



A Co-Design Method for Museums to Engage Migrant Communities with Cultural Heritage

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Abstract: This chapter presents an experimental method designed to engage migrant participants with local cultural heritage. The initiative was part of an exploratory field study conducted in the context of the European-funded project MEMEX, a research effort promoting the social wellbeing of communities at risk of exclusion through the narration and collection of memories and stories related to cultural heritage. To engage members of such communities with the topic of cultural heritage, we deployed a two-stage intervention: a five-day photo-challenge, where participants were asked to photograph sites that they felt connected to, and a four-hour co-design workshop in which they explored the photos they had captured and co-created stories around specific sites, linking them to their memories. This chapter reflects how this process can benefit designers, individuals, and organizations in the cultural sector in capturing and reflecting on cultural heritage, engaging communities at risk of exclusion while supporting scientific and societal impact.

Keywords: co-design; storytelling; photographs; method; qualitative analysis; migrant communities; cultural heritage

1. Introduction

As migrations and diasporas unfold globally, the cultural integration of these communities becomes a major societal challenge. In 1948, the Universal Declaration of Human Rights, declared cultural participation a fundamental human right, acknowledging that an active and creative participation in cultural activities and events underpins a full and healthy development of human personality (Amnesty International, 2021; United Nations, 2021).

Museums are particularly engaged in creating new models of collaboration and interaction around heritage and culture. Researchers from the EU funded project CultureLabs highlight: "Cultural heritage is no longer seen solely as a safeguarding effort (...) but also as a form of civic and cultural representation and engagement that can contribute to social cohesion" (Giglitto et al., 2021). Participatory approaches can provide new ways of involving marginalized



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groups and communities at risk of exclusion. In her book, "Museums and the Public Sphere" Barret argues that "museums should consider the public sphere as a broad cultural sphere, a democratic public space that engages with a varied public" (Barrett, 2012).

In line with these goals, during the last two decades, museums have started to organize themselves as third spaces, where individuals and groups are given the opportunity to share their knowledge and co-create across cultural divides (Cesário & Nisi, 2022; Ciolfi et al., 2008, 2016; Fuks et al., 2012; Sandell, 2003; Watson, 2007). Projects and efforts range from widening access to different cultural institutions and archives (Claisse, 2017; Clough, 2013; Cowgill et al., 2020; Wen & Ng, 2020); increasing museums' digital activities to widen the relationship with their audiences, enabling physical, social and emotional inclusiveness (Cesário et al., 2020; Cesário, Matos, et al., 2017; Cesário, Radeta, et al., 2017; Kambunga et al., 2020; Nisi et al., 2021; Samaroudi et al., 2020); including migrants and refugees' testimonials and cultural artifacts as statements about their heritage and survival stories (Doolan, 2019; Smyth et al., 2010). Storytelling is thus related to engagement and connectedness for building community and sustainability (Gersie et al., 2020).

Extending on these efforts, in this paper we detail the process and reflections from an exploratory field study, where we piloted a collaborative storytelling method to engage migrant participants around cultural heritage matters. This research was conducted under the European funded project MEMEX. The project operates by promoting encounters, discussions, and interactions between the MEMEX team and communities at risk of social exclusion, aiming to develop collaborative digital tools that provide inclusive access to tangible and intangible cultural heritage. Specifically, MEMEX is involved in creating a mobile app to foster discussions and interactions between communities, joining experiences, memories, and fragmented representations of geo-localized narratives and content linked to their daily urban context. Through a close collaboration with a local Non-Governmental Institutions (NGO) and a cultural organization, the authors engaged migrant communities as storytellers, narrating about their individual encounters with local and personal cultural heritage. Migrant communities are inherently fragile because they are often detached from their original culture and support structures (family and state). As a result, they can encounter barriers which prevent access to various resources and cultural opportunities that are fundamental for social integration (Sabatini, 2019), and which are typically available to members of their hosting culture. With this work we underline the importance of capturing and mobilizing migrants' tangible and intangible heritage in order to foster their integration in foreign cultures and societies.

A first step to support and design for cultural participation is to understand how these communities connect with their host city's heritage, and how they talk about it. For this reason, we developed a preliminary field study with first- and second-generation communities of migrants in Lisbon, Portugal. The field study was articulated into two stages: (1) a five-day photo-challenge, and (2) a four-hour co-design workshop where participants co-create new

stories based on the existing ones. This field study laid the groundwork to start understanding how migrants might discuss their daily life in their hosting city, how they might relate to it, and how they might convey these experiences as stories. Concurrently the work contributes to extend on co-design formats for cultural inclusion, which is the main contribution of this paper. In the following sections, we firstly report on how the design community presents and discusses the role of designers facilitating the participation of migrant communities. Then, we describe the field study method in detail and reflect on how designers and cultural heritage institutions can appropriate this method to capture the heritage from selected communities.

2. Designers facilitating the participation of migrant communities

In an authoritative western professional tradition, the designer is an influential figure in any cross-cultural negotiation. Designers are implicated in becoming a constituent of transforming cultural practices. Stewart (2004) looks at design as a cultural activity and cultural production. He discusses the role of the designer within the context of culturally diverse communities, especially those communities within which both recent migrants and more established residents are in the process of negotiating new, cross-cultural, local identities. When designers enter into existing circumstances to enable social change, they can disrupt existing practices, reconfigure local power dynamics and shift gender relations in intentional or unknowing ways (Baek et al., 2018). St John (2016) reflects that designers (the outsiders) are not experts on migrant communities, and the inputs from the community give a richer representation of the cultural context. Stewart then argues that public open spaces shared by diverse community members potentially play a crucial role in fostering a culture of engagement (Stewart, 2004). Designing with migrant communities established over many generations differs radically from designing for organizations or individuals. Any interaction takes place within a network of people whose links are not necessarily transparent to outsiders (Winschiers-Theophilus et al., 2012). Many migrant communities seek to reproduce features of their home community in their new locations. The development of virtual community nets enables migrants to enter the discourse and social being of their original community of identity (Little & Ando, 2002). However, our knowledge of design for social innovation outside Europe and the US is still insufficient (Baek et al., 2018).

The importance of user involvement in design activities has been widely recognized to design more usable and acceptable systems (Winschiers-Theophilus et al., 2012). In the changing landscape of design research, designers have been moving increasingly closer to the future users of what they develop, co-designing with people to address design issues and societal challenges (Sanders & Stappers, 2008). Facilitating participation is not about cultivating a composite of disparate individuals but about contributing to an environment where interactions can influence design (Winschiers-Theophilus et al., 2012).

We take co-design to refer to any act of collective creativity (creativity that two or more people share). Co-design methods value both the creativity of designers and people not

trained in design, working together in the design development process (Sanders & Stappers, 2008). Baek and colleagues (2018) used the co-design method to explore and prototype different ways to document and archive refugee stories. They demonstrate the potential of an inclusive approach to designing public archives and creating opportunities to discuss and rethink the archival mission in multi-cultural societies. In another study conducted by Shumack with second generation migrant communities (Shumack, 2008), each participant researches a particular community context using two points of view of the self – participant and observer. Participants identified their participant voices through a family connection to their local temples. Through their positional voice reflections, they shift perspective to reflect upon their identity as second-generation Chinese-Australian. In so doing, it links design research with human experiences of community and culture.

3. Field study

Aware of the limitations of interviews (Willox et al., 2012) when engaging people with cultural heritage (Mohr et al., 2018), we deployed a field study adapting methods from storytelling elucidated by photos and co-design, customized for the migrants' time and spatial constraints. In collaboration with one local NGO – Instituto Marquês de Valle Flôr (IMVF) – and a cultural organization - Mapa das Ideias (MDI) - ten young adults (first- and secondgeneration migrants with Brazilian, Cabo Verdean and Mozambican roots) were invited to participate in the study. The study consisted in a five-day photo-challenge in Lisbon and a four-hour co-design workshop in which they explored the photos and co-created stories around the captured sites and heritage, linking them to their memories and experiences. The workshop was audio-recorded, and the researchers took notes in a final slot with all participants to understand how migrants might discuss their daily life in their hosting city, conveying these experiences as stories. The participants were informed about the nature and purpose of the study when recruited by the IMVF and were asked to use their own smartphones to take photos. A consent form about the aims of the study and explaining the protection and privacy treatment of the data was presented to and signed by all participants. Participants were informed that they could leave the study at any time, without needing to justify themselves. The study was approved by the Ethic committees of the Instituto Superior Técnico, University of Lisbon.

3.1 Photo-Challenge

For the first stage, over the course of a five-day period, participants were asked to take five/six photos of Lisbon's sites (buildings, public spaces, heritage objects) that they could relate to, that connected to their memories, their past and present heritage, and family history. The participants were asked to provide a textual description for each photo. This text contained the image's title and a short outline of a memory or story accompanying the photo. Participants sent the photos and their descriptions to a contact person at the IMVF, before being forwarded to the researchers with details of authorship removed. Photos were edited to deny identification of people, and vehicles by means of blurring faces and car

plates (Figure 1). The dataset was anonymized, and each participant was coded with one letter, in alphabetical order.



Figure 1 Examples of the photos taken during the photo-challenge, printed and polaroid styleframed, ready to be used in the co-design workshop. The frames include the title of the photograph, as given by the authors, and an identification number.

3.2 Co-Design Workshop

For the second stage, one week later, the participants attended a four-hour co-design workshop. The workshop took place in the IMVF's premises. Each participant was given an envelope with a randomly chosen set of another participant's photos, including the titles, but not the story descriptions (See Fig. 1 and 3). The participants were then split into two groups to discuss and co-create stories around the photos assigned to them. They were asked initially to work on their own, before co-creating as a group. Care was taken to avoid placing participants in the group where their own photos were discussed. Upon the participants' consent, the sessions were recorded through audio. The schedule of the workshop is outlined below.

Welcome of the participants and introduction of the project (45 min). Reception, introductions between participants and session support were coordinated by three facilitators (two from MDI and one researcher who designed the study). Most of the participants had already met, some of them being alumni or students at the same University. The MEMEX's aims and study goals were presented to the participants by the facilitators (Figure 2).

Self-presentation and group selection (20 min). Inspired by England's approach (2017), participants and facilitators took time to introduce themselves and get to know each other. Introductions were focused on living and lived locations: where participants were from, where they currently resided, how long they had been living there, and what their day-to-day places of reference were. The facilitator presented the structure of the co-design workshop (Figure 2). At this stage, participants were informed of the recording instruments and how the collected data would be used. They were requested to sign an Informed Consent form granting permission for the researchers to use their photos from the challenge and audio record their conversations during the workshop for research purposes. Each participant was given an envelope containing another participant's photos, as well as a pencil, and a small notebook.



Figure 2 Photo from the Welcome and Introduction sessions. Participants taking notes during the presentation of the MEMEX project.

Storytelling dynamics (01h40m). Participants were split into two five-person groups occupying two adjacent rooms. One group was left alone, while the second group, due to logistical reasons, had to share the room with a collaborator from the IMVF, the recruiting institution. The IMVF collaborator was carrying out regular work and kept her headphones on at all

times. Participants from each group were given 10 minutes to open their envelopes and individually create a story around those photos, following the original author's order — the photos were numbered to know the order they were shot (Figure 3). Afterwards, participants were asked to share their stories and photos with the rest of the group. Following this, each group had one hour to discuss the five sets of photos and co-create three new stories as a group. Participants were not allowed to change the order of the photos in a collection. The final co-created stories were written-up on a flipchart. During this process, participants talked about how they related to each other's photos, and how they perceived their host city. The timing was kept by the facilitators, who waited outside the rooms.

Coffee-break (30 min). A coffee-break acted as a moment of relaxation after the co-design workshop and before presenting the co-created stories at the final plenary session. During this time, participants broke out of their specific group's formations, although some kept discussing the topics that emerged during the session.

Plenary session (45 min). Finally, a plenary session grouped all participants. During the gettogether, each group selected a spokesperson to present the stories that were collaboratively produced. After each storyline was presented, a facilitator asked the original author of the photos to comment on the narrative and explain the rationale behind it, while another facilitator was observing and taking notes.



Figure 3 Envelopes containing the individual set of photos that were distributed to the five groups (left) and the numbered set of photos from participant A (right).

4. Research method

Data from the researchers' direct observations and transcripts from the story co-design sessions were analysed and synthesized. The audio recordings of the session were transcribed in Portuguese and English. The researchers used thematic analysis to organise and describe the data, identifying, analysing, and reporting patterns within the studied transcripts (Braun

& Clarke, 2006). The analysis was performed through NVivo 12 software by the first author, and then discussed with the second. Firstly, the researcher became familiarized with the transcripts via multiple readings and defined codes. Codes across the whole set were then collated into broader themes and given exact names and definitions to capture the essence of each one. While codes identify significant phenomena in the data, themes are interpretations of the codes and the data. Two overarching themes were identified from the analysis: Workshop Dynamics containing four codes, and Memories containing seven codes. In the scope of this chapter, we will focus on the Workshop Dynamics and reflect on how these could be reused and benefit a larger pool of beneficiaries, including NGOs dealing with communities at risk of exclusion, cultural institutions such as galleries, libraries, archives, and museums at large. The thematic related to the Memories codes are the focus of another publication (Cesário et al., 2022).

4.1 Workshop Dynamics

Besides constructing and narrating stories during the workshop, participants talked about the process itself (Table 1). These conversations tended to clarify the tasks of the workshop, considering, for example, whether they should create just one story with all the given photographs from one set, or different stories for each photograph from one set. The conversations also explored how the photographs were taken and the logistics for taking them, as well as the places appearing in the photographs, places they don't know and places they would be willing to visit.

Table 1 Map of codes identified under the theme Workshop Dynamics along with examples of the transcripts assigned to those codes.

Code	Transcripts
Unclarity of the tasks	J: But are we supposed to put the stories together? A: No, it's supposed to be three stories.
Overlapping heritage	K: Funny, I also took a picture of the College of Humanities.
Logistics of taking the photographs	B: And the logistics of going to certain places to shoot? E: It wasn't hard for me most places I go every day.
Curiosity towards the unknown	K: I don't know this place. But now I want to get to know it!

From the thematic analysis, the theme *Workshop dynamics* (total of 15 transcripts) includes four codes: (i) *Unclarities of the tasks*; (ii) *Overlapping heritage*; (iii) *Logistics of taking the photographs*; (iv) *Curiosity towards the unknown*. Below we describe and reflect on each

code. A closer look at these codes highlights avenues for how to better cater to the workshop goals about facilitating an inclusive participation and access to cultural heritage; and how to leverage on the best practices that merged from this study and refine what did not work as intended.

i) Unclarities of the tasks. Some participants were unclear about the exercise tasks. They wondered if they should create only one story with all the photographs from the set each participant was given, or if they should create a different story for each photograph of a set. They also were unsure about the possibility of changing the order of the photographs in a set. We thus found the instruction was too complex for the participants. It is important to detail and explain all the processes and provide clarity as an initial point of contact before participants start using any probe (Gaver et al., 1999). If the instructions had been clearer, instead of clarifying the tasks, participants could engage in more creative and productive work, recalling and creating more stories and reflections on their past and present heritage.

ii) Overlapping heritage. Participants highlighted similarities between photographs from the different sets: many images featured the University of Lisbon College of Humanities from various angles. Participants also brought up and compared the photographs they intended to shoot, but did not get around to, with the existing printed ones. The occurrence of similar or same sites in several participants pictures, is indicative of some shared understanding of heritage, in particular the heritage that is anchored in the current residence whereabouts. For example, when participants captured the university site as common location where memories, cultures and their original heritage can be cultivated, celebrated, and commemorated, it manifested their shared understanding of that site. Some participants mentioned not having actually shot such pictures, but intending to, highlighting how those same places and cultural symbols where shared in their understanding of culture and heritage.

iii) Logistics of taking the photographs. Participants talked about the logistics of shooting the photographs for the exercise. Some of them visited certain places just because they wanted to photograph them. Others took photographs of places outside Lisbon and then dismissed them as they thought these were out of scope for the workshop. Some participants also commented that it was hard to capture the essence of the places they wanted to photograph, because of the crowds (tourists) hiding the architectonical features they wanted to focus on; others opted for less known and crowded spots and took photographs of the places they visit every day. It is interesting to note the juxtaposition of participants capturing the cultural heritage of places overcrowded by tourists, against those who choose their everyday life routines and more mundane locations to manifest their connection to culture and heritage. Further studies could illuminate: (i) how touristic places and canonical heritage influences the migrant's sense of heritage; (ii) how do the interpretations of such sites differ across different cultures; (iii) what memories and stories do those who valued patterns in their daily routine and mundane locations attach to those places; (iv) can these places become celebrations of polyvocal heritage, and how do we layer such rich interpretations on the physical sites?

iv) Curiosity towards the unknown. Several participants mentioned that some photographs they were given to work with, captured places unknown to them, which made them want to go there and visit them. They realized the pictures were exposing places in Lisbon (i.e., Squares), that they did not recognize, raising discussions about where were the sites located. This code exposes how participants were open to expand their knowledge about the local cultural heritage and their cultural heritage landscape. Curiosity emerged as a powerful force that could push towards inclusion and integration of knowledge, culture and further human relationships towards more inclusive and multicultural ones.

5. General reflections

The process of storytelling entails a reflection about what information to deliver and in which format. When this process takes place around images, even if captured by another person, the storytelling process takes the form of recognition and reflection, starting from another person's experiences. An individual's act of sharing information in a collective activity can imply self-expression and personal reasoning. Below we reflect on sensitizing concepts and improvements to be considered when applying this method to capture a given group or community's heritage by designers and cultural heritage institutions. We highlight challenges and best practices, illuminating the way for how researchers, designers and cultural institutions could appropriate the method to engage communities at risk of exclusion in sharing and appreciation of cultural heritage.

5.1 Privacy Concerns

Out of privacy concerns, participants were not asked to annotate their photos with the Global Positioning System (GPS) coordinates of the location where they were taken. In hind-sight, adding GPS coordinates to the photos could help build a map of memorable locations overseen by the migrants' communities. During the workshop, participants were excited about the locations cited in the stories and the sites that participants recognize and are willing to photograph and expressed interest in visiting them. Hence, asking participants during the photo-challenge to provide each photos' GPS coordinates could help in building interest and further participants curiosity and knowledge about new sites, which they could visit and add to their cultural landscape. The GPS coordinates nevertheless could still be hidden from the participants during the workshop, to grant privacy (Xu et al., 2015) and safe discussions about their neighbouring areas, hopefully fostering introductions and new connections among the participants. But for the cultural heritage professionals, knowing the photos' locations allows to build a map of memorable places, follow-up with further studies to reinforce their relationship with the community and extract meaningful cultural heritage discussions.

5.2 The Narrative Aspects

In the workshop, participants were required to co-create a story following the sequence of another author's photographs. Participants were encouraged to imagine a tale following a

sequence shot by someone else and wondering about the site's location where the photo was taken – however, participants debated if the sequence had to be story- or location-driven. As a result, participants embraced each other's views of the city and came together in a collective effort to create meaning out of a sequence of images, consciously or subconsciously, trusting the original author's sequence. Anyhow, while no particular constrains where highlighted in the story co-design task, the result was a set of paragraphs – very similar in length to the description each original author made of each photo. As an alternative structure to the storytelling task during the co-design workshop, researchers, designers and cultural heritage professionals could use a more defined storytelling exercise, asking participants to create stories with classic plot thresholds and a defined beginning, middle and end (Blythe, 2017), and allowing participants to shuffle the order of the photos from a set. The co-design and plenary sessions could include discussions and insights about the juxtaposition between two kinds of story-making approaches: the personal, freestyle photographic narratives outlined here, and a more structured process adhering to accepted storytelling conventions.

5.3 Location Where to Host the Workshop

A significant limitation of the workshop was the space in which the groups of participants were placed: in particular for the group that shared the room with some of the local NGO's staff. Although the staff had their headphones on, and not explicit mention of this issues was recorded from the participants themselves, we fathom that the fact of having other people in the room not taking part in the activity, might have disturbed the participants and prevented them from sharing some of their considerations out loud. Future replica of this method should provide dedicated rooms, without the presence or passage of outsiders not taking part in the workshop. Moreover, movable furniture to adjust to the group breaking out into smaller discussion and stories would be advisable.

5.4 Benefits for the Participants

During the workshop unfolding events, we witnessed how this method can serve as a socializing mechanism and promote social cohesion among participants. Since we are dealing with potentially marginalized groups, cultural heritage can act more as an excuse to connect and communicate, than as a goal in itself. If focused on socialization, the process can create space to build territorial references for its participants and facilitators that can develop a curiosity for sites and heritage that participants had referenced. It is the difference between being "in" a territory and being "in your" territory. This method can help turn the natives' common social space into a space similarly felt and appropriated by these communities.

5.5 Commitment of the Participants

The length of the commitment and availability of the participants, pertaining to the communities at risk of exclusion, is part of the nature of their social weaknesses. It is not unusual

among socially marginalized groups, to develop self-exclusion mechanisms to protect themselves. In the deployment of any research method dealing with marginalized groups, the dropouts are always very high. A solution to counteract this problem is to identify communities' local leaders – the people whose opinion counts most – and formally engage these people within the scope of the projects. This engagement makes them the official contact point and will influence the community to get involved as well. Moreover, at the time of the study, due to social distancing and COVID-19 pandemic safety measures, this dropout could be even more significant. In these conditions, research methods that require participants' presence for several days/months are hampered (Lotz, 2020). Alternatives need to take into considerations digital tools and ICT (Cesário & Nisi, 2021), but mostly the participants affordance and access to such tools and levels of digital literacy alike. Moreover, many audience development and digital storytelling methodologies (Falchetti et al., 2020, 2021) require weeks or months of participants' commitment. Our method was nimbler, asking engagement of participants for five days only, at their own time and with their devices. These design choices elicited comfort and ease of participation. The participants were asked to commit to one afternoon of a presential co-design session. While methods prescribe time an essential element to build feelings of trust and safety among participants and with facilitators (Da Milano & Falchetti, 2014), our experience delivered promising results with participants bonding and sharing among themselves (demonstrated through the appreciating other interpretations of their own photos, curiosity for cultural heritage and sites captured by others, ease of co-creating stories) and with the facilitators (demonstrated by approaching and conversing with the facilitators over coffee breaks).

6. Conclusions

This chapter describes an experimental method piloted to engage migrant communities in photo-challenge and digital storytelling practice to foster memory recollections and story codesigns around cultural heritage. We believe that this method can be appropriated and reutilised by researchers, designers and cultural heritage operators to capture the memories and intangible heritage of communities at risk of exclusion and connect it to existing and already documented cultural assets. This method encompasses a five-day photo-challenge and a four-hour co-design workshop. A participatory and co-design process mediated by images presents a practical method to contrast and develop connections between memories, places and cultural heritage. From our field study with a group of first- and second-generation migrants in Lisbon, interest and personal relationships with essential urban sites and cultural heritage emerged. The collaborative effort and the creativity that emerged from the workshop generated a safe, mutually respectful and genuine atmosphere where interests in each other's experience and histories were shared. The workshop thus demonstrated that story sharing and co-design could be a successful technique to create an inclusive environment for migrants.

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7. References

- Amnesty International. (2021). *Universal Declaration of Human Rights*. Amnesty International. https://www.amnesty.org/en/what-we-do/universal-declaration-of-human-rights/
- Baek, J., Yee, J., & Akama, Y. (2018). Editorial: Designing Social Innovation in Cultural Diversity and with Sensitivity. *DRS Biennial Conference Series*. https://dl.designresearchsociety.org/drs-conference-papers/drs2018/editorials/7
- Barrett, J. (2012). Museums and the Public Sphere. John Wiley & Sons.
- Blythe, M. (2017). Research Fiction: Storytelling, Plot and Design. *Proceedings of the 2017 CHI Conference on Human Factors in Computing Systems*, 5400–5411. https://doi.org/10.1145/3025453.3026023
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa
- Cesário, V., Acedo, A., Nunes, N., & Nisi, V. (2022). Promoting Social Inclusion Around Cultural Heritage Through Collaborative Digital Storytelling. In M. Wölfel, J. Bernhardt, & S. Thiel (Eds.), *ArtsIT, Interactivity and Game Creation* (pp. 248–260). Springer International Publishing. https://doi.org/10.1007/978-3-030-95531-1_17
- Cesário, V., Matos, S., Radeta, M., & Nisi, V. (2017). Designing Interactive Technologies for Interpretive Exhibitions: Enabling Teen Participation Through User-Driven Innovation. *Human-Computer Interaction INTERACT 2017*, 232–241. https://doi.org/10.1007/978-3-319-67744-6 16
- Cesário, V., & Nisi, V. (2021). Collecting Qualitative Data During COVID-19. In C. Ardito, R. Lanzilotti, A. Malizia, H. Petrie, A. Piccinno, G. Desolda, & K. Inkpen (Eds.), *Human-Computer-Interaction INTERACT 2021* (pp. 377–381). Springer International Publishing. https://doi.org/10.1007/978-3-030-85607-6_41
- Cesário, V., & Nisi, V. (2022). Designing with teenagers: A teenage perspective on enhancing mobile museum experiences. *International Journal of Child-Computer Interaction*, *33*, 100454. https://doi.org/10.1016/j.ijcci.2022.100454
- Cesário, V., Petrelli, D., & Nisi, V. (2020). Teenage Visitor Experience: Classification of Behavioral Dynamics in Museums. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*, 1–13. https://doi.org/10.1145/3313831.3376334
- Cesário, V., Radeta, M., Matos, S., & Nisi, V. (2017). The Ocean Game: Assessing Children's Engagement and Learning in a Museum Setting Using a Treasure-Hunt Game. *Extended Abstracts Publication of the Annual Symposium on Computer-Human Interaction in Play*, 99–109. https://doi.org/10.1145/3130859.3131435
- Ciolfi, L., Avram, G., Maye, L., Dulake, N., Marshall, M. T., van Dijk, D., & McDermott, F. (2016). Articulating Co-Design in Museums: Reflections on Two Participatory Processes. *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work & Social Computing*, 13–25. https://doi.org/10.1145/2818048.2819967

- Ciolfi, L., Bannon, L. J., & Fernström, M. (2008). Including Visitor Contributions in Cultural Heritage Installations: Designing for Participation. *Museum Management and Curatorship*, *23*(4), 353–365. https://doi.org/10.1080/09647770802517399
- Claisse, C. (2017). The Augmented House Museum: Co-Exploring Tangible Interaction to Increase Engagement with Heritage in House Museums. *Proceedings of the 2017 ACM Conference Companion Publication on Designing Interactive Systems*, 380–381. https://doi.org/10.1145/3064857.3079162
- Clough, G. W. (2013). *Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age*. http://repository.si.edu/xmlui/handle/10088/21153
- Cowgill, R., Dix, A., Bashford, C., Downie, J., Twidale, M., Reagan, M., Ridgwell, R., & McVeigh, S. (2020, October 16). Democratising Digitisation: Making History with Community Music Societies in Digitally Enabled Collaborations. *7th International Conference on Digital Libraries for Musicology*. International Conference on Digital Libraries for Musicology.
- Da Milano, C., & Falchetti, E. (2014). Stories for Museums, Museums for Stories. Nepi: Vetrani Editore.
- Doolan, E. (2019, July 29). *Digital Resource: Conflict Textiles*. Oxford Research Encyclopedia of Latin American History. https://doi.org/10.1093/acrefore/9780199366439.013.796
- England, S. F. (2017). *Picturing Halifax: Young Immigrant Women and the Social Construction of Urban Space* [Report]. https://DalSpace.library.dal.ca//handle/10222/73363
- Falchetti, E., Da Milano, C., & Guida, M. F. (2021). Heritage Education and Digital Storytelling: Enriching Students' Soft Skills, Citizenship and Participation in a RRI Perspective. In P. Sandu, V. Tudisca, & A. Valente (Eds.), Co-creating in Schools Through Art and Science: Lessons Learned in Community Engagement Within the Responsible Research and Innovation Framework (pp. 7–15). Springer International Publishing. https://doi.org/10.1007/978-3-030-72690-4_2
- Falchetti, E., Milano, C. D., & Guida, M. F. (2020). La narrazione digitale come strategia per l'accessibilità e l'inclusione culturale in museo. 21, 5.
- Fuks, H., Moura, H., Cardador, D., Vega, K., Ugulino, W., & Barbato, M. (2012). Collaborative Museums: An Approach to Co-design. *Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work*, 681–684. https://doi.org/10.1145/2145204.2145307
- Gaver, B., Dunne, T., & Pacenti, E. (1999). Design: Cultural Probes. *Interactions*, *6*(1), 21–29. https://doi.org/10.1145/291224.291235
- Gersie, A., Nanson, A., & Schieffelin, E. (2020). *Storytelling for a Greener World: Environment, Community and Story-based Learning*. Hawthorn Press.
- Giglitto, D., Ciolfi, L., Lockley, E., & Kaldeli, E. (Eds.). (2021). *Cultural heritage and social impact: Digital technologies for social inclusion and participation—Symposium Companion*. Sheffield Hallam University.
- Kambunga, A. P., Winschiers-Theophilus, H., & Smith, R. C. (2020). Participatory Memory Making: Creating Postcolonial Dialogic Engagements with Namibian Youth. *Proceedings of the 2020 ACM Designing Interactive Systems Conference*, 785–797. https://doi.org/10.1145/3357236.3395441
- Little, S., & Ando, A. (2002). Building on virtual common ground: Design participation for the network age. *DRS Biennial Conference Series*. https://dl.designresearchsociety.org/drs-conference-papers/drs2002/researchpapers/48
- Lotz, N. (2020). *Inequalities in the participation in social learning and open innovation during crisis*. https://doi.org/10.21606/pluriversal.2020.207

- Mohr, F., Zehle, S., & Schmitz, M. (2018). From Co-Curation to Co-Creation: Users as Collective Authors of Archive-Based Cultural Heritage Narratives. In R. Rouse, H. Koenitz, & M. Haahr (Eds.), *Interactive Storytelling* (pp. 613–620). Springer International Publishing. https://doi.org/10.1007/978-3-030-04028-4_71
- Nisi, V., Bostock, H., Casario, V., Acedo, A., & Nunes, N. (2021). Impalpable Narratives: How to capture intangible cultural heritage of migrant communities. *C&T '21: Proceedings of the 10th International Conference on Communities & Technologies Wicked Problems in the Age of Tech*, 109–120. https://doi.org/10.1145/3461564.3461575
- Sabatini, F. (2019). Culture as Fourth Pillar of Sustainable Development: Perspectives for Integration, Paradigms of Action. *European Journal of Sustainable Development*, 8(3), 31–31. https://doi.org/10.14207/ejsd.2019.v8n3p31
- Samaroudi, M., Echavarria, K. R., & Perry, L. (2020). Heritage in lockdown: Digital provision of memory institutions in the UK and US of America during the COVID-19 pandemic. *Museum Management and Curatorship*, 35(4), 337–361. https://doi.org/10.1080/09647775.2020.1810483
- Sandell, R. (2003). Social Inclusion, the Museum and the Dynamics of Sectoral Change. *Museum and Society*, 1(1), 45–62.
- Sanders, E. B.-N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign*, 4(1), 5–18. https://doi.org/10.1080/15710880701875068
- Shumack, K. (2008). The Digital Cultural Atlas Project: Design Research and Cultural Narratives. An Experiential Approach for Design Education. *DRS Biennial Conference Series*. https://dl.designresearchsociety.org/drs-conference-papers/drs2008/researchpapers/38
- Smyth, T. N., Etherton, J., & Best, M. L. (2010). MOSES: Exploring new ground in media and post-conflict reconciliation. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1059–1068. https://doi.org/10.1145/1753326.1753484
- St John, N. (2016). Towards more culturally inclusive communication design practices: Exploring creative participation between non-Indigenous and Indigenous people in Australia. *DRS Biennial Conference Series*. https://dl.designresearchsociety.org/drs-conference-papers/drs2016/researchpapers/84
- Stewart, S. (2004). Hermeneutics and Cross-Cultural Design: Reflections on Community Consultation and Collaboration by Designers in Fairfield, Sydney. *DRS Biennial Conference Series*. https://dl.designresearchsociety.org/drs-conference-papers/drs2004/researchpapers/189
- United Nations. (2021). *Human Rights*. United Nations; United Nations. https://www.un.org/en/global-issues/human-rights
- Watson, S. (Ed.). (2007). Museums and their Communities (1st edition). Routledge.
- Wen, Q., & Ng, S. (2020). Inclusive Design Museums and Social Design. *DRS Biennial Conference Series*. https://dl.designresearchsociety.org/drs-conference-papers/drs2020/researchpapers/78
- Willox, A. C., Harper, S. L., Edge, V. L., Lab, 'My Word': Storytelling and Digital Media, & Government, R. I. C. (2012). Storytelling in a digital age: Digital storytelling as an emerging narrative method for preserving and promoting indigenous oral wisdom: *Qualitative Research*. https://doi.org/10.1177/1468794112446105
- Winschiers-Theophilus, H., Bidwell, N. J., & Blake, E. (2012). Community Consensus: Design Beyond Participation. *Design Issues*, *28*(3), 89–100. https://doi.org/10.1162/DESI_a_00164
- Xu, H., Wang, H., & Stavrou, A. (2015). Privacy Risk Assessment on Online Photos. In H. Bos, F. Monrose, & G. Blanc (Eds.), *Research in Attacks, Intrusions, and Defenses* (pp. 427–447). Springer International Publishing. https://doi.org/10.1007/978-3-319-26362-5_20

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