

Learning from others: A five-year experience on teaching empathic design

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Abstract

Design is about making our world a better place. Design education is a key factor in improving the quality of life and we have to teach our future designers to be better listeners, observers, storytellers and creators. A toolbox to help aspiring designers to seek insight through the aesthetic experience of others is essential to develop their empathic abilities and to learn how to think outside the box. However, it is surprising to realize that only a few design schools offer courses, let alone approaches, to engage in such methodology. This kind of toolbox was created in a pedagogical integration project conducted at the University of Montreal School of Industrial Design and was the result of five years of workshop teaching. Thus, this paper proposes a critical reflection on pedagogical challenges met in teaching empathic design practices. The observations collected in the workshops allowed three types of findings: the *a priori*, the learning experience, and the limits of the creative integration of data. As a way to integrate research based-tools to support and defend design strategies, the approach presented in this paper allows the use of more refined methods to teach empathic design.

Keywords

Empathic design; workshop teaching; user experience; design insights; design thinking

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Design is about making our world a better place. To achieve such a goal, we have to understand each other. We have to listen and see the points of view of people who are committing themselves to their everyday life, and then tell their stories and imagine ways we can make their lives better. We, as designers, can influence our visual and material culture and it is a tremendous responsibility. Empathic design is embedded in recent user-centered approaches where information on future users is collected from their everyday life to generate insights for designers and, in this way, making it easier for the designer to relate to them and to understand their perspectives. When used at the beginning of the design process, empathic design is particularly useful to identify design opportunities and develop relevant products and/or services (Postma, Zwartkruis-Pelgrim, Daemen & Du, 2012; Leonard & Rayport, 1997; Köppen & Meinel, 2012).

It is important to emphasize that empathic design is gaining in popularity and that it requires the learning of a new set of techniques astringed from traditional design practice (Postma, Lauche & Stappers, 2012; McDonagh & Thomas, 2011; Holt, 2012; Köppen & Meinel, 2012; McDonagh, 2008). Moreover, it offers a look at the overall picture regrouping different design approaches (i.e. participatory design, collaborative design, co-design or ethnographic design) developed in the 1960's (Sanoff, 2000; Sanders & Stappers, 2008; Sanders & Chan, 2007). Thus, these approaches are meant to guide designers in gaining a better understanding of complex design issues by understanding the everyday life of people.

Furthermore, empathic design can be linked to design thinking through its research methods for the gathering of information used to define a design project (Kimbell, 2009, 2011; Köppen & Meinel, 2012). Ultimately, empathic design thrives to shape a design project by using a set of approaches, techniques and tools meant to understand creatively user's experience in their everyday life and translate it into a product and/or a service (Postma, Zwartkruis-Pelgrim, Daemen & Du, 2012; McGinley, 2012; Köppen & Meinel, 2012; Thomas & McDonagh, 2013; Fulton Suri, 2003). However, empathic design must not to be confused with user-centered design. In fact, user-centered design is primarily concerned with the functional usage of a product and little with the overall experience brought by it like empathic design is seeking to accomplish.

Cope & Kalantzis (2011), addressed the role of the designer in a design project by noticing the importance of the stakeholders, and the actions and emotions arising from a design issue. More importantly, the authors suggested that the designers should put a particular attention on the meaning and experience of a product for the stakeholders. Thus, the authors proposed that the role of a designer is more frequently the one of mediator, facilitator, matchmaker and educator. Consequently, designers who use empathic design approaches, where a design issue is addressed by looking at it through the eyes of a user, must adopt a humble attitude in their practice by being sensitive to the perceptions and preoccupations of the users.

Empathy, what do you mean?

Brunel & Cosnier (2012) define empathy as having a 'sixth sense': intuitive and instinctive. Three dimensions can characterize empathy: cognition (i.e. the ability to understand others, to share their representations - thoughtful empathy); emotion (i.e. the ability to feel and to share our emotions, to perceive our affects - affect empathy); and behavior (i.e. the ability to imitate or coordinate our actions with others, share our actions and reactions - action empathy). Cosnier (1997) also say that empathy expresses itself through the understanding of other's intentions, the sharing of an emotion without feeling it ourselves, contagious behaviors, the feeling of sympathy towards a person with whom we share values (i.e. empathy is not the equivalent of sympathy). Therefore, empathy is an attitude that allows us to consider the thoughts and feelings of another person and to put ourselves in the other person's shoes. For their part, Köppen & Meinel (2012), defined empathy as the ability to understand the world (social cognition) and the ability to feel connected to the emotional experience of other's without living it (emotional construction).

Precisely because empathy is such a dichotomous construct between affective and rational capabilities, an education focusing on building empathy needs to be double tracked. This is realized on the one hand by teaching methods and tools (rational/cognitive) as well as imparting mindsets and, on the other hand by an empathetic culture (emotional) (Köppen & Meinel, 2012; p.5).

In 1997, Dorothy Leonard was one of the first authors to address empathic design in product design (Leonard & Rayport, 1997; Köppen & Meinel, 2012). She suggested that design was

intimately connected to empathy in its process when finely examining the usage context and the user experience. Therefore, empathic design can allow the fulfillment of needs that are difficult to address at first sight without the observation of experiences in ordinary life (Leonard & Rayport, 1997; Black, 1998; Köppen & Meinel, 2012).

Köppen & Meinel (2012) suggest that empathy in design divides itself in three components and that teaching it is not only a question of learning the techniques (cognitive and rational aspects) but also a change in attitude, a need to a new mindset (emotional aspect). Consequently, the authors reveal that empathy in design implies to learn to be empathic towards the users, to empathically communicate insights from users to the design team and to develop empathic teamwork within a multidisciplinary context. Moreover, Thomas & McDonagh (2013) emphasize that a young designer needs to be taken outside of his comfort zone and away from his references in terms of experiences to be empathic towards users. In other words, to acquire empathy, a designer needs to understand and comprehend intrinsically the position and attitude to adopt. In this way, the introduction of empathy notions in the workshops can offer an opportunity for young designers to take interest in the experience of others, to comprehend various stereotypical models and to avoid self-referencing (Thomas & McDonagh, 2013). This is even truer when considering vulnerable users with handicaps or living extreme situations. Furthermore, when designers take interest in possible users, they retrieve information and identify insightful design avenues that are more appropriate and more human. Thus, to teach this kind of methodology requires pedagogical tools that allow students to seize the diversity of human experiences and to translate them into adapted, attractive and appropriate products that respond to the design issue being studied (Thomas & McDonagh, 2013).

The five-year experience of teaching a workshop at the School of Industrial Design at the University of Montreal allowed us to explore and analyze the subject matter. The workshop was taught between 2007 and 2012 in the wake of a four-week class. In addition, one of the authors also supervised the final work of graduating students at the School of Industrial Design at the University of Montreal that used the same methodology. Design issue studied in this context were: the experience of taking medication outside of the home, the medical identification in everyday life (i.e. Medicalert bracelets), the daily ride on the subway, the carrying of objects in public transportation, *memento* and the urban furniture. The approach aspired to study a design issue and take into account the users' experience to define a design project from their perspective. Thus, students did not have a preconceived idea of what they were about to design and chose their project by defending the relevance of their design idea.

At first, the workshop aimed at understanding the user's aesthetic experience, but it rapidly changed to capture the experience of the users environment: the objects that composed it and how they appreciated it cognitively and emotionally. In this respect, aesthetic did not only refer to the object's appearance, but also to the user's sensitive and sensorial feelings towards the environment; aesthetic is the analytical sphere of attention, sensations and perceptions (Highmore, 2008; Gagnon, 2012). In this perspective, an aesthetic experience and the appreciation of an environment or object is related to its form and characteristics, but also to its use, the activities that it allows, the cultural or social models, the individual experiences and values, and the emotions that are generated.

Approaches used in the empathic design workshop

A pedagogical tool was developed within a toolbox that included methodology model-sheets to help understand design issues with techniques used to create personas and design scenarios (Gagnon, Côté & Barré, 2012). Approaches presented in the toolbox were drawn mainly from traditional methods of inquiries and analyses taken from qualitative research seen mainly in the

ethnographic and anthropologic tradition (Bisson, 2004; Bisson & Gagnon, 2005). At this point, it is important to mention that two of the teachers (and the authors of this paper) were trained in qualitative research tradition and more specifically with the grounded theory tools to realize fine interpretations of phenomena with the construction of conceptual categories leading to the synthesis of the studied subject. This is pretty close to what Köppen & Meinel (2012) recommended with the introduction of the notion of metaphor used in empathic design with the analysis and synthesis tools. Thus, they also suggested the use of the persona technique, which we also promoted in our approach.

The techniques presented in our toolbox were created to sharpen skills like listening, seeing, telling and imagining in young designers. In a world where professional designers need to integrate research tools to defend more appropriately their design strategies, this approach helps designers develop a more refined analytical method in the creation of a design strategy. In that perspective, these tools relate to what is currently called by many the 'design research methods' (Sanders & Chan, 2007).

The toolbox was created with four distinct activities, which had, as a goal, the understanding of the user experience in order to integrate it insightfully in a design issue. First, these activities sought to develop empathic competencies needed to understand an experience or an experience context. Thus, a design student improved his listening and seeing abilities in analyzing the user experience. Second, the student was invited to create a persona using the information he gathered. Thirdly, this technique allowed a recapture of the user experience through a fictional character and a scenario. Finally, the approach's objective was for the student to find new design ideas and opportunities linked to the information discovered during the first two stages.

The toolbox did not include all the techniques or methods that are available to designers. The tools presented to the students were chosen, on the one hand, to acquire techniques needed for this kind of approach and, on the other hand, to explain furthermore the ones which are the least defined in the current published literature. The tools available to designers to help them acquire more knowledge on users and inquiry techniques are mostly derived from ethnographic techniques. With this toolbox, students were invited to learn the bases, which are the semi-conducted interviews and the observation techniques and adapt them to the other techniques when needed in the construction of their design project.

Understand and capture user experience

At this point, it is important to remember that the model-sheets of the toolbox were divided in four activities: listening, seeing, telling and imagining. The goal was for student to acquire the techniques needed to understand and capture user experience. In the following, we will explain briefly these four activities and their related techniques.

Listening

The purpose of this model-sheet was for student to engage in a semi-conducted interview for the construction of a persona based on real life experience and ultimately, to create a realistic and sensible scenario. The students were given information on semi-conducted interviews through semi-conducted interview guides, participant recruitment methods, ethical proceedings, first impression notes, storytelling and generation of themes and insights from the collected data.

A semi-conducted interview is a qualitative method to collect in depth data. It is not a survey or a focus group. This method is meant to acquire the point of view of a person on a particular phenomenon through open-ended questions. The interview aims to collect the knowledge of the person being questioned through a semi-structured conversation where the designer is an active

listener. In the end, this technique is meant to detach ourselves from our experiences and to consider the design issue from the standpoint of the users. Then, it is possible to share the experience of others through storytelling where the experience is described sensibly and realistically. The story told should insist on the lived and felt experiences of a person and not on a succession of facts and disembodied actions. We should know who the person is; how and why she/he acts that way, what she/he likes and dislikes, what are her/his motivations, what restrains or bothers her/him, how she/he interacts with the environment, what she/he thinks, etc. Moreover, the students should be able to put forward themes and metaphors declined from key ideas extracted from the interviews (Köpenn & Meiner, 2012). Afterwards, these themes and metaphors could be merged and generalized to meet different categories (i.e. actions, feelings, lived experiences, contexts, locations, uses, practices, etc.). What we are looking for are insights declined from interviews to acquire a new and original standpoint on a design issue.



Fig. 1: Qualitative inquiry. Lucie Brillouet's final student project, School of Industrial Design, University of Montreal, 2011.

Seeing

This model-sheet was for students to find design opportunities in known and/or unexpected places by staying sensitive and vigilant towards the environment. Ultimately, the students were invited to improve the quality of life of the people who interact within that environment. Thus, the students had to learn an array of techniques to make the inventory of places and objects related to the design context studied. They had to note observations on the experience of users (behaviors, uses and feelings) associated with the chosen design context; to record thoughtless acts, to analyze visual data and finally, to create a storyboard with all the collected information.

In the end, making the inventory of a define space offers the possibility to identify and take into consideration objects, equipment, materials, and architectural or landscaping elements. Moreover, observing the user experience *in situ* helps the understanding of a design issue from their standpoint. In other words, it means putting ourselves in the shoes of others to see the issue from their points of view; to look at a situation from a different standpoint and develop a profound comprehension of the user's experience that goes beyond our preconceptions. In this way, a real empathy towards the users is developed and it guides the design project insofar. Thus, the observations helps to validate the *listening* data collected through the interviews and

to link what was said and what was seen in reality. Finally, the *seeing* part of the toolbox offers the possibility to discover new design avenues that a design team would not have collected if they had not analyzed the environment of a given design issue.

Furthermore, the students were invited to add a more expert perspective to their work by adding a visual analysis of the elements met in the design context and therefore to support the user experience observation. At last, a storyboard can be created to synthesize the information collected through the sequencing of the events met in the studied situation. However, this tool is not the only one that could illustrate the synthesis. The *customer journey* is another tool that could be used amongst others.

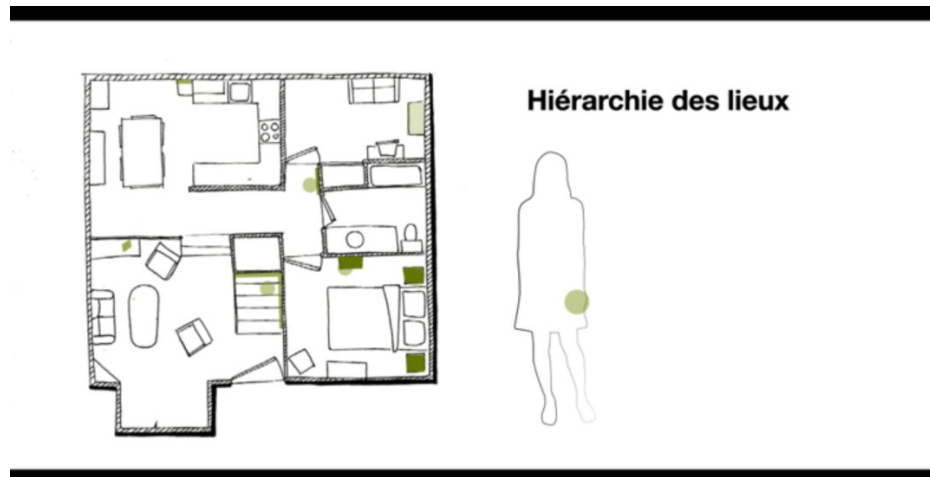


Fig. 2: A memento map. Claudie Rousseau's final student project, School of Industrial Design, University of Montreal, 2011.

Translate and interpret the experience creatively

Telling

This model-sheet was meant for students to translate their findings from the interviews and observations into a persona and a scenario. A persona is a fictional construction based on a real person to communicate the user's needs, expectations, experiences, lifestyles and ways of using products or services (Miaskiewicz, 2011). Grudin & Pruitt (2001), say that the persona technique allows designers to go beyond traditional user-centered design approaches. Thus, when combined to other methods, the persona technique developed as a tool in synthesising the data, offers a profound understanding of the relation between users and products or services without integrating preconceptions into the design project.

Moreover, the persona is not an invention; it is thoughtfully built with the information collected from interviews and observations. A persona is not a stereotype and consequently, has to exceed *clichés* and generalities (Turner & Turner, 2011). In short, the creation of a persona is the collection of information of a design issue from a user standpoint, and to fictionally transpose it. Every persona is presented thoroughly (age, gender, social status, occupation, location, profession, values, beliefs, motivations, ambitions, etc.) and their experience of the design issue is submitted in the form of a scenario (actions, appreciation, depreciation, feelings, perceptions, etc.) (Van der Lelie, 2006).

In addition, the personas and scenarios offer anonymity for participants in the interviews and observations by only using pertinent information to the design issue without adding personal

information. It is interesting to emphasize that personas and scenarios can be created by combining interviews and observations to enrich the studied design issue.

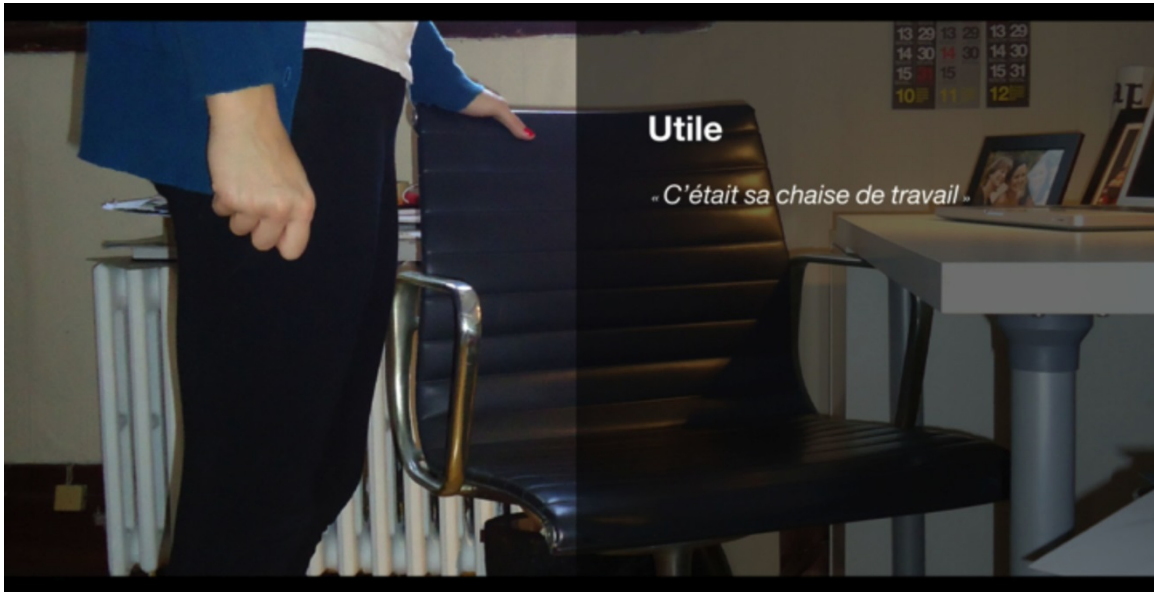


Fig. 3 “It was his work chair “.Claudie Rousseau’s final student project. School of Industrial Design, University of Montreal, 2011.



Fig. 4 Memento issues. Claudie Rousseau’s final student project. School of Industrial Design, University of Montreal, 2011.

Imagining

This final model-sheet was meant for students to define design opportunities by the identification of insights and critical points within design issues. At this point, it is time to analyze the results from the data collection; what had been heard, seen, told and imagined to define a design issue. The goal is to magnify important aspects of the design project discovered through the previous

qualitative research. In other words, the students had to identify design insights and critical points depicted from the description of personas and scenarios realized earlier to understand and guide arising design issues.

The main idea is to suggest and explore design issues by generating questions from the insights found previously to better identify the design possibilities lying within them. The purpose of this *imagining* stage is to identify inspiring and relevant design issues to meet user's needs and ultimately make their lives better.

Thus, the definition of design opportunities must be a direct response to design issues. The idea is to propose context interventions improving user experience. However, the propositions must be presented summarily and in a general manner without too much detailing. The objective is not to provide a final design concept; it is rather to submit design propositions answering previously identified design issues without putting much attention on production details. What is sought after is a general design concept arising from user's expectations and integrated in the context of the design issue.

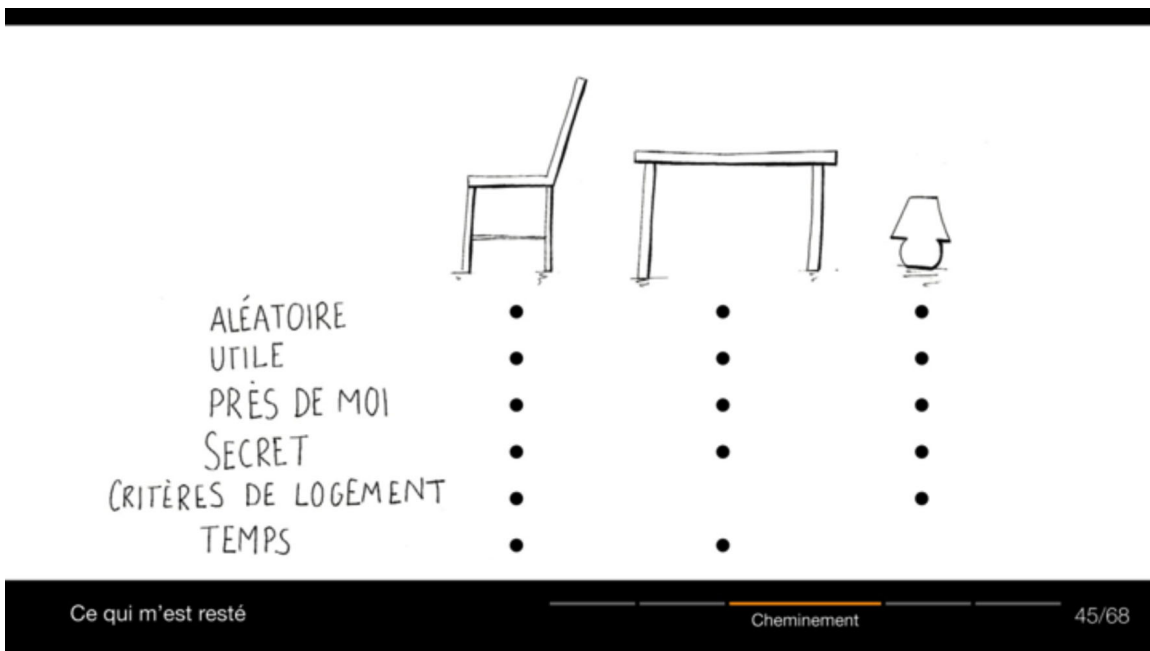


Fig. 5: Preliminary criteria: randomness, usefulness, proximity, secrecy, living area, time. Claudie Rousseau's final student project. School of Industrial Design, University of Montreal, 2011.

Observations and results

Five years of teaching a workshop on empathic design allowed us to learn from this experience and refine our approach. The paper is therefore based on the observations shared by the eight teachers who participated in the workshops throughout the years. Without going into details, the methodology used to analyze the collected observations rests on a qualitative and exploratory approach seeking to conceptualize categories to help the understanding of a defined phenomenon (Paillé & Mucchielli, 2003). Thus, the conceptual categorization of the observations collected in the workshops allowed the emergence of three types of findings: the *a priori*, the learning experience, and the limits of the creative integration of data.

The a priori

We noticed that some students showed reluctance towards the user experience and especially towards qualitative data. In fact, it seemed that these students gave a priority to quantitative data over the subjectivity related to the approach. A tendency to extreme relativism was also observed in those students even though we were teaching intersubjectivity and its ability to make the world understandable and liveable for us because we are sharing similar experiences and can relate to one another. Furthermore, these students easily discarded information collected directly from the users because they did not consider them experts of their experiences. For example, in one of the workshops students had to investigate the problematic of taking medication outside of the home. The first insight discussed was «Ziploc® in a pocket», in other words, people often used a flexible container to transport their medication because it was considered more practical than a rigid bottle. However, none of the students were inspired by the soft and flexible material insight and the majority proposed a rigid container for this design challenge. In a way, they were afraid of being told what to do and of being limited in their creativity by non-designers. This is especially interesting because even some teachers in design schools have a difficult time adopting this kind of position. However, this did not concern the teaching staff of the workshops mentioned in this paper.

The learning experience

New perspectives are available to young designers with an empathic attitude:

- Designers can question stereotypes and avoid caricatured personas (i.e. an old woman with a cane, a business man in a navy suit, a hip teenager, etc.) The first years of teaching the workshops showed us that students often put aside information from their interviews to simplify the design problematic and translate their findings into stereotypes. For instance, the students categorized people by age, profession and activities; those actions tend to diminish the range of individualities and thus, identify people in regard to socio-economic status. For example, some students described the teenager they interviewed like a typical girl from an American television show; a beautiful young woman, hip, well dressed and sexy. By doing so, the definition of a design problematic is too sparse and therefore, lacks in credibility.
- Designers can open their minds and discover unexpected design issues (i.e. illiteracy across every age group, sickness in young people, new family patterns and issues related to it, etc.). For example, a group of students, while investigating the problematic of taking medication outside of home, didn't consider age stereotypes and created a persona with the information from the interviews of a young woman and an elderly woman. In doing so, the design insight emerging from that persona was about the personalization of the containers; religious icons in the case of the elderly woman and pop culture icons for the young woman.
- Designers can have fun while putting themselves in the shoes of others (i.e. taking the place of another person for a day, new ways in approaching people, having fun while making discoveries, etc.). This kind of experience can be very positive and rewarding (Köppen & Meinel, 2012).

The limits of creative integration of data

Some students showed difficulty in translating user's experiences into design opportunities. In fact, during a workshop dedicated to the experience of taking the subway, no students explored the relations between signalisation and orientation (up and down, «*perdre le nord*», etc) as a way of identifying cultural geography and/or cardinal orientation and translate it into a poetic design intervention. However, it seems equally complex to interpret these experiences in the

actual design practice (Postma, Lauche & Stappers, 2012; Köppen & Meiner, 2012). Postma, Zwartkruis-Pelgrim, Daemen & Du (2012) also noticed it in design teams. Thus, the creation of personas can be very useful but the emotional aspect of the experiences collected through interviews is often wasted during the design process. In this perspective, Postma, Lauche & Stappers (2012) proposed the introduction of an analytical framework to share with co-workers and, in this way, rapidly focus on organizing the collected data to prevent losing fine information. In this way, the authors also suggested organizing the design process within a framework developed through the literature linked to the chosen design issue. Finally, some students did not understand the argumentative and strategic role of the approach to justify the design project. Nevertheless, the mentoring of students in that perspective helped some students understand the validity of these methods. For instance, in a workshop on the experience of taking public transportation, a group of students interviewed an elderly woman who declared having trouble orienting herself in the subway. This person explained that she preferred asking someone for directions when taking that type of transportation. The more the students explained their interview to the teachers, the more it became apparent that the elderly woman seemed to be illiterate. This is the reality of almost half of Quebec's population¹ and therefore, has important design implications when undertaking a communication and guidance system. Moreover, in an academic environment where the students are more educated than most of the population this kind of acknowledgement is often overlooked.

Conclusion and discussion

One of the purposes of the workshops was to shatter the star designer myth, the almighty designer illusion! In this perspective, Binder et al. (2011), based on Bruce Nussbaum's text (2007) - *Are Designers Enemy of Design?*, talked about the perceptions of design by members of its community. On the one hand, Nussbaum (2007) indicates that designers seemed to be reluctant to integrate the standpoints of ordinary people to create products with them. Furthermore, Nussbaum stresses that designers can change society but that the opportunity appears to be underestimated by designers themselves. In fact, these concerns are more likely reflections of the myth of the almighty designer that is still promoted in the design community. Thus, most of the reactions from the designers were linked to the notion of good design, which puts emphasis on the possibility of preventing inconveniences as an inherent expertise. In such, the idea that a good designer is already preoccupied by users or ecological issues are recurring and moreover, that good design can be perverted by marketing or business considerations.

In the light of these discussions, Binder et al. (2011) suggested some challenges for design in their book's foreword:

- An important transformation in design practice is happening where multidisciplinary teams of professionals from multiple horizons (i.e. human sciences and engineering) are involved. Therefore, the hegemonic tendencies of designers as well as the narrow-mindedness of some disciplines resulting from silo-based approaches tend to constrain collaboration between parties, making it still too often unproductive and ineffective;
- A definition of what quality means in design is still an important and contentious point to address in relation to the aesthetic and appreciative relation between a person and the

¹ According to the results of an international inquiry on adult literacy and skills, 49 % of Quebecers, aged from 16 to 65 years old, have reading difficulties. Moreover, 800 000 adults are illiterate. **Source:**

http://www.fondationalphabetisation.org/adultes/analphabetisme_alphabetisation/

environment. Therefore, we have to ask ourselves what is a valid judgment on design and who is entitled to address it;

- An inquiry on innovation and design should take place to define, amongst others, the accuracy of what makes a good design and, if it necessarily includes the innovation factor and vice-versa.

The idea is to acquire a better understanding of the role of creativity and innovation in our society through its underlying models to encourage the interpreter or mediator status of the designer (Krippendorff, 2006; Verganti, 2009). Moreover, it should promote the strategic role of the designer in the development of innovative design avenues (Cope & Kalantzis, 2011). Besides, Verganti (2009) underlays that the knowledge of tools and techniques in design is insufficient and that design is first and foremost a capacity to interpret the world and make sense of it through the creation of products and services. In that perspective, design must develop frameworks allowing the analysis of contents and the identification of stages in the design process (Postma, Lauche & Stappers, 2012). Hence, Postma, Lauche & Stappers (2012) found that professional designers had a difficult time analyzing contents that requires knowledge in the social sphere. In fact, the authors suggested the use of the *Activity Theory* framework to help designers organize the collected information. However, this kind of framework does not grasp the emotional dimension enough and strips away a significant part of the richness of the collected information.

In fact, many believed that integrating data emerging from user perspectives in the work of a design team requires an open-mind and a wide range of knowledge (IDEO, 2011; Köppen & Meiner, 2012). Therefore, multidisciplinary teams composed of social science experts and design experts are recommended. Furthermore, teachers should be trained or have an education background with anthropologic and ethnographic methods to be able to work with the kind of data issued from these methodologies. In the case of the workshop teaching, the time allowed for students to acquire these tools should be spread out on several months. However, it is was not the case of our teaching experience where students were only allowed four weeks to accomplish the work.

Nowadays, design professionals increasingly need to integrate research based-tools to support and defend their design strategies. Thus, the approach presented in this paper allows the use of more refined methods to analyze and develop design strategies based on empathic approaches. In the end, the toolbox created in the case of the pedagogical integration project conducted at the School of Design of the University of Montreal is not only useful for students but also for design teachers and professionals wishing to offer a better monitoring of design projects in line with a better understanding of user needs and aspirations. The tools and techniques talked about in this paper are linked to what is often called 'design research methods' that offer design professionals a better view on design issues and thus, a better guide in making design choices. There is no doubt that the teaching of these methods is useful, but they have certain limitations like it was discussed before. Maybe time will enable us with an even better apprehension of their limits in order to integrate them even more creatively in design projects.

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Caroline Gagnon's research focuses on a wide array of contemporary issues regarding to social and public design. Utilizing qualitative methodology, she tries to capture the relational impact between the social conditions and aesthetic values associated with the environment and community life. She teaches research method in design (ethnographic methods in particular) to apprehend the social perception of design projects. She is concerned by empathic design as it helps to understand the human experience and orienting projects. In the early years, she is

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