated to relate this experience with the provider's perspective. Blueprinting was used for a general overview of the service but leaded to a rather superficial backstage understanding since the graphical piece integrates a lot of information that, again, was mostly focused on the user experience. In a project that was taking care of the lack of university services for the disabled community, a close assessment was made to the current university offerings, formal and informal, from all the stakeholders involved in the backstage of the service. This approach lead to understand that there were several initiatives with the question on how to integrate the disabled community, with platforms and resources that were available but disjointed. Afterwards, it was understood that framing the attention on the backstage only could give a complementary perspective of the service offering that complements the user experience's perspective.

Appraisal: Blueprinting might be the tool that is more clearly related to service design, both for understanding and designing services. However, for groups of students unfamiliar with service design concepts it can be cumbersome, leading often to a simplification where only those elements occurring "on stage" are taken into consideration. With a close and focused look to backstage current activities insights, patterns and opportunities can be integrated to the observations of the user's service perspective.

What has been added? Detailed instructions (Figure 4) aim to lead the team to be aware of the key elements and define a starting point before initiating their activities. The template (figure 5) seeks to induce the capture of observations and notes related to the backstage actors and relations in a systematic fashion.

This tool is meant to be used together with the service experience one for the process of gathering, organizing and analyzing the information of the problem setting phases of the model; although they are also suggested as a resource to define and communicate design proposals.
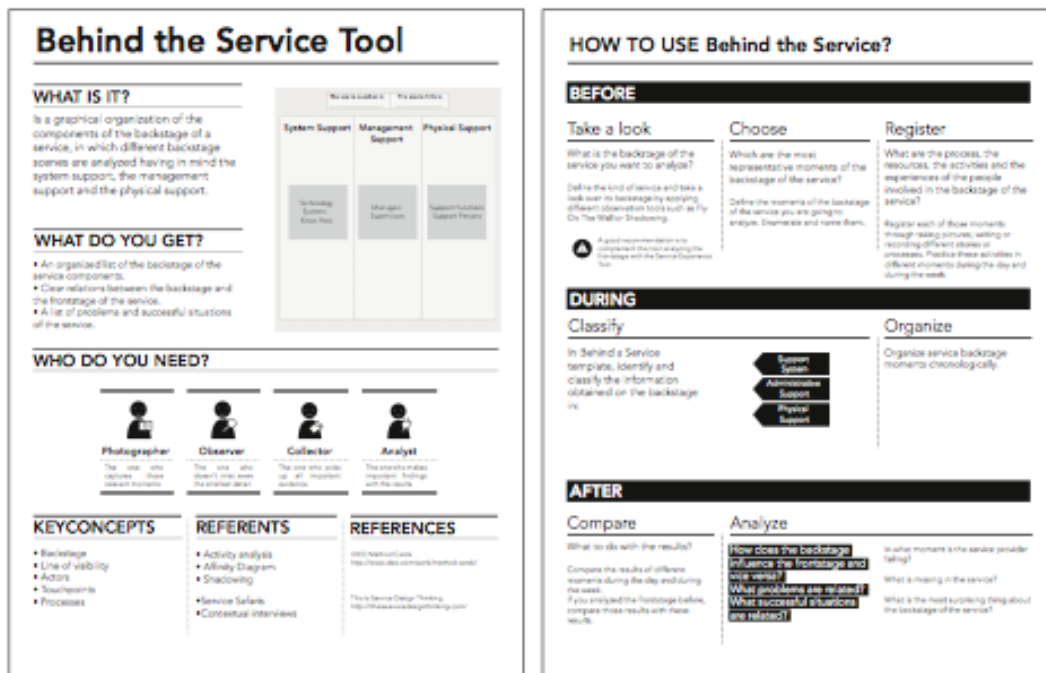
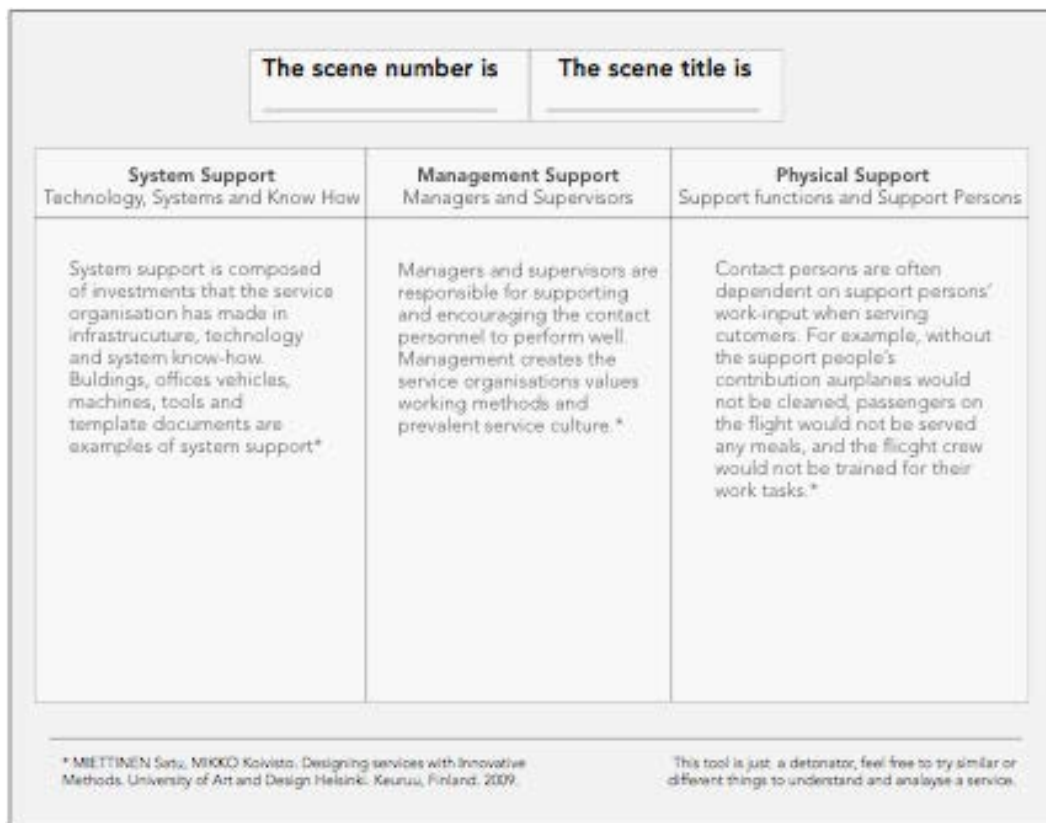**Figure 4: Behind the Service Tool instructions**

Figure 5: Behind the Service Tool Template (adjusted from the A4 original size).

3.3. Needs, benefits and opportunities

Origins: A group of students was working with small-retail food stores in low-income neighbourhoods. The task was to find a way to use the relationship between the tradesman and the people from the community as a channel to inform about nutrition and healthy eating habits. After gathering information of the community and defining profiles such as "the spoiled", "the piggy", "the pigeon" and "the tetrapack", the group used the question ¿what are their particular needs? to start the conceptualizing process. They found that "the spoiled" needed to be coddled because he found in the tradesman more a friend than merchant; "the piggy" needed to be surprised because this was the case of little kids with few coins left from a big purchase that their mothers did; "the tetrapack" needed to be recognized because he knows how to buy nutritive groceries, and "the pigeon" needed access to low prices, because he prefers to fly instead of paying a high price. From these benefits the students defined that the proposal had to include a personal treatment, a surprise factor, recognition, and low prices of the products.

Appraisal: As it was mentioned before, groups find hard to handle the transition between abstract stages of the model (from interpretation to delimitation). For students unfamiliar with qualitative processes these stages are complicated, and when the group lacks sufficient communication skills these are the points in which they tend to separate. With the connection between profiles, needs, benefits and opportunities being visible, teams are given a means to organize and discuss their findings.

What has been added? Starting from the students experience mentioned above, the instructions of this tool (Figure 6) guide the students on how to extract from the analysis phase needs benefits, and opportunities in a systematic way. The template (Figure 7) is thought to facilitate the information capture. From this point brainstorming sessions can be conducted to start defining ideas on how the service provider can satisfy the needs, deliver the benefits, or take advantage of the opportunities related to each actor or profile.

Figure 6: Needs, benefits and opportunities instructions

Figure 7   Needs, benefits and opportunities template

4 DISCUSSION

A multidisciplinary course dealing with User Centred Innovation, and Service Design is a complex system were each component alters the outcome of the learning experience. As it was mentioned in the components section, the human factor regarding both the interaction between professors and students (coaching), and the interactions that occur within groups though the project, is a central element of the learning experience. Supporting these interactions with tools derived from students' successful practices appears to be a way to facilitate those moments were groups frequently face difficulties.

Service design and user centred methodologies are extensive in qualitative data gathering, sorting, and visualization; and for these activities several tools are available in the state of the art literature. However, there is still room for adaptation of this tools regarding the particularities of a learning environment were not all designers are able to communicate and instruct on their practices to non designers, and were non designers are faced with a different way of dealing with projects. Having said so, it is clear that the tools presented in this paper don't intend to be "new tools"; they are rather a complement to widely known ones, such as story boards, blueprints, profiles or probes, and are proposed to be in one hand a means to elicit designers' skills, and on the other hand to provide resources and frameworks to non-designers, in the process of understanding, analysing and communicating the information gathered and processed as a group along the project.

4. Conclusions

This project has shown early results in general and specific aspects. Tools from the student's practices have shown that the attempt to make the process explicit for non-designers is a need when working in multidisciplinary groups.

The three tools with the instruction-template format described in this paper are currently being tested, to be integrated as part of the resources of the course. Although this is an ongoing project, preliminary results show that our tools can be useful resources that can help to close the gap between designers' language, practice and activities within multidisciplinary groups. The overall research project about the *Innovation workshop* learning experience presents evidence of the positive effects of an interdisciplinary approach to innovation; while designers are discovering the multiple applications that their knowledge and skills have in organizations, non-designers are learning the processes and disciplines of creativity as they seek to integrate innovation into their activities. These tools, their following versions and adaptations aim to lead designers to reflect and communicate better their practices, and to bring non-designers closer to design concepts, methodologies and procedures.

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