PROCEEDINGS

DRS LEARN X DESIGN 2019

insider knowledge

Fifth International Conference for
Design Education Researchers
9-12 July 2019
Middle East Technical University
Ankara, TURKEY

Editors
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Proceedings of DRS Learn X Design 2019: Insider Knowledge

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ISBN 978-1-912294-00-8

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Cover and conference identity design

Dalsu Özgen Koçyıldırım

Publisher

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Middle East Technical University
Faculty of Architecture
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Universiteler Mahallesi
Dumlupinar Bulvari No:1
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http://id.metu.edu.tr/

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An *In-between* Ludic Approach for UX Research: A Case Study

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doi: 10.21606/learnxdesign.2019.15010

Abstract: UX research is a still under-defined topic, in which a definite sense for both researchers and practitioners is to be found. In this context, we propose a UX approach to be introduced as an integrative educational method, useful to translate user studies results into indications for the future experience that users will have in relation to the designed product, service or installation. Our approach is based on an early and direct involvement of the user, the scope of which is about letting the designer get inspiration throughout the ideation process. It is imagined to stand in-between the explorational and generative phases of the design process, putting itself in an interstitial space between quantitative or qualitative research, ethnography and co-design, detached analysis and proactive cooperation. In this way, we are trying to go beyond the concepts of human-centred design, towards a design-driven research that makes UX methods and tools meaningful for the designer. The approach is described through a hands-on experience of a student's thesis work and is purposed to set the beginning of a conversation for future developments.

Keywords*: UX research; design-driven research; beyond HCD approach; user involvement; UX in education*

1 Introduction

The purpose of the contribution is to propose an integrative approach to UX. It is presented through a hands-on experience that refers to a design thesis project developed in 2017 (Sciannamè, 2017), at Politecnico di Milano, and set in Bagatti Valsecchi's House Museum: a fascinating historic house in downtown Milan, populated by its owners with original and fake Renaissance artworks and furnishing, and pointed by Orhan Pamuk as the main inspiration for its masterpiece *The Museum of Innocence*. The project lays in the fields of interior and interaction design, as it aims to improve spaces through a meaningful experience of them, provided by contemporary digital technologies that need to be unobtrusively embedded in the space itself.

It can be stated that this context of user experience (UX) research perfectly reflects Hassenzahl's (2011) *new millennium Experience Society*, where people are no longer interested in material goods, preferring meaningful and memorable engagement and where, therefore, design has to transcend the object-centred – or, in this case, exhibition-centred – attitude, in favour of an experience-centred approach. According to the wide-ranging tendency in design research today, experience and interaction design are inevitably intertwined with digital technologies (Dourish, 2001; Kaptelinin & Nardi, 2009, p. 253; Hassenzahl, 2011; Rasmussen, 2013, p. 2), hence UX has to deal with issues related to human-computer interaction (HCI), but extendable to design in general: the meaning of UX is not to be found in the instrumental values of a product or service, yet in a more vast set of variables regarding the user's sensations and perceptions towards a positive contribute to his/her quality of life (Hassenzahl & Tractinsky, 2006).

In the light of these premises, the paper intends to highlight the current principles and practices that guide UX research to propose an integrative approach: a methodology which stands in-between ethnography and prototype testing, collecting quantitative data and qualitative impressions, context analysis and co-design. The approach is then described through its application in a hands-on experience, specifying the methods that brought to its definition and the reported results. Ultimately, the valuable contribution as well as the limits the approach presents, both in the design process and in the academic context, are discussed in order to start a conversation towards future developments.

2 Theoretical Setting

The attempt to reach a definition of UX necessarily leads to a holistic focus on the user (Hassenzahl & Tractinsky, 2006; Väänänen-Vainio-Mattila, Roto & Hassenzahl, 2008; Hassenzahl, 2008; 2011). This does not imply an elemental vs Gestalt approach (Blythe, Hassenzahl, Law & Vermeeren, 2007, p. 1), nor a deconstructive attitude excluding the situatedness and uniqueness of the experience (Law, Vermeeren, Hassenzahl & Blythe, 2007). The holistic approach is here intended just as the opposite of reductiveness (Blythe et al., 2007, p. 1), it is the overcoming of utility and usability in favour of the broader and more human definition of UX deriving from *encountering systems* (Roto, Law, Vermeeren & Hoonhout, 2011, p. 6), thus encompassing active and passive interactions as well as a wide range of artefacts. As both Forlizzi and Battarbee (2004) and Hassenzahl and Tractinsky (2006) suggested, UX needs to shift attention to the pragmatic aspects of an interaction – such as physical, sensual and cognitive qualities – as well as to more subjective ones – like aesthetic, hedonic stimulation, identification, evocation, emotion and affection – to really comprehend *an experience* (here intended in Forlizzi and Battarbee's definition, as something that remains unique and with a sense of completion in one's memory, and which may inspire emotional and behavioural changes). Even if UX is influenced by the characteristics of the designed system and by the context where it takes place, it is evident that a major part is played by the users' internal states (Hassenzahl & Tractinsky, 2006; Roto et al., 2011) and, thus, a user-centred design approach is inevitable.

Through experience we give meaning to the world (Wenger, 1998, p. 51; Dourish, 2001, p. 129) so, from the designer's point of view, UX needs to be about the meaning involved in the interaction between the user and the outcome of the design process (Forlizzi, 1997, p. 12; Ciolfi, 2004, p. 27). By the way, there is no common acceptance about the meaning of UX in design practices, it is not clear what UX mainly represents and which is its aim. Instead, there are studies about design-inclusive UX research, in which design is considered part of and contributing to UX research, and the modalities of this relationship are investigated (Vermeeren, Roto & Väänänen, 2016).

In human-centred research and design, even the involvement of the user is not univocally pursued. It can be requested in different moments and with different purposes throughout the design process. Furthermore, the users to whom the designer addresses his/her work may change, considering past, present or future users. As Zhang and Dong (2016) explain, user studies can be synthesized in three different approaches: (i) *empirical studies*, based on the analysis of past experiences; (ii) *experimental studies*, in which designers learn from the present situation; and (iii) *scenario-based studies*, focused on an expected future. Additionally, the methods of enquiry differ on the basis of the UX researcher's attitude: they can be mainly qualitative, corresponding the requirements of a creative process; but also strictly quantitative and replicable, following rigorous protocols gathered from science (Hanington, 2010). From this primary distinction, where both are valid and valuable paths, the involvement of users is again differentiated according to the activity of the engagement the researcher requires. As stated by Zhang and Dong (2016) in their four-modelled framework, user studies can be conducted through an indirect involvement, by *designers representing users* – after an ethnographical investigation, for instance – or, increasingly augmenting users' participation, by *designers consulting users* – we can think about questionnaires, focus groups, structured interviews, etc. –, by *users participating in the design process* or even by *users as designers* – as utmost result of co-design practices. Eventually, UX can inform different phases of the research and design processes depending on its attended contribution and

motivations: it can be introduced preliminary in the process, during the *exploratory* phase, when the researcher/designer needs to discover information about the people he/she is targeting, their context and their habits; during the *generative* phase, both in a projective or constructive way; or, after the product or prototype is completed, during the *evaluative* phase, to test the solution in an iterative process (Hanington, 2010).

As Hanington (2010) asserts, human-centred designers and researchers need a balance between the multitude of existing methodologies for UX inquiries. This is not just about the quality or quantity of data, nor the activities conceived to collect them: a key factor also regards the role users have to play in the design process.

In this context, we propose an approach that stands in-between qualitative and quantitative methods, ethnography and co-design, detached analysis and proactive cooperation, something that is currently foreseen but not sufficiently deepened: an early involvement of the user to guide and shape the design process (Jordan, 2000; Forlizzi & Battarbee, 2004; Yargin, Süner & Günay, 2018).

The reason for that can be outlined from Hassenzahl's (2011) definition of experience design. If user experience can be summarized by answering the questions *what, how* and *why* – hence tracing the functions, the modalities and the reasons for the interaction with a product or service – the designer aiming to design *for* experience (Kolko, 2011) firstly has to identify *why* he/she is doing that, which are the needs and the emotions involved and, most importantly, what is the *meaning* in people's interactions (Forlizzi & Battarbee, 2004) and, therefore, in his/her own work. A clarification in the scopes of UX research and design is fundamental and primary for the designer approaching the discipline. Maybe figuring the user as the unique and pivotal centre of the design process embeds the risk to remain stuck in present paradigms, while "[…] the research must be directed toward new interpretations of what could be meaningful to people" (Norman & Verganti, 2014, p. 96; Forlizzi, 2018). In this scenario the designer gains a central role by changing the meaning of UX. Placing itself in an interstitial space between ethnography and testing, UX research becomes design-driven. A renewed importance is given to the designer's *personal interpretational process*. (S)he can bring inspiration from user studies and technologies through a personal interpretation of the results of his/her inquiries, finding the balance between the validity of qualitative and quantitative methods (Hanington, 2010), both because the designer defines the tools to involve users, already applying a personal lens, and because qualitative data is open to interpretation.

In this context of the user's early involvement as an inspirational process for the designer, exploratory design games are an interesting solution to undertake. In fact, games and play have been assessed as tools for research (Habraken, & Gross, 1987), as well as design (Ehn, Sjögren, Greenbaum & Kyng, 1992) and educational tools (Buur & Iversen, 2002). Focusing on their research employment, they can be means for both collaborative inquiry into existing practices and participatory visualisation of possible futures (Brandt, 2006), covering a wide range of design issues to investigate the uncertainty of reality and therefore envisioning strategies to cope with its complexity (Brandt, Kjærgård, Schou & Vallin, 2011, p. 12). They have a few peculiarities that identify them as perfect instruments for involving users. First of all, exploratory design games are intrinsically engaging and enjoyable for people to take part in (Brandt, 2006, p. 65), especially if they are designed according to an embedded approach (Kaufman & Flanagan, 2015), so that the real purpose of the game is concealed to the player. Then, they are able to make the users feel at ease, creating an informal atmosphere and even fictional game worlds for them to empathise with, figuring scenarios. In fact, abstraction and stylization allow people to eliminate functional knowledge and experiences (Brandt, 2006, p. 58), freeing their creativity. Fundamental components of exploratory games are their materials that work as boundary objects (Star & Griesemer, 1989). At the same time, they are shared by the participants but still they leave space for different interpretations (Brandt, 2006, p. 63). Especially if they are contextualized, they facilitate people's remembering of experiences and help setting a discussion, also, in a very brief amount of time (Brandt et al., 2011, p. 10). Due to their characteristics, design exploratory games can be used for different purposes, such as to conceptualize design, exchange perspective, orientate negotiation and work-flow, or scenario (Brandt, 2006), but there cannot be a further specification of their traits as they are essentially flexible, varying upon context, purposes, application areas (Vaajakallio & Mattelmäki, 2014) and even user's typology.

Thus, our proposal comes with a shift of meaning in UX research. Acknowledging the current tendencies, which are still under definition, we propose a different way to exploit user studies into the design process, considering them as sources of inspiration for the designer's personal process of concept development and using games as triggers of UX research. In the next section a hands-on experience of the approach here discussed is described as an example.

3 Methods

3.1 Exploratory Research

Proposing an approach for UX research does not imply the crossing out of any other. The contribution aims to suggest a method that can be complementary and not substitutionary to current practices. In fact, in the reported case, the research starts with a primary quantitative collection of data and an ethnographical enquiry (Stake, 1995).

The Bagatti Valsecchi's Museum has been selected for a well-established relationship with Politecnico di Milano and for its richness in stories to be unveiled to visitors. In order to get acquaintance of the museum, the location for which an interactive installation had to be designed to enrich its spaces, and convey additional cultural contents, an investigation of the users targeted by the project has been conducted.

Firstly, quantitative data about the visitors of the previous semester were collected through the statistic system of the museum, inferring their geographical provenance (Italy/other countries), an approximation of their age and of their cultural interest (whether or not they were possessors of museums or cultural heritage associations memberships). Secondly, to get a little closer to the users of the museum and to comprehend its dynamics, an ethnographical enquiry based on unobtrusive shadowing has been undertaken. That seemed to be the better solution to get impartial information about visitors' experience inside the museum, as their direct involvement in this exploratory phase could have vitiated the results. A sample of one hundred people or groups have been *followed through* their entire permanence in the museum spaces to understand their behaviour and attitude towards the rooms and exhibited goods. They were warned at the beginning of the visit that an ethnographic study was in progress and, frequently, the same visitors were also involved in the activities described in the following. In the meantime, a structured form was being filled in to take notes about the visitors' profiles (age range and spoken language); their social condition (alone, in couple, in group); the tools used (audio guide, informational sheets, Silent Book, app, guided tour or no tool); the path followed; the stay times for each room; the objects that caught their attention; their general attitude; and any particular behaviour they manifested in the different places. This system had the limit to be based just on the researcher's observation in a time span of about a month, that is why a complementary qualitative research has been undertaken. Taking advantage of their long experience at Bagatti Valsecchi's, the museum personnel has been directly involved in the research through semi-structured interviews. Fourteen volunteers answered questions aimed at completing the information about the visitors (in the first part of the interview) and their relation with the museum (in the second part), adding multiple and more expert points of view to the exploratory research. They were asked about visitors' profiles (approximative age, provenance and cultural background); the most appealing rooms or goods; frequent questions and comments; visit modalities (tools and social configuration); the efficacy of the communication tools; eventual missing information; and – more subjectively – their opinion about the reasons for people to visit the museum and what could be improved.

Although, despite the gained familiarity with the place and its users, none of the collected information provided a hint on the *meaning* for the intervention to be designed, which we previously stated has to be the purpose of UX research.

3.2 *In-between* Approach

In the *generative* phase of research (Hanington, 2010), which stands in-between the deepening of users' exploration and the beginning of the creative process, an active involvement of the visitors seemed to be the best way to guide and shape the design process.

Through a direct confrontation with the possible users, a complexity of unquantifiable factors could be acknowledged, enriching the quantitative research with impressions coming from a personal contact. To get to the required results, the research took inspiration from co-design modalities (Methods: Co-Design Resources for Cultural Heritage Professionals, n.d.; Design Kit, n.d.; Service Design Tools, n.d. to give some examples) and design exploratory games, where active participation is encouraged. Here is to note that the peculiarity of the proposed approach does not stand in its methodology yet in its scope. As a matter of fact, co-design practices and ludic activities inform the generative research in a constructive way (Hanington, 2010), enhancing a positive dialogue that lets users participate in the design process or even act as designers (Zhang & Dong, 2016). Conversely, here the inquest had a projective aim, to provide inspiration for the designer's creative development.

In particular, simple physical games have been chosen as instruments of inquiry due to different reasons. First of all, they are participatory, they guarantee a common ground for conversation (Brandt, 2011) as game is instilled in human society since its origins (Huizinga, 1938). Moreover, games respond to the necessity of acquiring spontaneous and

unvitiated reactions since, when people entre the parallel dimension of a game, no matter how basic it is, they feel freed from social and cultural expectations (Csikszentmihalyi, 1990). Ludic materials look much less inquisitorial than questionnaires, letting people feel more at ease throughout the investigational activities. Indeed, tangible items encourage users' engagement, especially in a museum context (Dudley, 2009), acting as *boundary objects* (Star & Griesemer, 1989; Spallazzo & Mariani, 2017): the tools have different meanings for the visitors (who primarily perceive their ludic value) and for the researcher.

Following, the two UX research-oriented games are described. Both were to be proposed at the end of the visitors' tour of the museum, just before leaving. Visitors could choose whether to participate to the research by playing one or both games, or to decline. Ultimately one hundred samples per each activity were collected.

As a common practice, the games were introduced by some ice breaking questions, aimed at profiling people. The information requested were the same as the ethnographical inquiry (range of age and provenance) with the addition of their profession (to understand if there were relations between that and their cultural interests) and if it was the first time for them visiting the Bagatti Valsecchi's Museum.

3.2.1 Play Your Cards

The first activity was intended to investigate visitors' reflections, preferences and emotional connections with the different rooms of the museum.

It was composed of 18 cards, representing each room of the museum, and a dice with six different questions, initially undisclosed to the visitor (Figure 1). Firstly, players had to freely choose three cards, providing a reason for each choice, then they threw the dice and answered the question with one of the cards previously selected and a motivation. Whether none of them reflected the players' opinion, they were free to give their actual answer, as the goal of the game was to originate a conversation to collect the greatest amount of information (for the same reason, a very short list of optional questions completed the form related to the activity). As the initial pick was completely undetermined by the rules of the game, in order to gather any kind of feedback and thought from the users, questions about negative feelings have been avoided in the dice to favour the most predictable attitude. Nevertheless, they were also not too obvious so that a deeper reflection was stimulated. Some examples are: *Which room would you like to have in your own house?* or *of which room would you send a postcard? To whom?*

Figure 1. Cards and dice of the "Play Your Cards" game (Sciannamè, 2017).

3.2.2 The Secret Inventory of the Bagatti Valsecchi Brothers

For the second game, the visitors had to be more detached from their real experience, to feel free to explore their purest desires. The activity was, in fact, designed to understand what visitors would like to discover, experience and perform inside the museum, but such a request would have overwhelmed the users. That is why, according to a *design embedded approach* (Kaufman & Flanagan, 2015), the real aim of the game was concealed by an alternative narrative.

The players were presented a fictional ancient-looking secret inventory of the Bagatti Valsecchi brothers (Figure 2), in which were catalogued a series of mysterious magical artefacts. Each of them had a particular power and represented a different kind of experience that could be achieved with the support of digital technologies. In this case, the players

had to read the inventory (all the materials were provided in Italian, English and French), choose their favourite object and state where in the museum and how they would have used it. Here the choice was deliberately wide-ranged to offer the most complete overview with different kind of stimuli. There are ten different artefacts in the inventory: the *Past-time Pocket Watch* that suggests an immersive yet passive experience, possible, for instance, through video mapping; *X-ray Glasses*, also through image – or any other kind of – overlay, they add content to the space; the *Metamorphosis Waistcoat*, to make people protagonists of the experience though a direct interaction with multimedia contents, and favouring their entrance in Csikszentmihalyi's *flow* (Csikszentmihalyi, 1990)*;* the *Thought Bowler*, offering a more intimate set of contents with an interaction limited to the choice of people to interrogate; the *Invisibility Cloak* allowing often prohibited behaviours through tangible Interaction; the *Shadows Candle* that fosters an environmental experience; the *Fine Nose*, to activate an unusual perspective on senses stimulation; the *Life Quill* which involves a very active involvement of users and gives space to their fantasy through digital implementation; the *Mirror on the Beyond* differing from other artefacts by basing the experience on dialogue and, therefore, recalling AI; and *Carte Blanche*, to give expression to visitors' imagination and comprehend any kind of experience that could have been omitted.

Figure 2. Secret Inventories in the three languages proposed (Sciannamè, 2017).

4 Results

As they have little use for the dissertation, the data resulting from the ethnographical research will not be largely discussed. With 236 profiled people (mostly Italian adults – ranging from 31 to 70 – from different cultural backgrounds) and 100 samples coming from the *Follow Through* observation, it became clear that objective data had scarce practical utility in the design process. However, they informed the researcher about the context for her intervention, that proved to be greatly appealing and highly engaging for almost anyone, as the medium stay time, the observation of behaviours and the collection of opinions clearly demonstrated. It was particularly useful to assess people's reactions and attitudes towards the space. They even happened to come unexpectedly in relation to the context, e.g. people tried to actively interact with the museum's artefacts because of their familiarity. This intrigued and affected the researcher so much that the behaviours and emotions manifested by the visitors deeply inspired the development of the games and even the final project, which tries to trigger those spontaneous yet not allowed behaviours.

4.1 Play Your Cards

This activity attracted the preferences of the visitors both because it had the most recognizable game materials (dice and cards) and because it was presented as the fastest.

As expected, it was easy and immediate for the players to understand, no one considered the lack of indications about which cards to pick as a problem, and most of them chose the preferred ones. In addition, the photographical references of the rooms turned out to be fundamental as the visitors especially remembered the sensations that they felt in each of them but not their names, though a visual stimulation was able to recall the experience of the places. As a weakness point, despite the explanations, picking the cards and throwing the dice were frequently perceived as unrelated actions, so, people tended to freely answer the questions choosing among all the cards.

The game intended to collect information about visitors' preferences and reflections about the museum and, regarding that, it can be pointed out that due to the wide number of possible choices (18) no great percentage manifested a preference (Figure 3): 42 over 100 people selected Fausto's Bathroom (one of the most iconic rooms of the house). In respect of the answers to the dice, instead, it can be outlined that they were mostly creative and thoughtful, providing interesting points of view. In conclusion, besides the countable data that resulted from the activity, *Play Your Cards* was mainly conceived to be a trigger for conversation. By the way, only 23 over 100 people agreed to answer the additional questions while the great majority preferred to play also the second game, which is significant as they were not forced to play both games.

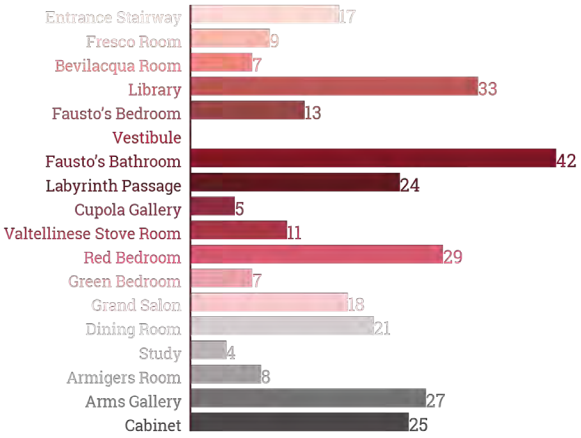

Figure 3. "Play Your Cards" results. Favourite rooms of the museum according to the three-cards free picking (Sciannamè, 2017).

4.2 The Secret Inventory of the Bagatti Valsecchi Brothers

Inevitably, this activity was the most demanding in terms of personal effort and it was much more dependent on the language. Yet, it could also be a collective activity, letting multiple people simultaneously participate and drawing others to do the same. Positively, many appreciated the idea and the quality of the material but, on the other hand, once immersed in the engaging selection of the preferred artefact, they completely forgot the connection with the museum rooms, overcome by their limitless imagination.

As the *Past-time Pocket Watch* was the most voted artefact (30 over 100 preferences) (Figure 4), the strong will that visitors had to deepen their acquaintance of the house emerged most intimate and familiar aspects, and that was underlined also by their explanations and selection of the rooms they wanted to better discover. In fact, the most cited rooms: the Grand Salon, the Red Room (where the kids' objects are kept) and a general *everywhere* were evocatively connected to the social and domestic life in the house. By the way, even if visitors wanted to feel closer to Bagatti Valsecchi's family, the experience they portrayed was rather passive, as secret observers.

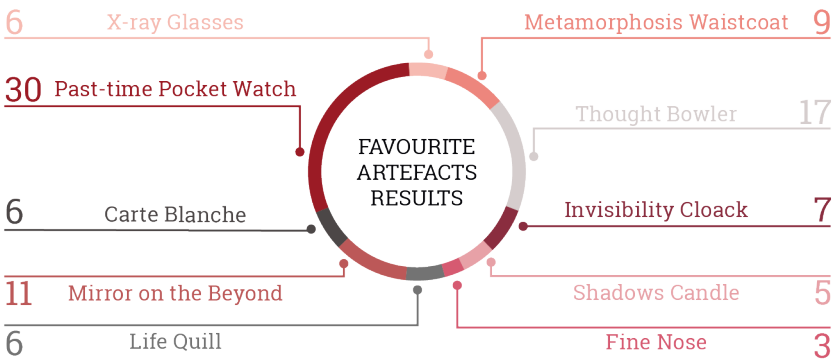

Figure 4. "Secret Inventory" results. Favourite artefacts selected (Sciannamè, 2017).

4.3 How the Results of the *In-between* Approach Informed the Design Process

Clearly the designer may transfer the quantitative data collected directly into his/her project, as if the users involved had determined some of its traits. However, even if one might decide to do so, it would not be in opposition to the

principles of the approach. Unlike in co-design practices, where the users are specifically called to have an active role in the design process, in this case, they are not (and must not be) aware of the actual purpose of their involvement in the research. Furthermore, in the described example, no one even seemed to care about it, as nobody asked about how the data was supposed to be used after the experience.

Specifically, in the case presented, some meaningful data was kept as guidance in the design process, for instance: a familiar perspective and a not-too-challenging experience were raised to become objectives of the project. In general, this kind of UX research surely gave a privileged insight on the visitors' repressed expectations (to a direct question, everything about the museum was perfect and nothing had to be changed, while transporting them to a most-likely impossible scenario they revealed their concealed thoughts). In that sense, the most valuable result proved to be the visitors' attitude towards the ludic activities that were proposed to them. It was as much unexpected as positive and proactive: many people favourably agreed to take part in the games and even the more reluctant ones seemed to enjoy the brief playful experience. Some of them even claimed they had fun. Users' involvement through games has given proof of its efficacy, as it was demonstrated by the fact that most of times the preliminary profiling questions were not needed as *ice breaking* facilitators: the game itself covered that function. Ultimately, this unquantifiable information certainly overcame any other datum in the attempt to understand and define the *meaning* for the designed outcome. Users of the Bagatti Valsecchi's Museum were eager to be involved in some activity, and this was a meaningful realization in the perspective of the designing for an interactive experience.

5 Discussion

As it has been made evident from the described example, the application of an *in-between*, design-oriented UX approach, conducted through gaming-modalities as direct, physical and active interaction with the users can inform the design process by guiding the designer's personal interpretations and decisions towards the setting of a *meaning*. The novelty, indeed, relies in its being an activity to be set between the exploratory phase, frequently carried out through mixed methods – quantitative and qualitative – and the generative one. The approach here discussed is configured as a support for designers in the delicate and time demanding phase that translates data from user studies into a design concept able of coupling answers to explicit and implicit users' desires together with fascinating and original design solutions.

A matter of discussion is how to implement it in UX education, in combination with other traditional methods, in the attempt to make the aim of UX itself clearer for students and practitioners, as it is presented as a source of inspiration for the development of the design process. The in-between approach here discussed has not been included in undergraduate or graduate program so far; nevertheless, a critical reflection on limitations and opportunities of such approach has been conducted in order to inform its introduction in UX curricula.

As we outline in the following, a clear limitation of this approach is its specificity that may hinder its generalization within a formal educational activity. Nevertheless, we think that some defining traits may be of guidance for the inclusion of such an in-between approach within a UX education curriculum in a higher education context. First of all, (i) it needs to be carried out in-between the exploratory and generative phases, informing both of them and setting itself among the projective activities (Hanington, 2010). Secondly, (ii) it requires the direct involvement of designer with users, since we feel this direct relationship may be highly beneficial in better envisioning the extant UX – in terms of perceptions, needs and desires – with a deeper perspective. Furthermore, our results suggest that (iii) the employment of elements taken from the game design field may facilitate the direct involvement of users and more fruitful contributions in respect to traditional methods such as the interviews. In particular, the creation of a fictional world with its own rules and tools/objects, and the use of game mechanics resulted extremely useful in, respectively, detaching users from the "here and now" and involving them utterly even if for the short time of the game experience. Moreover, following (iv) the embedded design approach proposed by Kaufman and Flanagan (2015), so concealing the real aim of the experience, resulted in a more relaxed participation of users in what can be actually considered a meta-design activity.

The general traits outlined above only define the skeleton of the in-between tool here discussed but leave wide margins to define the specific characteristics of the tools that have to be tailored on the variable requests of the designer/researcher. An aspect that can be considered a strong limitation, since it sets this *in-between* approach far from being a comprehensive method, in the same way as cultural probes, personas, focus groups and other tools. It is indeed difficult to outline a univocal way to define its development, as it needs to strictly adapt to the context and purposes of each situation. At the same time, its vagueness may be interpreted as a richness in an educational context since it can be, on the one hand, a stimulus for students to anticipate a creative elaboration of the raw materials

collected through traditional research methods. At the same time, it can be an opportunity for educators to better explore with students that delicate phase that blurs research with its translation into a concept. Actually, going beyond HCD (Forlizzi, 2018; Norman & Verganti, 2014) is a very ambitious programme, as the threshold between getting inspiration from UX research and remaining stuck in the users' point of view (therefore producing no real change) is extremely thin.

In conclusion, this contribution aims to be a starting point for a wider conversation about a novel, meaningful approach towards UX: originating from a long-foreseen early involvement of the user in the design process and culminating in a significant reinterpretation of the discipline itself.

Acknowledgements: We deeply thank the Bagatti Valsecchi's House Museum, its staff and volunteers for the kind and accommodating collaboration. We are also grateful to our anonymous reviewers for their valuable suggestions which contributed to improve our work.

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