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To cite this article: Ana Maria Bustamante Duarte, Mehrnaz Ataei, Auriol Degbelo, Nina Brendel & Christian Kray (2019): Safe spaces in participatory design with young forced migrants, CoDesign, DOI: [10.1080/15710882.2019.1654523](https://doi.org/10.1080/15710882.2019.1654523)

To link to this article: <https://doi.org/10.1080/15710882.2019.1654523>



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Published online: 04 Sep 2019.



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Safe spaces in participatory design with young forced migrants

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ABSTRACT

'Safe spaces' have been at the core of participatory design (PD) in HCI. However, their characteristics, their potential impact and what enables them are not yet fully understood. The present article presents a series of insights derived from a six-week long study with 19 young forced migrants (YFMs). We investigated factors which contributed to enable the creation of 'safe spaces' while developing digital services with them. We based our case study on four main components of such spaces: (i) ethics, (ii) reflective processes, (iii) content, (iv) and spatial layout and dynamics. Our findings pointed to a promotion of 'safe spaces' through the combination of these components. Participants showed a high degree of engagement, seemed to be comfortable while interacting socially, and manifested signs of developing a trust relationship with the facilitators. The work presented in this article can benefit designers engaging in participatory activities in HCI with communities with highly complex and sensitive backgrounds or who are underrepresented.

ARTICLE HISTORY

Received 23 August 2018
Accepted 16 July 2019

KEYWORDS

Participatory design; young forced migrants; safe spaces

1. Introduction

Migration, and specifically forced migration, is a highly complex, continuous and growing phenomenon around the globe. During the last years, the use of digital technologies and services has impacted various aspects of this phenomenon (Hsiao and Dillahunt 2017; Bustamante Duarte, Degbelo, and Kray 2018; Talhouk, Montague, and Olivier 2017; Talhouk et al. 2016; Almohamed, Vyas, and Zhang 2017; Brown and Grinter 2016; Abujarour and Krasnova 2017). Several research projects conducted with forced migrants have yielded valuable insights, for instance, an identification of a series of challenges related to aspects such as: research and data ownership, power balance, the navigation and impact of micro and macro politics part of these scenarios, and the design and implementation of ethics process (Talhouk et al. 2018; Bustamante Duarte et al. 2018).

In HCI, the main insights on 'safe spaces', although limited, have been coming from participatory projects with diverse, and sometimes underrepresented communities (Scheuerman, Branham, and Hamidi 2018; Bustamante Duarte et al. 2018; McNally

et al. 2017; Hardy et al. 2016; Gram-Hansen and Ryberg 2016; Jorge 2001). Particularly, there is relatively scarce information available on the role, characteristics, and the potential impact of ‘safe spaces’ when working with young forced migrants (YFMs). Overall, ‘safe spaces’ in HCI have been seen as environments for the creation and sharing of ideas, where trust and support are fostered and group work and learning are promoted (McNally et al. 2017; Halbert and Nathan 2015; Gram-Hansen and Ryberg 2016; Bustamante Duarte et al. 2018). They are also seen as spaces which are unique for each person who experiences them (Halbert and Nathan 2015). A deeper understanding of ‘safe spaces’ based on the above initial characterisations and assessments in HCI could support more informed participatory and reflective processes with YFMs. Specifically, they could help on leading, as stated by Brown and Choi (2018), to more rigorous conversations on how to implement practices which properly explore the knowledge of these communities and their unique experiences.

In this sense, the goal of our study is to explore components which can contribute to ‘safe spaces’ in participatory design (PD) in HCI. We focused on (i) a critical analysis of the existing literature to extract concepts that could be relevant to ‘safe spaces’ discussions, (ii) and an assessment of strategies to enable these spaces in a case study with YFMs. For the purpose of this study, ‘safe spaces’ were defined as environments which promote open communication, knowledge exchange, and beneficial engagements among all participants. Trust building and comfort were explored as enablers, while engagement was observed as a potential aspect to assess the impact of these spaces. Our contribution is a set of research considerations from the application of strategies extracted from the literature to ‘safe space’ realisation while designing mobile digital services with YFMs.

2. Related work

This section first presents a brief overview on digital technologies and YFMs. Afterwards, it focuses on the discussion and advances regarding the conceptualisation of ‘safe spaces’ in HCI. Finally, it offers a summary of the main aspects and gaps regarding the conceptualisation of ‘safe spaces’ in HCI.

2.1. Digital technologies and forced migration

When designing digital services and technologies with forced migrants, specifically young ones, an active search to enable ‘safe spaces’ is crucial. Forced migrants have been obliged to leave their countries to escape persecution, conflict, repression, or disasters (induced by natural or human hazards) (IOM 2011). Such situations can have adverse repercussions in the lives of these population groups at the different stages of their forced migration. While arriving in host communities, for example, forced migrants have been found facing complex situations such as potential social isolation, cultural shock, and restricted access to health care (Abujarour and Krasnova 2017; Slonim-nevo 2015; Almohamed 2016; Talhouk et al. 2015, 2016).

Digital technologies have impacted the processes of the most recent forced migration movements (Gillespie, Osseiran, and Cheesman 2018). For example, such technologies have the potential to ease forced migrants’ (re)settlement in several manners

(Bustamante Duarte, Degbelo, and Kray 2018; Kaufmann 2018; Andrade and Doolin 2016; Brunwasser 2015; BenEzer and Zetter 2014). They can ease social connectivity (Abujarour and Krasnova 2017; Yerosusis et al. 2015; Aal et al. 2014), develop social (informal and formal) capital (Hsiao and Dillahunt 2017), support structural and cultural integration (Weibert and Wulf 2010), provide daily life information (Abujarour and Krasnova 2017; Andrade and Doolin 2016), language learning (Hashemi et al. 2017), and support human mobility and navigation (Baranoff et al. 2015; Abujarour and Krasnova 2017), among others.

Based on the above benefits of digital technologies and services, there have been various projects in HCI developing and exploring their use to support forced migrants. A variety of tools have been studied which range from human-in-the-loop translation tools (Brown and Grinter 2016) to community-generated guidance platform to support forced migrants arrival (Baranoff et al. 2015). Also, participatory or co-creative processes have been done, for example, on the search for identifying good care for post-trauma journeys of people who has experienced being refugees in Australia. Furthermore, additional explorations have been done, for instance, in the refugee camps in Lebanon on digital health provision for communities of forced migrants (Talhok et al. 2016), or for co-designing geospatial services for YFMs (re)settlement in Germany (Bustamante Duarte et al. 2018), or computer clubs to promote sustainable social and cultural integration, also in Germany (Weibert and Wulf 2010). These examples are some of the references and motivations for the current case study. Due to the diversity of potentially useful mobile services for forced migrants, we opted for promoting workshops where various ideas for mobile services could be explored with YFMs.

2.2. 'Safe spaces' in HCI

'Safe spaces' are often mentioned but not explained in detail in the existing literature in HCI, for example, in research projects done with transgender communities (Scheurman, Branham, and Hamidi 2018), children (Brown and Gemeinboeck 2017; McNally et al. 2017; Guldberg et al. 2010), forced migrants (Talhok et al. 2019; Brown and Choi 2018; Bustamante Duarte et al. 2018), homeless (Hardy et al. 2016), and elderly population groups (Jorge 2001), among others. 'Safe spaces' were also relevant when discussing intersectional HCI (Schlesinger, Edwards, and Grinter 2017), health-care provision (Peters et al. 2018; Wolters, Mkulo, and Boynton 2017; French, Teal, and Raman 2016), ethics in research (Gram-Hansen and Ryberg 2016; Durrant and Kirk 2018), and the creation of learning spaces (Halbert and Nathan 2015). 'Safe spaces' in HCI have been mainly explored in two roles: digital 'safe spaces' (Scheurman, Branham, and Hamidi 2018) or physical 'safe spaces' (McNally et al. 2017; Hardy et al. 2016; Halbert and Nathan 2015).

'Safe spaces' are 'fluid and contextual' (Scheurman, Branham, and Hamidi 2018) and the notion of what they are and what constitutes them differ from person to person (Halbert and Nathan 2015). Put differently, what helps one person to communicate or participate more in certain scenarios, might not necessarily entice others to do the same. In physical 'safe spaces', aspects such as group work and reliability on teammates are seen as critical when working with children (McNally et al. 2017). McNally et al.

(2017) also mentioned that in these spaces, children produced and combined ideas while learning how to communicate these to others in an effective manner. Due to it, the authors state ‘safe spaces’ should be a goal of PD since they enable participants’ gains (e.g. self-confidence) derived from the activity’s dynamics. Gram-Hansen and Ryberg (2016) emphasised the importance of ‘safe contexts’ to empower and support participants’ sharing of ideas and reflections during and after the activities. Halbert and Nathan (2015) defined ‘safe spaces’ as learning environments where trust and support are fostered without silencing feelings of discomfort and voices of dissent ‘towards more palatable forms of discourse.’ Talhouk et al. (2019) added the creation of ‘safe spaces’ through experience-based dialogue and through participant configuration of the design of processes and design as adaptation to their research approach based on the experiences of two case studies. Lastly, Bustamante Duarte et al. (2018) explored ‘safe spaces’ in an HCI project carried out with YFMs in a formal education set-up as a result of combining principles from participatory research and PD. The authors highlighted the need for YFMs having clarity about the no negative repercussions derived from their participation as one of the aspects towards enabling ‘safe spaces’ with YFMs. Also, for this purpose they suggested to foster group-oriented dynamics to balance the power between facilitators and co-researchers, as well as promoting an informed but flexible ethics procedure emphasising on anonymisation of the collected data.

2.3. Summary

In sum, ‘safe spaces’ are an important concept for research in HCI, particularly in participatory research with communities who are underrepresented, or have sensitive and complex backgrounds. However, an in-depth characterisation (e.g. role definition, how to enable them, and measurement) has been left aside. Characterising ‘safe spaces’ needs to account for the ‘fluidity’ and individuality inherent to these spaces (see (Scheurman, Branham, and Hamidi 2018)). At the same time it needs to account for their unfolding in group-based settings where researchers and participants are part of. It is the tension between all these requirements that makes ‘safe spaces’ explorations challenging in the context of research with YFMs.

Due to the key role of digital technology in the communities of forced migrants, further co-design processes with these groups, of such devices and services, are needed in participatory HCI. A better understanding of ‘safe spaces’ can help conduct more socially aware research with (young) forced migrants in particular, and underrepresented communities in general. This may, in turn, lead to participants being more engaged in processes of generation and sharing of ideas.

3. Case study

3.1. Context of the case study

We held participatory workshops, as understood in the PD Scandinavian tradition (Greenbaum 1991), with 19 YFMs enrolled at a vocational high school in Münster, Germany. The workshops revolved around co-ideating and co-designing a mobile application to support YFMs upon their arrival in Münster. The full study lasted

about a month and a half. It had four project information sessions (spread over a month in October 2017), and four participatory workshops sessions (spread over two weeks in November 2017). The definition of the structure, activities, and content for the workshops required a multi-actor participatory strategy (YFMs, staff of the vocational school they were enrolled at, and facilitators). Participants of the study were from various countries (Afghanistan (N = 7), Eritrea (N = 4), Syria (N = 4), Guinea (N = 1), Iran (N = 1), Nepal (N = 1), and Nigeria (N = 1)). They were between 15 and 18 years old. According to the school staff, by the moment of the study, participants have been taking classes to learn German language for at least eight to 12 months. The study was done using various strategies, namely, observation analysis, use of diaries (by all actors), group-based semi-structured interviews, and other design-oriented tools (e.g. design portfolio, privacy boards, card sorting exercises, paper prototyping).

3.2. Exploring ‘safe spaces’

As stated above, we defined ‘safe spaces’ in this study as *environments which promote open communication, knowledge exchange, and beneficial engagements among all participants*. Trust and comfort (which continuously influence each other), are seen as *enablers* of such spaces. The previous definition is in line with Holley and Steiner (2005)’s understanding of atmospheres for free expression of feelings and ideas. It is also compatible with Halbert and Nathan (2015)’s view on ‘safe spaces’ differing from person to person, and with Scheuerman, Branham, and Hamidi (2018)’s idea of these spaces as ‘fluid and contextual’. Also we followed the establishment of physical and digital ‘safe spaces’ as a physical space that translates into an emotional state when assessing comfort and trust (Scheuerman, Branham, and Hamidi 2018).

In order to promote ‘safe spaces’ during the case study, we devised strategies based on considerations from both the literature on this topic in HCI, and our prior personal experiences working with YFMs. These strategies touched upon four aspects: (1) ethics, (2) reflective processes, (3) content, as well as (4) spatial layout and dynamics.

3.2.1. Ethics

Generally, HCI research ‘often does not fit “traditional” or static ethical templates’ (Munteanu et al. 2015). Due to this, several investigations have been done in the field regarding a diversity of issues (e.g. ‘ethically-minded approaches to technology design’ (ibid)). The ‘unsuitability’ of traditional ethical approaches were also present in this paper’s case study.

The research case here presented was developed in a highly complex context which was informed by previous similar research projects (Bustamante Duarte et al. 2018; Talhouk et al. 2018; Talhouk, Montague, and Olivier 2017). In these projects, challenging situations, some of which could not be predicted, were susceptible to emerge. Nathan et al. (2016) pointed at this, as a frequent issue in HCI research. We attempted to tailor the ethical procedures and materials needed to the specificity of conducting PD activities in HCI with YFMs. Some distinct aspects we observed for this group include: the fact that several YFMs who arrived to Germany unaccompanied were underage, their occasional limited fluency in the local language of the host community, along with the fact that some have sensitive personal backgrounds due to their forced displacement

from countries where violent conflicts were occurring. Due to the above conditions we also adapted the strategies used from existing reflections on ethics in other scenarios (Mackenzie, McDowell, and Pittaway 2007; Nathan et al. 2016; Vines et al. 2016). Such adaptations are as follows:

To promote reciprocal benefits as suggested by Mackenzie, McDowell, and Pittaway (2007) we explored various elements. We recurred to a common practice in research by using non-economic compensations when working with communities with complex and sensitive backgrounds and experiences, living in challenging environments, or who are underrepresented. We used three elements as incentives for participation with YFMs. First, the content of the workshops (i.e. knowledge exchange about how to design mobile apps with and for them). Second, we provided them certificates of attendance specifying the workload and the main topic of the activities. Third, we created a template for designing their first design portfolio where they could add the results of the diverse design activities done during the workshops and keep those to show to whoever they wanted. The main theme for the content was suggested initially by the staff at the school where YFMs were enrolled. It was then proposed to and discussed with the YFMs group. Some participants were interested in the workshops to gain more experience in a topic, easing thereby their search for internships at tech-related companies in the city. Other YFMs were keen on joining the workshops due to a personal interest in technology, design, and programming.

Considerations over what constitutes an informed consent process with the YFMs community. As stated above, there are particularities of carrying research with YFMs, and these also affect the process of informed consent. Apart from the language limitations, other particularities already mentioned include the legal tutor's actions and distant involvement on the process, impact of the location of the activities on the process of communication of the research process, as well as the type of recording methods for the sessions (e.g. audios and images) (Bustamante Duarte et al. 2018).

We followed similar steps to the ones presented in Bustamante Duarte et al. (2018) for this case study. For instance, we informed all actors and institutions taking part in the research, and agreed with all on their participation (i.e. YFMs, school staff, and facilitators). We then had four iterative informative sessions during the first month of study (each lasting around 30–40 minutes) about the research project, its activities, its implications, and its data management. Iterative consent procedures were proposed by Mackenzie, McDowell, and Pittaway (2007) as a more culturally appropriate approach with the communities part of the research. It requires a constant re-conceptualisation of the research process and the relationships created within it. Details about the activities were provided in an iterative manner to avoid information saturation. The meetings were kept short facilitating thereby participants' focus on the information given and provided more opportunities for open discussions with participants so that the design of the case study could be modified step-by-step. The elements which were iterative in each of these ethics sessions are as follows:

- *Session 1.* It worked as a brief introduction to the research for the YFMs and facilitators taking part in it. It was aimed to begin to build a step-by step relationship between all actors.

- *Session 2.* It provided a more detailed overview of the research project and its goals, and helped to gather some information for the tailoring of the activities (e.g. language selection for the workshops, preferred topic of interest for the content of the workshop, potential dates, and preferred location school vs university).
- *Session 3.* Presented the details of the suggested sessions (content, duration). It was also used to: (1) inform participants about the overall framework of the research and about all their rights during their participation, (2) describe the information on the ‘dynamic’ consent forms including and explanation of the purpose of the collected data, and (3) describe the activities’ additional incentives (e.g. certificate of attendance to tech design workshops for their internships). To give participants sufficient time with the consent forms to read them, discuss them and understand them to take informed decisions. They were encouraged to take the forms with them and review them with a person they trust or their parents or legal tutors (Munteanu et al. 2015).
- *Session 4.* This session was carried out a week and a half after Session 3. During this session a final reminder of the research project, its goals, activities along with some further organizational details were given. Additionally, a questions’ session on the consent forms and the research data practices was done. In this session, some participants provided the forms signed to the researchers while others wanted to consider it further until the beginning of the activities.
- It is worth highlighting that four short sessions, of approximately 5–10 minutes, which acted as ethics reminders were done at the beginning of each workshop. The objective was through these iterations to avoid participants signing the consent forms without fully reading them and understanding them (Munteanu et al. 2015). We used visual material as reminders of our research commitments and participants rights.

In this part we would like to introduce the concept ‘dynamic consent’ (DC) from Kaye et al. (2015) which inspired the consent approach of this case study. DC was introduced in biomedical research to put participants at the centre of the decision-making regarding the project’s collected data management. It is an approach in which participants have more control over the data collected by segmenting the function of the consents given by participants into different documents. DC allows specificity about what is being consented to and opens the option to change it at any point in time. It contrasts with the widely spread idea of ‘static’ (i.e. one-time) consent for all data collected.

Inspired by the DC approach along with the feedback from our previous studies with YFMs (see Bustamante Duarte et al. 2018) and the feedback gained on the initial ethics-related informative sessions with the potential group for participants we opted for generating two consent forms. The first consent form was participation, and the other one for the consent to take pictures during the activities, their usage, and their anonymisation treatment for the whole process. The reason for this was the concerns some participants showed regarding being recorded, particularly in pictures and the way they were going to be represented afterwards. The consent process and these forms were explained in Sessions 3 and 4, and a demonstration and example of the images’ anonymisation treatment was provided for participants to see how, if the images were collected, how they will be treated if published (see Figure 1).



Figure 1. Example for anonymisation of images in consent forms. Source: <https://www.pexels.com/photo/bonding-cold-cozy-dog-374845/>

3.2.2. Reflective processes

Binder, Brandt, and Gregory (2008) discussed the relevance of reflection, reflected practice, and reflective engagement in design processes. More importantly, they pointed to these aspects ‘as constructive sensibilities in collective dialogues’ which ‘deserve to be cultivated from the start’ in design processes which were influenced by the PD Scandinavian practices. In addition to HCI and PD, reflective processes have been carefully discussed in the fields of education and didactics.

In Education, two major concepts of reflective processes are defined (1) reflective thinking, and (2) reflexivity. The former refers an active, constant, and careful consideration of ‘a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends’ (Dewey 1933). The latter refers also to an active, continuous, and careful consideration but, instead of one’s knowledge or beliefs, focuses on one’s own or other people’s actions. Various models have been proposed to diagnose and foster reflective processes in education (Kolb 1975; Korthagen and Vasalos 2005; Boud, Rosemary and Walker 1985; Henderson, Napan, and Monteiro 2004; Brendel 2017).

For instance, Schön (1983) discussion on reflective practices distinguishes reflection *in action* (while doing something) and reflection *on action* (after something has been done). We created spaces and material to mainly promote *reflection on action* in all actors involved (YFMs and facilitators). For the *reflective processes* of YFMs, the following actions were considered:

- (1) *Brief reflective questions* were done at the beginning and end of each session. The questions done at the beginning of the sessions intended to ‘reactivate knowledge’ (McNally and Guha 2017) from previous workshops in YFMs and to voice their expectations for the upcoming sessions. The questions at the end aimed to encourage participants to share their opinions, feelings, and feedback about the activities held, as well as on aspects to improve for the upcoming sessions.
- (2) *Iterative hands-on sessions* during the co-design process where they were encouraged to assess and discuss their past, current, and potential future life experiences

and their use of mobile applications in some scenarios. The insights from this were expected to inform their designs of mobile applications.

- (3) *Discussions in small and large groups*, as well as peer assessment activities based on reflective strategies where reflective prompts (in the form of guiding questions) were combined with other resources (e.g. personas, privacy board, brainstorming).
- (4) *The use of an advanced organiser*. These are understood in education as ‘bridges’ which help students to connect their previous knowledge with their new one in a more abstract and inclusive manner while organising it (Stone 1983). In the activities, it allowed us state clearly and shortly the general objective of each session and to discuss it with participants at the beginning of each workshop.
- (5) *The use of written reflective diaries* guided by reflective prompts was promoted. Diaries allow to freely record feelings and experiences that participants would not share during face-to-face interviews (Barker and Weeler 2003).
- (6) *Small group interviews* were done during the last session as a means to encourage YMFs to identify, assess, and deliberate on what was done, and suggest improvements for future participatory activities related to digital technology with them or other groups of YMFs.
- (7) *Reflective processes* are introduced in this case study due to two main research goals. First, to promote further agency of YMFs to shape the workshops’ activities. And second, to foster YMFs’ experiencing with, discussing on, and learning about and from, the introduction of tech and design-related concepts and actions in a group-setting.

Moreover, the *reflective processes on action* of facilitators were encouraged through the use of written diaries and short post-session discussions. The written reflective diaries were meant to document their perspectives (experiences, feelings, and emotions) on the activities (Kunz and Pfadenhauer 2014, 21). The unique perspective of facilitators helps not only to assess their roles but to redefine them (Segbers 2015, 295). Short discussion meetings were held after each session to assess, and take measures on changes needed for the next activities based on YMFs’ feedback and the facilitators’ observations of each particular workshop.

Overall, due to the nature described of reflective processes we considered, based on our prior projects and exchanges with groups of YMFs, the need of exploring further aspects such as trust and comfort to ease open communication, knowledge exchange, and beneficial engagements with this particular group. For it, we turned into the investigations and insights on ‘safe spaces’ in Education where the discussion goes back to the late 90s (Rom 1998). During this time, various definitions have been given in the field to ‘safe spaces’.

For example, Holley and Steiner (2005, 50) defined ‘safe spaces’ as environments where participants ‘feel secure enough to take risks, honestly express their views, and share and explore their knowledge, attitudes and behaviours. [...] A classroom safe space refers to protection from psychological or emotional harm’. Participants expressing freely is pointed to be challenging in multicultural classrooms (ibid, p 52). Cultural differences such as age, ethnic, gender, region of origin, can impact the way multicultural students feel or do not feel safe in a classroom. Particularly, the authors

highlighted the students assessment on ‘the appropriateness of speaking up in a group, sharing personal information, challenging others, public versus private demonstration of learning, and the appropriateness of disrupting the harmony of a group.’ For other researchers, ‘feeling safe’ should not be confused with ‘feeling comfortable’. This is the case of Rom (1998, 407) who stated that being comfortable in a classroom hinders critical thinking since by accepting everyone’s voice and not leaving room for promoting discussion and challenging each other’s voice.

Due to the multicultural background of the group of YFMs, for this case study we took into consideration the insights from Holley and Steiner (2005). Also, we opted for an approach different from Rom (1998) and include ‘feeling comfortable’ as one of the variables for the configuration of ‘safe spaces’ with YFMs. Due to their personal experiences and complex and sensitive forced displacement background as well as our short direct engagement with the YFMs group, for YFMs to do not ‘feel comfortable’ could negatively impact them and be detrimental to enable open communication and knowledge exchange among all participants.

3.2.3. Content

The actual topic for the participatory workshops was defined as (*how to design mobile services?*). Its content, materials (e.g. portfolios, presentations) and guidelines for activities, were done taking into consideration the previously explained components, ethics and reflective processes. At the same time, these have to fulfil the expectations of YFMs from participating in the activities, sharing and gaining knowledge among all actors, and co-ideating/designing mobile services as a result. The material aimed to use non-technocentric language (Greenbaum 1991), as well as using diverse step-by-step guidances, simple sentences in German language, and with various visual representations expecting to create a content where language did not become a barrier for its understanding. Moreover, in terms of sharing knowledge, we aimed for the creation of a space where YFMs felt motivated to share their content knowledge (McNally and Guha 2017) based on their life experiences, insights on their information sharing strategies, and their use and perception of digital mobile applications. Facilitators shared their life experiences as researchers, designers or developers of mobile applications, as well as newcomers in host cities. Moreover, while the primary goals of the workshops were to hold a PD case study to co-conceptualise/design mobile services with and for YFMs while promoting mutual learning, the secondary objective was to develop and use tools to lead participants to reflect on personal data privacy practices while developing technologies.

To achieve these goals, we used various methods. We designed a card sorting activity¹ to familiarise participants with the concept of sharing personal data. In this activity, we asked them to imagine different individuals from a close friend or family member to teachers or migration board officers and we asked them to select the type of information (i.e. name, address, location, etc.) they would feel comfortable sharing with these different individuals. We also introduced the privacy board, a simple reminder to help participants decide how would they like to have the personal data flow between the application and themselves. By drawing the data flow, they could see what was needed for the app to function and we could record their preferences regarding the share of personal data through discussing their concerns. Personas were used to communicate

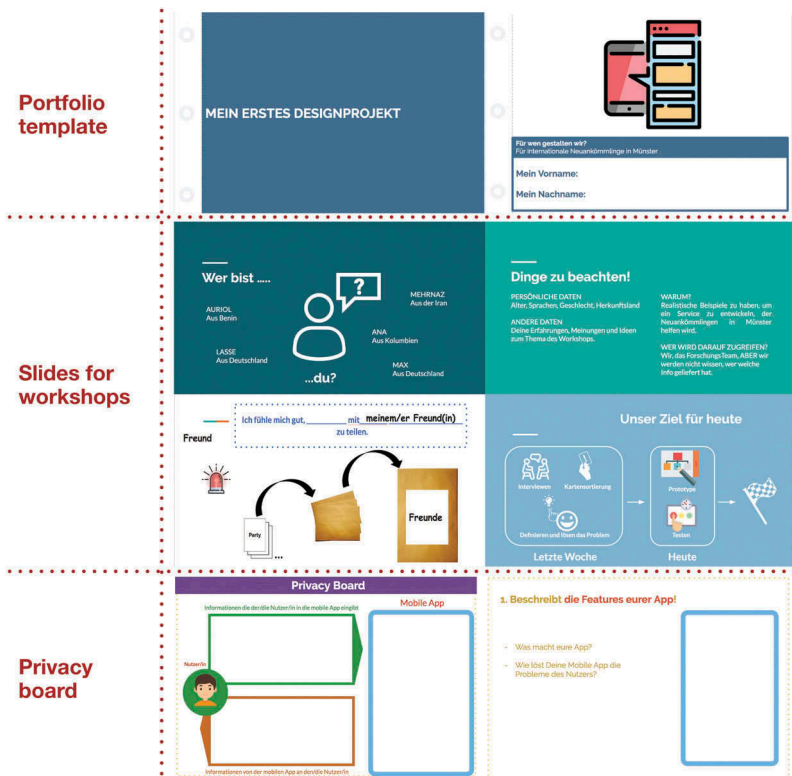


Figure 2. Examples of material used in the workshops. Source: Image created by the authors. Some of the icons were made by Freepik, Vectors Market, and Icon Moon from www.flaticons.com

various scenarios relevant to the mobile application design, and the privacy board and sticky notes were present in all the brainstorming sessions, various scale group discussions and activities to support and motivate participants to share, reflect and participate. These activities were selected for their simplicity, flexibility, dynamism and capacity to spark creativity in the participants and open discussions. Some examples of the materials can be seen in Figure 2.

In summary, all material for this PD case study was created to spark participants' questions, discussions, and reflections *on* action at various physical scales (individual, small groups, large group). It was also designed to support participants and facilitators interaction on a more horizontal and power balanced interaction and relationship. However, all of these aspects needed, to be carried out, a particular spatial setting and dynamics which will be detailed in the following section.

3.2.4. Spatial layout and dynamics

The spatial layout and dynamics of the participatory workshops considered several factors such as location, language used for the activities, space arrangements, facilitators' agreements, and a cultural identification strategy.

Related to the *location*, the workshops were offered as extracurricular activities to be held at the university with which researchers were affiliated. In a previous research, an approach

combining PD with participatory research with YFMs in a school set-up was explored (Bustamante Duarte et al. 2018). In this article, we are interested in exploring PD with YFMs in a different context from the school set-up. This guided us to suggest our future participants the university as a new location for the activities.

As for the *language* to conduct the activities, German was selected by the participants as the primary language (further detail on the decision process can be found in Section 4.4). Its selection used a ‘lingua-franca’ approach as done by (Bustamante Duarte et al. 2018) to ease group communication and activities. In general, four facilitators on average were present in each session, two with high proficiency in the German language, and two with high proficiency in English. Also, some facilitators native speakers or fluent in Farsi and French which were languages used occasionally to support the communication with the YFMs participating.

Furthermore, the *spatial layout* was informed by McNally et al. (2017)’s insights into ‘safe design environments’ and was changed from the ‘classical’ classroom spatial arrangement (Figure 3, left) to a room with spaces for small as well as large group discussions (Figure 3, right). Brainstorming activities using sticky notes (Peterson and Barron 2006) were done to boost participation and cooperation among a multi-cultural group and to keep up with the group’s communication pace (Bustamante Duarte et al. 2018).

Agreements on the facilitators’ behaviour were implemented as well as a constant search for strategies which ease communication and enable trust building among and between the actors involved. We termed these strategies the dynamics of ‘safe spaces’ realisation aiming to decrease the power distance. Examples of agreements reached by facilitators, some before the activities and others added during these, were:

- to use an informal and non-technocentric language (Greenbaum 1991) when talking with participants.
- to wear informal clothing to bolster power balance (Druin 2002).
- encourage participants to use the first name of the facilitators when talking to them (Druin 2002).
- to be at the same sight level with the participants when talking and discussing, as much as possible, to keep the power balance among all actors.
- to rotate through all groups to avoid that participants feel pressured and to include all participants in each of the activities.
- to avoid asking sensitive personal questions (e.g. family and living situation).

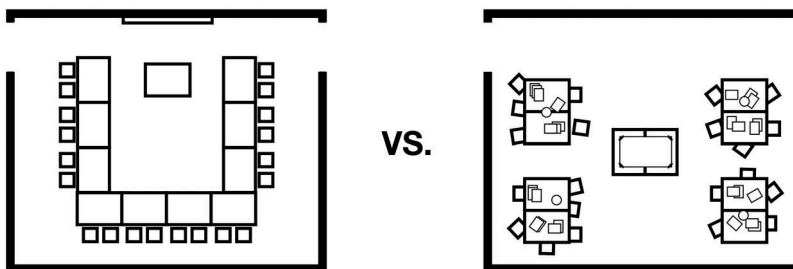


Figure 3. Spatial layout: before (left) and modified (right). Source: Image created by the authors.

Additionally, an exploration was done for a *cultural or background identification* strategy where facilitators purposely stated their first names, and countries of origins (Benin, Iran, Colombia, and Germany) directly, and mentioned when asked the languages they were fluent in. Thus, the activities started by laying out the basis for a cultural and background identification between young forced migrants and facilitators.

Overall, the spatial layout and the dynamics proposed aimed to create a physical space which encouraged individual and group work, communication, and discussion in more organic ways for the diverse YFMs participating. Several of these strategies were not novel, however we reported them since their addition and use played an important role on configuring ‘safe spaces’.

4. Findings

Qualitative data was collected on this case study in the form of facilitators’ and YFMs’ diaries, semi-structured group interviews done in the last workshop session with YFMs, and the annotations from the reflective questions done at the beginning and end of each session. The data was transcribed by three research team members and was analysed using MAXQDA (<http://maxqda.com/>) in two iterative cycles. Two criteria were used as proxy measures of ‘safe spaces’ being enabled ‘*comfort level*’ of participants and trust and *engagement* was assessed for the impact of these spaces. The quotes from diverse participants in each of the groups are presented using the Group#_P# acronym.

4.1. ‘Comfortable’ spaces and trust building

Overall, it is difficult to discuss separately about the strategies that enable ‘safe spaces’ which impacted one or another of the proxy measures. The complexity is due to an intrinsic interrelation of the concepts, actions, and variables which were expected to enable ‘safe spaces’ in this case study. The insights here presented are related to the strategies that generated a more ‘identifiable’ impact. For the case of ‘*comfortable*’ spaces and *trust building* the separation was not possible as it was with the *engagement* variable. For these two, several strategies from the components are related as presented below.

‘Dynamic’ and iterative consent process. Insights on it, showed that this type of consents were at first difficult to convey to YFMs. However, showing example images which explained the future use (e.g. publications) and treatment of the pictures collected (before and after ‘blurring’ them) helped to better transmit the message. Our findings are not clear about the full effect of the iterative process for consent in regard to participants signing the forms fully aware of their content. It is possible that some participants, despite the researchers’ efforts to communicate the consent forms in ‘accessible, plain language’ to them, signed the documents to ‘get the formalities over’, similar to Munteanu et al. (2015)’s report. Further explorations on this matter, with direct questions to YFMs about the consent process and the ‘dynamic’ forms could be done to explore their potential.

YFMs-Facilitators’ communication. During the workshops a constant and open informal communication between both groups was encouraged. Several participants were sharing freely with the facilitators their experiences and views, some of them very personal and sensitive, about their lives and the situations they faced before and after

their forced displacement. Such dynamics could be seen as demonstrations of the participants 'feeling comfortable' and developing some level of trust with the facilitators. For example, they led to a moment during the activities where two participants asked (in Farsi, their native language) to the Farsi speaking facilitator, with whom they have been close through all the sessions, if she was a certified psychologist (so that they could talk to her, and get some advice on a personal family situation). The facilitator stated she was not a psychologist, but she asked him if it was ok for her to search for potential people who could help them on this regard without disclosing the information the participant shared with her and also told them to explore if they could discuss the matter with the counsellors available in their collective accommodations or at the school.

The main lesson learnt from this was that if trust between all actors reach middle to high levels, situations like the one above may occur and facilitators need to be prepared, for instance, trained to present adequate assistance to the participants (e.g. suggestions of appropriate resources to participants) and cope with the impact of such situations Talhouk et al. (2018).

The space's layout and dynamics might have played a core role on easing participants' sense of comfort by promoting their open interactions and communications with all actors. Several YFMs engaged in public discussions and freely stated their point of view while working in groups resulting on their positive comments on the collective activities. On this respect, Group2_P2 remarked that when working in groups '*one can talk with others and find a lot of information*'. Also, these group dynamics were highlighted as '*very enjoyable and different from the school setting*'. In general, despite participants not evaluating directly the spatial layout, the positive feedback received on the group activities can be seen as resulting from it. The space configurations were purposely designed to favour group work (at various scales) over individual work, and implied taking active part in group interactions, discussions, and reflections.

4.2. Engagement

All facilitators highlighted in their diaries (filled independently after the workshops) that the levels of engagement of the participants were particularly high (mainly during the second and third sessions)². Four features of the study could have contributed to this: content knowledge exchanges for fostering reciprocal benefits, the location of the activities, the spatial layout and the use of paper-based prototypes.

Content knowledge exchanges as means to foster reciprocal benefits. The decision of conducting activities on 'how to design mobile applications?' was observed to have attracted several YFMs to participate in the workshops.

For instance, Group3_P3 stated during the group interviews done in the last workshop, that they *have learnt a lot*. Also, Group2_P2 expressed that the activities helped him to approach and advance towards the achievement of skills on problem-solving. Additionally, familiarisation with the use and development of mobile applications was highlighted as a positive factor by participants. Group 1_P3 manifested that '*we have learnt what people do while developing applications*'. Group 1_P2 mentioned that the activities helped him to get to know more about his smartphone '*I have a mobile phone but I don't know how one can use the mobile phone, and that was interesting.*'

Furthermore, participating in these activities seemed to have benefited some YFMs to the extent that they felt confident in helping others. Related to this, Group3_P2 said *'I find this program very good because I can help other people who have come [newly in Münster].'* Overall, based on the participants insights, the activities seemed not only to be of interest for them but also of value to them.

Considering these results, it can be said that the strategies selected from the *ethics* and *content* components showed initial promising results. The decision of not using an economic compensation, and instead creating a space for knowledge exchange and mutual learning on tech-related topics, has potential for future participatory HCI research projects with YFMs. Some participants stated that they would like to continue participating in future activities, highlighting topics like *'get to better [know] German people, and what is good here in Germany and what it is not good?'*, or *'no matter the topic, it should be around computers/programming.'* as potentially interesting to them for follow-up workshops. Future work on this matter, could include also insights from the *content* component and to develop workshops which are in line with DiSalvo and Kayla (2017) findings on value-driven learning on PD projects for learning with culturally diverse communities.

Location of the activities. This too seemed to have positively impacted participation of YFMs in the activities. The decision of holding the workshops outside the school environment, particularly when carrying out the activities in a university setting, received positive feedback from the participants. For example, participants stated that having the activities at the university instead of the school was *'better'* (Group1_P2) or *'very good'* (Group2_P1), and *'that maybe in the future I would like to be here'* (ibid). Based on these preliminary insights, the change of location from school to the university, not only benefited participation, and potentially engagement, but it also acted as a new source of inspiration for some participants regarding their future.

The use of paper-based prototypes was highlighted by all facilitators as an activity which encouraged YFMs' engagement. during the prototyping session, around half of the participants, despite being encouraged by facilitators to go out of the activity's space during the snacks break, continued elaborating their prototypes (Figure 4). Moreover,



Figure 4. Participatory workshops (including group discussions, hands-on activities, privacy board, and paper prototypes). Source: Image created by the authors.

the paper-based prototypes served as a tool to engage participants who at the beginning of the activities were not as active as others and who were also asking to ‘use computers’ for designing the mobile applications.

4.3. Constant reflections of facilitators

The reflective practices *on* action on the side of the facilitators provided them with the opportunity to reflect not only on the activities that were done and on the participants dynamics and reactions to it, but also to assess critically their own practices. Such insight goes in line with Binder, Brandt, and Gregory (2008); Sengers et al. (2005)’s discussions. Facilitators used diaries and group discussions as tools to implement reflection *on* action. The insights gained served to identify major challenges, gaps, and aspects for improvement along with a critical look into their own actions and the character of the research. Diaries recordings of the first session were done after the group discussion which might have influenced some of the researchers entries. The remaining entries were done prior the end-of-the-day group discussions to minimise the effect of conversation bias among the facilitators. Overall, reflective practices seemed to present researchers with the opportunity to re-conceptualise and re-calibrate the nature and direction of the participatory and research processes. As to YFMs, the exact impact of the reflective prompts proposed on the learning outcomes was not examined during this study, and could be taken up in follow-up studies.

4.4. Aspects for recalibration

Based on the insights from this case study, several aspects and strategies from the proposed components to enable ‘safe spaces’ in PD projects in HCI with YFMs need to be fully changed or recalibrated. These are as follows:

The use of German language as the common language for the activities received diverse and conflicting feedback. As stated prior, German language was voted by the participants in the meetings before the participatory workshops as the common language to use during the sessions. However, when the activities began, after mentioning the languages facilitators were native speakers of, two participants proposed to have small independent groups, each guided by a facilitator who knew their native languages. The majority of the group, owing to their diversity of languages, voted to keep German as the common language of the workshops. To some, following all activities in German was challenging but still pleasing.

Group1_P1 commented ‘*it was good, but also difficult [because of the] new information*. Others, however, did emphasise the importance of translation to the native language. Group1_P2 stated for instance: ‘*There were some words that I did not understand . . . We had to translate.*’ In a similar vein, Group3_P2 highlighted ‘*I found the workshop good because there was the lady who speaks Farsi who helped me a lot, because I do not understand much German, and I have learned a lot*’. As a suggestion for future activities, some participants proposed to have the activities material in ‘*their own languages*’, even if the joint discussions are carried in German. This would help them to ‘quickly understand what to do.’

The use of a common language requires further explorations since language bias is a major factor when running PD studies in multicultural contexts. There is no one-

language which can enable all participants to express themselves with the same degree of ease. However, running group-oriented activities using multiple languages might also not be practical nor less bias free (e.g. translations can fully hinder the group dynamics as well as can fully affect communication between all actors involved).

Reflective processes on action on the side of the YFMs. There were some mixed results regarding this: The short reflective questions at the beginning briefly reminded the group of the key ideas of previous activities and served as a bridge to newer ones. However, the questions at the end of the session, did not run as expected for two reasons: hands-on activities taking longer than planned, and participants being somewhat less focused on the activities by then.

The written diaries for YFMs did not work as expected. Around half of the participants did not write into the diaries. As for the other half, some registered entries only for the first day where at least three diaries had similar texts. Solely two diaries had observations by YFMs for at least two sessions. The questions aiming to promote reflection on YFMs through their diaries did not work as anticipated. One factor which could have influenced this was the use of German language for formulating and answering the questions. The other factor could be that diaries were suggested to be written after the activities were done in their spare time and further explanations on their benefits were needed to motivate their use. Further iterations of our work should consider other form of diaries such as audio, video or photographic diaries, as well as explicitly promote the option for them to record in their native languages and highlight the value of them doing so. The remaining three strategies (iterative hands-on activities, discussions in small and large groups, and the group semi-structured interviews) were positively reviewed either by YFMs or by the facilitators as shown in previous sections. Mostly, it can be expressed that these tools and strategies partially obtained one of the two effects expected. They promoted YFMs' agency on shaping the workshops' activities since the data used through the combination of all strategies supported the reflective practices *on action* of the facilitators to adapt the PD project and its follow-up activities. The second effect, on fostering YFMs' tech and design-related learning, could not be assessed in this case study. Thus, no further insights can be drawn on this regard.

Iterative activities were appreciated by YFMs. For example, Group2_P1 stated '*The first time it is a bit difficult [...] but the following times, it was easy.*' However, YFMs were emphatic that more workshop sessions would have been desirable, and they suggested this to be improved in future activities. Overall, they manifested the time '*was a bit short* and it would be more beneficial for them to '*come twice, three times, and learn more.*' Lastly, as a more general comment various participants highlighted '*[to] learn new information*', '*[coming up with] ideas*' and '*speaking*', as the most difficult aspects during the activities (and this could have been partly influenced by their limited proficiency in the German language used during the activities).

4.5. A model of 'safe spaces' for YFMs in participatory settings

The observations from the previous sections can be summarised into a model which links the theoretical ideas extracted from the literature (Section 3), and the observations from the case study. Figure 5 presents the model. As the figure shows, there could be several *strategies* which can be used to catalyse trust and comfort during PD activities with YFMs. The

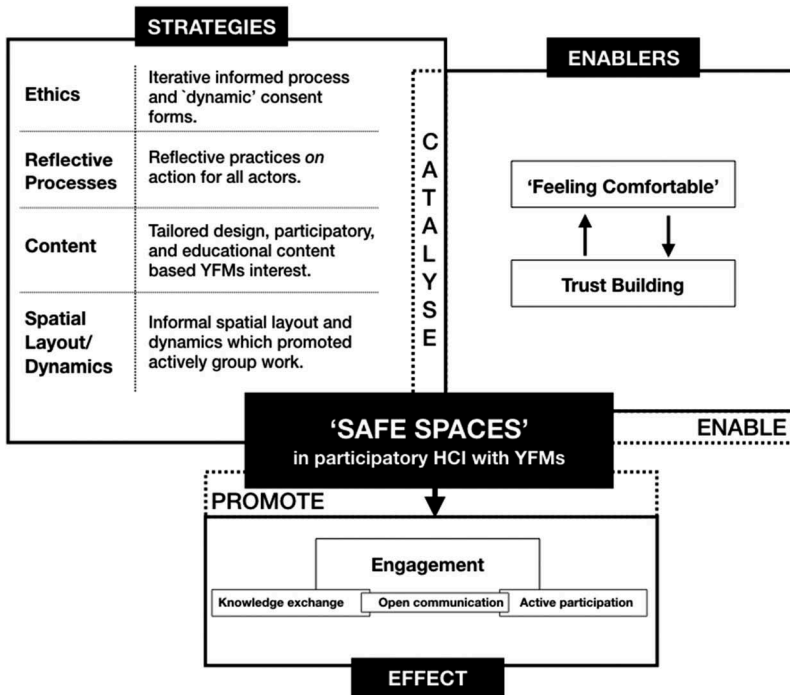


Figure 5. Overview of proposed considerations on 'safe spaces' with YFMs. Source: Image created by the authors.

strategies used as well as the rationales for their choice were presented in [Section 3](#). Trust and comfort may be viewed as *enablers* (or pre-requisites) of 'safe spaces' (i.e. the environment in which open communication, knowledge exchange, and beneficial engagements among all participants can occur). There is a mutual influence between trust and comfort level: trust is a pre-requisite for participants feeling comfortable sharing their stories; at the same time, participants feeling comfortable in an environment may be more inclined to trust others. Finally, if a 'safe space' is present, participants may be highly engaged in the activities (as they were during the case study, see above). Though high engagement was observed, an open environment for communication (i.e. 'safe space') alone does not lead to it. Other, equally important factors may include the interesting content and participants' own self-motivation to learn something new. Open communication, knowledge exchange and engagement are viewed as *effects* of 'safe space' in the current model. The applicability of this model is limited to PD activities, with YFMs, in learning settings – three key parameters of the case study presented earlier. The model itself may be extended and refined as studies on safe spaces with YFMs are replicated or conducted anew (e.g. with older forced migrants).

5. Conclusion

While the importance of the notion of 'safe space' has been acknowledged, relatively little research in PD has looked into what exactly enables such spaces, particularly with YFMs communities. The PD case study presented in this article was

implemented to build an environment which promotes open communication, knowledge exchange, and beneficial engagements among all actors (a ‘safe space’). We identified initial gaps in the HCI literature, and provided a detailed description and an exploratory assessment of the concepts and strategies followed to enable ‘safe spaces’ in PD studies with YFMs. A combination of three aspects made YFMs peculiar in the context of this case study: several participants were unaccompanied minors (coping with this condition requires an adapted ethics process); some had sensitive personal backgrounds and experiences due to their forced displacement processes from their countries of origin (this puts higher responsibilities on the researchers during the activities and data collection process); and lastly, their occasional limited fluency in the local language of the host community (this calls for new strategies for knowledge exchange during the participatory workshops). We collaborated with YFMs of school age to co-design digital tools for their use. The case study highlighted that the combination of *ethical practices*, *reflective processes*, *content*, and group-oriented *spatial layout and dynamics* stimulated active participation, knowledge exchange, feelings of comfort and trust building among YFMs and facilitators. The overall positive outcomes of the study are an indication that the strategies adopted might be useful to other researchers working with young forced migrants. Further explorations could assess how the individual characteristics of participants (e.g. their cultural background or their personal life stories) influence their perception of what constitutes a ‘safe space’ and the design and implementation of its diverse components (ethics, reflective processes, content, and spatial layout and dynamics).

Notes

1. Card sorting is a highly used elicitation technique frequently used for the design of technology. It ‘involves categorising a set of pictures, objects or labeled cards into distinct groups using a single criterion’ (Fincher and Tenenberg 2005).
2. The data collected during the study is available upon request to the authors.

Acknowledgments

We would like to kindly thank all the young participants as well as the staff from the [anonymous] school in Münster, who took interest and actively participated in this project, for their valuable support. Also, we wanted to thank our colleagues Marie-Elene Müller, Lasse Einfeldt, Albert Hamzin, and Max Pfeiffer who supported us in different parts of this research.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

The authors gratefully acknowledge funding from the European Union through the GEO-C project (H2020-MSCA-ITN-2014, Grant Agreement Number 642332, <http://www.geo-c.eu/>); H2020 Marie Skłodowska-Curie Actions [642332].

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