

**Designing Playful Urban Installations:
An Exploration of Participatory Methods**

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A Thesis
in
The Department
of
Design and Computation Arts

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Design at
Concordia University
Montreal, Quebec, Canada

June 2022

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CONCORDIA UNIVERSITY
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Master of Design

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Abstract

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For decades the human dimension has been neglected in urban planning topics. With the emergence of modernism, streets started to get larger in order to accommodate more cars, and step by step, the space for pedestrians has been reduced, dictated by the rhythm of the automobile flow. With the invasion of cars into cities, the high-rise buildings and towers made cities less and less pleasant for inhabitants. In return, city life studies demonstrate where conditions for pedestrians are improved, social and recreational activities increase extensively. In light of this situation, a number of cities have integrated playful urban installations to revitalize city centers. In this research, the creative practice of designing four concepts of interactive urban installations through a research through design (RtD) approach combined with a reflective practice is described. Then since incorporating the notion of play in a way that encourages social interactions requires a good understanding of human behaviour, site observations of two urban installations were also conducted in Montreal. Ultimately, recurring events and themes were investigated and turned into co-design activities for establishing participatory workshops. This process proved to be particularly useful for validating the developed concepts with potential users and created the ground for further reflection. Through this exploration, the core concepts of participatory practices were addressed which reconcile with the current endeavour for transforming situations to make cities more enjoyable and welcoming in the future.

**To my parents; Masoud and Haleh,
To my life partner; Mehdi,
To my brother; Parsa.**

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Introduction

For decades the human dimension has been neglected in urban planning topics. With the emergence of modernism, streets started to get larger in order to accommodate more cars, and step by step, the space for pedestrians has been reduced, dictated by the rhythm of the automobile flow (Gehl, 2010). With the car circulation at 50km per hour, and with the noise and air pollution caused by the increasing amount of motor vehicles, the experience of walking is often not pleasant, not to mention the lack of safety imposed by the proximity of the automobiles. Subsequently, the high-rise buildings and towers reacted and killed the life between buildings. With the invasion of cars into cities, for the first time in history, the majority of the global population became urban rather than rural. Significant changes were needed, and cities had overgrown. Later, at the beginning of the 21st century, urbanists figured out that underscoring the human dimension in cities has raised many challenges. They intended to design lively, safe, healthy and sustainable cities, and all these objectives were tied to increasing concerns for pedestrians, cyclists and life in general. This way, there is indeed a direct connection between improvements in the built environment and a livable city (Gehl, 2010). A closer look at the city life studies demonstrates where conditions for pedestrians are improved, following the increase of walking activities, social and recreational activities increase extensively. The mutual characteristic of life in city space is the versatility and complexity, which coincide with purposeful walking, stopping, resting, staying and conversing (Gehl, 2010). The invention and use of cars in cities had a huge impact on the way people interacted with each other and the city. Initially, in the late nineteenth century, regulations become stricter to protect residents from automobiles and that caused the cities to segregate street users from one another. Later in the twentieth century, when modernism became the prominent approach, the regulations changed to facilitate a way for the street transformation into a network for automobiles. Today's immobile lifestyle exposes us to several mental and physical disorders. This condition intensified when Covid hit, and many individuals were forced to stay at home and work remotely. People lost a large amount of their daily social interaction, or it turned to online form through Zoom or other communication platforms. Consequently, the notion of social contact and its importance in our daily lives becomes even more important; therefore, exploiting the potential of urban play is an appropriate alternative for keeping people close and facilitating their

rebounding after the pandemic, as we might struggle with the consequences of this plague for years after its eradication. Given that, Tonkin (2016) underlines how play promotes health and well-being and describes five measures leading to mental health through play as people are active, they connect with their community, learn from them, become aware of their surroundings and give attention to it, which results in social capital.

In this research, the notion of playfulness and interactivity of urban installations is studied by examining different methods in order to favor social interaction and citizen engagement. Therefore, academic literature on design interventions, ethnographic studies, and participatory workshops were conducted. First, as the creation piece, the process and iterations of the creative practice of designing four concepts of urban installations are described while an attempt made for the application of design principles related to interactivity and playfulness through a research through design (RtD) approach combined with a reflective practice. Then, since a good understanding of human behavior was essential for incorporating the notion of play in interactive urban installations, in a way that encourages social interactions, site observation of two urban installations is conducted in Montreal at different periods of the year. Ultimately user research turned into co-design activities and participatory workshops held, which proved to be particularly useful to validate the developed concepts with potential users, co-design more concepts and reflect on them.

This dissertation can help to inform industrial and urban practitioners about different methods and design considerations for creating playful pedestrian spaces, while taking into account the importance of participants. The objective of this research-creation is not to propose the best urban installation design through implementing all the recommended principles, as it is almost impossible to involve them all in every single concept, but to promote the role of a reflective practitioner in both phases of concept development and user participation. It is hoped this project will provide more information on how designers can develop playful interventions in public spaces and take into consideration end-users to increase pedestrian activity and improve social capital in the city.

Literature Review, Background and Problem Statement

The city: a need to escape from the dominance of the automobile

Jan Gehl (2010) in response to modernism of cities and new formation of urban development states that the increasing numbers of cars today is the result of policies made to adopt cities for more traffic. He believes that the growth of such structure in cities bring about severe sociocultural problems and hurt the nature of interaction in modern urban development. He points to several case studies in different cities and shows how malfunctions can disturb social life, he also mentions that versatility and complexity are two edges of a sword that lead to interaction and liveliness in cities. Accordingly, he puts emphasis on the notion of contact as a vital concept in the city which should be utilized more explicitly in urban development since, as he believes, both necessary and optional outdoor activities arise communication between people. The perception of space is presentable when pedestrians are in contact with each other and there is enough space available for them to communicate with the surroundings. The significance of the issue is to the point that even the semiprivate spaces in front of the buildings in residential areas disseminate good feelings. He refutes the current trend of urban development by claiming that social interaction is at the service of cities today and there are the cities that now determine the quality of life in urban spaces regardless of the dwellers' priorities.

In the book, entitled "The death and life of great American cities", Jane Jacobs (1961) examines the principles of urban planning of big American cities during the modernist era, which are detrimental to cities functioning, and their impacts on people. She criticized that with the emergence of vehicles urban planners have given the priorities to cars, neglected pedestrians, and violated livability and safety of the cities. She attempts to introduce new city planning principles and points to the problems of sidewalks and parks. She also takes into account the economic issue behind city problems and provides some strategies to tackle the issues. She called sidewalks as the main arteries of a city to both foster social interactions and prevent crimes. She believes that a good neighborhood achieves a great balance between people's privacy demand and their wish to be in contact with their surroundings. She also states the importance of diversity in use and that should be considered to produce lively cities, through some details, interaction among residents of small blocks, age of the buildings, and visual city attraction

should be regulated to prevent homogeneity in cities and generate diversity. Jacobs also talks about gentrification and how a neighborhood can be destroyed by its own success. When a neighborhood is popular, a diversity of people and investment possibilities gets drawn. Therefore, the change occurs too quickly and destroys the neighborhood's identity ultimately. She introduces some different tactics to tackle the decline of cities and to enhance the diversity. In terms of transportation systems, she states that people need to move easily to take advantage of the different services offered by the city. Moreover, the transportation system should be designed to keep complexity and mix land use. In this respect, she suggests strategies in which active modes of transportation lead to reducing the number of cars, thus traffic congestion. Among these strategies is widening sidewalks by narrowing the vehicular roadbed, which also creates space for playful interventions. Additionally, Jacobs (1961) mentioned that visual cohesion should not be prioritized while designing the cities since it causes the emergence of many streets that are picturing a repetitive, intense life. Visible irregularities and complexity should be offered instead, such as landmarks, different patterns, varied street furniture and so on. In this sense, urban alienation is a phenomenon that derives from invisibility and intangibility in public urban spaces. These two factors cause the people to not be involved in public spaces and a kind of detachment takes place between them and the urban elements. According to King, Ferrari, Conley and Latimer (Ferrari, 1833), such detached people are more likely to be alienated and have no sense of belonging to their neighbourhood. Friedmann (1999) argues that involving people in planning procedures declines the alienation of small urban spaces and make the people believe that a city is for the residents.

This prioritization of cars over humans in designing cities is still prevalent today and has resulted in the formation of narrow sidewalks, ignoring the human scale, subsequently a reduction in pedestrian activities and urban liveliness. Therefore, in the last decades, many urban designers and researchers have raised concerns over these issues, which led to a new vision for reshaping the cities. Ewing and Clement (Ewing et al., 2006) highlight that compact cities contribute to improving citizens' contact and increased physical activity, which increases social interaction and social community. Consequently, designers who seek to improve social interaction and pedestrian engagement often consider items like density, connectivity, and streetscape.

Prior to this paradigm shift, both Whyte (1980) and Jacobs (1962) had agreed that people attract people. In this connection, Jacobs believed diversity is the principal factor that turns streets into

intriguing and popular places. This can be accomplished when streets can function for more than one main purpose, like commerce, recreation or residence, albeit when they feature small blocks with mix-age buildings. Additionally, this diversity adds to the city's imageability (Lynch, 1964).

In this respect, Jan Gehl (2010) introduces two groups of outdoor activities, necessary and optional, and both are prerequisites for social activities in cities. Social activities include all types of communication between people in city space and require the presence of other people. When a city is inviting, a diverse spectrum of social activities occurs, people exchange greetings and talk to acquaintances they meet. There are chance meetings and small talk at market booths, on benches and wherever people wait, and it causes more extensive contact between people. All over the world, many studies on cities emphasize the importance of social life and activity as an urban attraction. "Man is man's greatest joy," says human happiness and interest in other people. The notion of "contact" refers to the function of the city as a meeting place. People meet, exchange news and talk about different topics. They sit enjoying their coffee while watching other people, who are engaged in other activities.

The notion of Play in Urban Design

In response to the question of how to motivate people to spend time in urban spaces, fun theory explains that the easiest way to transform human behaviour is to make an activity fun. Caillois (1961) viewed play as a way to get away from the tedium of everyday social conventions. While some scholars like Sutton-Smith (2009), tend to introduce play as barren, Huizinga (1950) noted its importance as an expressive action over psychological reflex. The term ludic is from the Latin Ludus meaning 'to play'. In this respect, the notion of Ludic Design introduces explicit interest in playful and curiosity-driven engagement (Lupton, 2018).

In the context of urban design, Quentin Stevens (2007) discuss that play should be integrated into our everyday environment. He explains urban play as an action that lacks apparent instrumental advantages, and either spatially or socially separates us from everyday experience and it includes exploratory engagements with other people. Stevens (2010) in his book the Ludic city, studied game design theories besides architectural theories and states that qualities like discovery, visual

stimulation, physical challenge, mental stimulation and sensory perceptions, will augment energy and liveliness of the built environment. He stresses on the spontaneous nature of ludic cities and how urban environments can inspire playful behaviour. Moreover, he introduced many unique possibilities for interaction, through observing pedestrian behaviours and extracting patterns in busy streets: passers-by give complements to others exercising, smile and wave hand for each other, and take photos with public arts. He found public installations that encourages people to “engage in simulative play not just as a display to others, but to test their own bodily skills, as an escape into fantasy, and even just for its own sake, for the pleasure of the bodily experience” (Stevens, 2007, p. 181). This implies to both the importance of including ludic interventions in cities and the way it is implemented matters evenly.

Similarly, Montgomery (2013) discusses rules of environmental psychology which conduce valuable insights for designing playful cities. For instance, soft edges are pleasing to us, and we get disturbed by sharp sides, or neglecting human dimension as when buildings are too tall and out of normal sight bother people, we are also distressed by loud unpredictable noise. On the contrary, we enjoy novelty, pleasing tactile experiences, mild surprises and when there is opportunity to observe other dwellers. In this sense, Donoff and Bridgman (2017) examined 27 cases studies of urban installations around the world and tried to introduce a set of playful urban typologies including multiple play types, significant design recommendations and different implementing modes. I also applied some of their insights and typologies in developing my concepts in terms of encompassing playful features such as auditory feedback, ownership of the outcome, tactile experiences, encouraging creativity and so on.

Participatory Practices in Urban Design and Human-Computer Interaction

In the past decades, there has been an incremental growth in the practice of involving users in different development projects, such as urban design/planning (Toker, 2007), political and democratic processes (Lundmark, 2018) and perhaps most remarkably in the information technology-related projects, where these practices are called participatory design (PD) (Björgvinsson & Ehn, 2012; Hansen, 2014). The term participatory design suggests a particular development approach that stems from the Scandinavian model of organizational design as a part

of the movement for workplace democracy in the 1980s (Buscher et al., 2002; Sanoff, 2007; Björgvinsson et al., 2012). There is also another trajectory for PD that comes from the North American philosophical convention of pragmatism, which was concerning the civil rights movement, therefore linking learning with participation in the field of public architecture and planning (Petrescu et al. 2005; Forester 1989).

Albeit PD as an attitude relates to a force for change in the formation and governance of people's environment, where collective decision-making is extremely decentralized across all segments of society. In this way, citizens learn the collaborative skills that are necessary for empowerment to adequately participate in different ways in the making of all decisions that impact their lives.

Prior to this in the 1960s, community consciousness induces public involvement regarding their physical environment which causes an increase in social responsibility. In this regard, the patronage model of intervention introduced by Paul Davidoff influenced many urban design professionals and encouraged them to reject practicing traditional methods. Contrarily, they opposed urban redevelopment and advocated for those citizens whose voice needs help to be heard; thus, creating techniques for their participation. Through these initiatives, citizens were granted authority to participate in implementation and designing processes using technical support (Stanoff, 2006).

In participatory approaches, users are supposed to be educated and learn the participatory skills to become able to efficiently co-design artefacts, systems, or services (Robertson & Simonsen, 2012). Besides, academics suggest that users' tacit knowledge delivers solutions and favourable outcomes (Spinuzzi, 2005). In this respect, another important factor that plays a role is the collective intelligence that is followed by the process of group interaction, especially when the result is evidently more effective and persuasive compared to the entire individual inputs (Fischer et al., 2005). Consequently, PD practitioners should take into account that participation is not just an effort for finding an agreement, but to engage people in meaningful and determined modifications to their everyday living (Sanoff, 2007).

Introduced by Greenbaum and Loi (2012) participatory design includes four core concepts. First, equalizing power relations refers to discovering ways to give voice to people and make better futures through designing creative ways of engaging people that go beyond user-centred conventional techniques. Second situation-based action that suggests there is not a single participatory design method or process, and each project's tools and techniques should be crafted contextually relevant according to project objectives. The third is mutual learning which establishes PD as “a process of investigating, understanding, reflecting upon, developing and supporting mutual learning in collective ‘reflection-in-action’” (Robertson and Simonsen 2013). And lastly, design by doing, which is borrowed from the cognitive assumption stances to handle the shortcomings in computer system methods due to the fallacy that assumes users’ thoughts could be programmed into user interfaces. In response, PD has developed a variety of tools and techniques to avoid this bias through encouraging making and ongoing iterations.

Furthermore, participatory practices are characterized as a maturing area of research in human-computer interaction (HCI) projects, which its principles regarding interactivity are another source of inspiration for developing urban installation concepts. Therefore, in view of the productivity of the PD in urban design and HCI topics and the need for creating the ground for exploring the applicability of the tools developed through a creative process, the setting for this study is yet a participatory design project co-designing playful and interactive urban installations that are contemplating to improve social interaction among citizens.

Accordingly, the research questions that I sought to study in this project are as follows:

- What type of design methods can enable citizens to co-design playful and interactive urban installations to improve pedestrian social contact?

And sub-questions are:

- How can we explore the potential of playful urban interventions through a research through design approach and participatory design practice?
- How can online participatory design practices support the validation of the concepts that are designed through a reflective process?

Methodology

In this section, I introduce the methods that I have employed in this project. Due to the nature of this research through design project which requires a balance between the practice of design and theories, phases one and two have been done in parallel. Consequently, the knowledge that I gained through site observation studies informed my practice of developing concepts.

Phase 1: creating concepts

Phase 2: site observation

Phase 3: participatory design

Research Through Design

At the beginning of the second academic year in the graduate colloquium, my supervisor tasked us to read two dissertations, one from the department of design and computation art and one from any other field. For my research, he suggested a thesis in which the author had taken the role of the reflective practitioner to learn from four large-scale sustainability design projects. He concluded the research by noting that designers can gain knowledge through practice and through this practical approach, gain insight into how their work can affect others. Having been a novice researcher, reading through completed design projects in art and design helped me comprehend the important issue of research methods. After critically reviewing the methods applied in research projects on subjects like my own, I eventually determined my methods and tried them out in my research-creation project.

Therefore, in the concept development phase, after reviewing the relevant literature, I sought to engage in a research through design (RtD) approach. Accordingly, I studied urban design qualities of interactivity and playfulness and applied them in my practice to design urban installations that improve pedestrians' social interaction. Additionally, in the later stages of the research, the developed concepts are utilized as a tool for further exploration and facilitating

participatory workshops. Subsequently, adequate materials are gathered to continually reflect on the process.

Reflective Practice

Donald Schon's (1984) literature on reflective practice has been extensively applied to the field of design practitioners because of the previously existed gap in recognition of design practices as a convention that can lead to academic knowledge production. Perhaps the strongest constructs that Schon proposed are reflection-in-action and reflection-on-action, which are often used in design to describe reflection during and after the creation of a product, service, building, game, etc. For the creation piece of this research, I investigated the interactive reflection during different project phases through manual and digital documentation.

Discussions in the literature indicate that practical reflection leads to learning through novel perceptions, greater insight and further inner obligation for future action (Dewey, 1910; Fendler, 2003; Zeichner & Tabachnick, 1981). In the theory of practitioner learning, Schon describes 'knowing-in-action' within the rationality of reflection-in-action, as the intuitive, functional knowledge that practitioners make through practice, enlightening most of our spontaneous decision-making. Reflection-in-action establishes means for expanding this knowing-in-action through a process of awareness raising resulting in rebuilding without the necessity of the academic knowledge which he calls "technical rationality". He defined reflection-in-action as:

Reflection-in-action ... is central to the art through which practitioners sometimes cope with the troublesome "divergent" situations of practice. When the phenomenon at hand eludes the original categories of knowledge-in-practice, presenting itself as unique or unstable, the practitioner may surface and criticize his initial understanding of the phenomenon, construct a new description of it, and test the new description by an on-the-spot experiment. (1984, pp. 62-3).

Elsewhere, Schon (1984) describes reflection-in-action as a process, arises from a problem, that can lead to explicit awareness of their knowledge. This endures reshaping as a result, which indicates some sort of critical reflection.

In the field of urban design innovation, Forsyth (2008) discusses the relevance of the role of research, which provides practitioners with requisite knowledge to take a more reflexive and critical approach to design. To inform my practice in the process of developing concepts, while I was seeking to create a balance between design and theories, I studied the literature about design principles of interactivity and ludic sentiments in the context of both urban design and other fields, such as design taxonomies for interactive museum settings. This work will contribute to the arena of ludic cities, both by extracting related design principles and implementing them into concepts, and eventually, investigating and testing them over participatory exercises.

Documentation

The next issue of concern was finding a way to support and encourage the process of reflection. As discussed earlier, Donald Schon (1984) argues that human knowledge abides by their action, which can be either in form of tacit knowledge that is not easy to capture and formulate or in form of embodied knowledge that is easier to communicate and articulate. Given that, Mäkelä & Nimkulrat (2018) pointed out that ‘systematic documentation’ in every research through design practice helps to provoke practitioners’ critical thinking and provides greater prospects to the whole project. Scrivner (2000) also noted that practitioners should take advantage of reflecting on the research objective obtained, the practice in itself, and the reflection-in-action, rather than bounding their reflection to the project in overall and in relation to the explored issues.

Therefore, documentation is necessary in different phases of the creative process of an artefact. From the early stages of ideation and primary sketching to prototyping the final product documentation can facilitate contextualization of the practice, research methods, and interpreting them into a broader field of knowledge by using relevant theories.

In the words of David Davies (2008), “A medium is a set of conventions whereby performing certain manipulations on a kind of physical stuff counts as specifying a certain set of aesthetic properties as a piece.” The main notion of this statement is that it is leveraging certain physical materials such as design sketches and textual annotations, thus, presenting them in different configurations to reveal the practice predicaments. For this purpose, different types of documents are collected, such as text, images, videos, etc., as mediums. Such mediums can often be reorganized in different layouts for various reasons, for example, to verify an ideated concept, to

pitch a new direction in the work process, or to trace back the design rationale behind the development of the creation piece.

In terms of organizing the documents, multiple conventions are adopted due to the variety of documents were needed for aggregating different phases of the practice. Such as mapping, photography, description boxes for the analysis of literature, site observations, early sketches of the ideation phase and brainstorming, and high-fidelity 3D renders of final concepts. A combination of *Design Workbooks*, *Annotated Portfolios*, and *Pictorial Map* were also employed for different purposes. In the following, each of these tools and the places they were used will be described.

Design Workbook

Gaver (2011) describes Design Workbooks as “collections of design proposals and other materials drawn together during projects to investigate options for design”. He noted that everything in a design workbook should be manifested as a proposal and a course of action. The concept of the design proposal is vaguely explained but he defines his own proposals as “rough collages” of possible alternatives. Therefore, every piece of information is documented in a notebook from the beginning of the project to facilitate the accumulation of all in one place and keep track of progress. The notebook includes literature review notetaking, sketches of the ideation techniques, site observation and participatory workshops documents. Design workbooks support immediate comparison of research hypothesis, mixed media documents in the digital version of notebooks, research questions and examination of scientific material, and reflection is what attaches all these items together (Bardzell et al., 2016).

It is important to point out that initially, the collected materials were reflected on by pen and paper. Hence, whatever comes to mind is written or drawn right away, and the experience of manually recording everything was extremely helpful for creative idea generation, particularly in the early stages of the design project where a computer is a distraction, as it allows a tactile experience (Habib & Romli, 2021). In the beginning, because I was not familiar with design workbooks, I used to roughly document the procedurals with the aim of learning from the practice, by actively seeking to find answers to a set of questions to provoke my design thinking skills. Following that, when I comprehended the nuances of the design workbook documentation technique, I attempted to frame the inquiries in form of proposals whenever possible.

Documenting with pen and paper had some limitations as well. For example, digital photos taken during site observations or the images of 3D renders could not be attached to my notebook. Therefore, Office Word Software was used to scan the texts and attach photos where desired.

Annotated Portfolio

Annotated Portfolio is another technique used for documenting, in which the practitioner draws and conveys research findings in the form of annotations and puts them together as a portfolio. Löwgren (2013) states that annotated portfolios are a form of intermediate knowledge that becomes accessible in presenting data when dealing with a level of abstraction between certain design issues and generic theories. Applying this technique is very helpful for a research-creation project, in which presentation goes beyond academic writing styles and makes it possible to communicate simultaneously and reflect on design ideas in the forms of pictorials, associated with the underlying theories and the philosophy behind them. In addition, for site observation, a mapping format is used for conducting site observation documented in the workbook, then the data are scanned and attached to the word file.

Both annotated portfolios and mapping are presented in form of a design workbook to exemplify individual documentation. They support research similar to other techniques, like analyzing and comparing different qualities of a design project or depicting how a design concept has transformed and evolved out of various demonstrations, but the emphasis of these tools is particularly on stimulating reflection and re-examination.

Digital Design Workbooks

In the second year of my master's program, the Covid hit, when I was trying to find an online platform to hold the participatory workshops, I was introduced to Figjam, which is an online whiteboarding platform for teams to explore ideas. I found it so powerful as it leverages all the required properties such as text layout, inserting images, sketching tools,

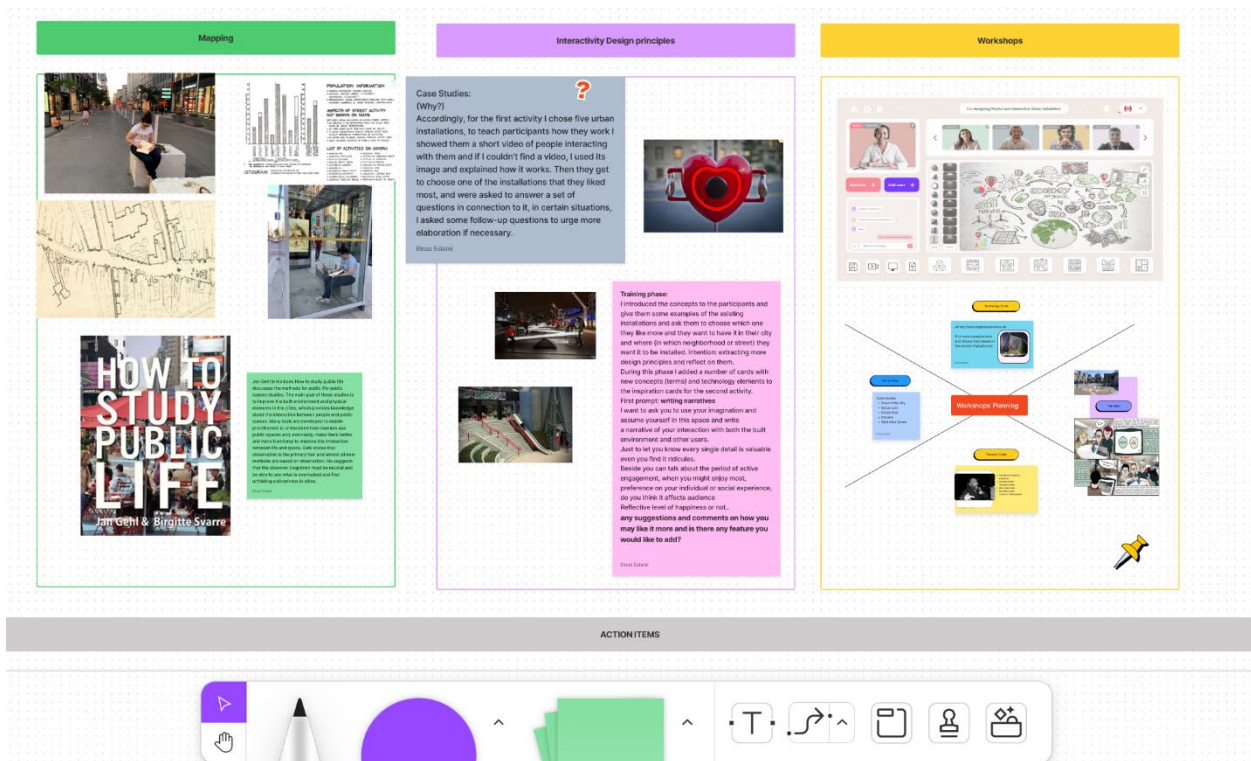


Figure 1: Snapshot of Design Workbook

importing 2D and 3D assets, and plugins (Figure 1); So, I decided to completely switch to Figjam to execute documentation and reflection in it. I consequently built a small repository of the most used assets so I could exert wherever needed throughout both my individual practice and participatory workshops. The entire documentation was spread across around 20 desktop frames organized chronologically with the date of each step to show the progress of the work. The e-workbook includes certain shapes of text boxes used only for reflection, drawing tools for outlining the site observation plan and annotating maps of the urban installation's location, scanned pages of brainstorming sketches and ideation processes, bullet lists for to-dos and prioritizing different stages of the process, and color coding for marking up and organizing.

The final part of the workbook comprises documents related to the workshop plan and designing tailor-made activities. Workshop sessions were conducted by sharing Figjam links with participants, where everyone had simultaneous access to all the tools and materials in a shared workspace. Throughout the workshops, some plugins were also used to benefit from premade resources, such as *Unsplash* which offers free photos and illustrations. The photos are utilized for making the domain cards for the inspiration card activity, creating collages of co-designed concepts, and improving my prototype. Another used plugin is *Google Material* which contains icons for labelling different sections of the pictorial map such as emoticons for demonstrating pedestrian behaviour or their moods in distinct spots. (Figures 9,10,11)

Site Observation

Concurrent to the concept development phase I did site observation to enrich my practice with empirical knowledge. In this connection, Jan Gehl in the book “How to study public life” (2013) discusses the methods for public life-public spaces studies. The main goal of these studies is to improve the built environment and physical elements in the cities, which provides knowledge about the interaction between people and public spaces. Many tools are developed to empower practitioners to study how dwellers use public spaces and, eventually, make them better and more functional to improve the interaction between life and space. Gehl (2013) states that observation is the primary tool and almost all new methods are based on this technique. In this sense, he suggests that the observer (registrar) must be neutral and be able to see what is overlooked to find unfolding ordinariness in cities.

As a result, it is essential to study public life and human behavior to understand where and how each element should be placed to develop the intended qualities. In this project, site observation took place in parallel to the first stage of this project, while I was developing urban concepts. In the site observation section, I describe how observation should be conducted to achieve the proper outcome, the techniques I chose to use, and then the application of the techniques in studying two different city installations in Montreal. Since ‘reflection’ was a continuous event throughout my practice, I reflect on my observation whenever a valuable verdict appeared, in addition, I describe the way that I have interpreted the assimilated insights to my own concepts.

Participatory Design

Participatory design, in its broadest definition, indicates an approach to the benefit of the people who are affected by the results of a design to be involved (Manzini & Rizzo, 2011). Participatory design is an efficient tool for involving potential users and local communities in the process of design and helps designers understand users' needs and be capable of creating more inclusive products. Furthermore, the absence of public involvement in the urban design discourses creates a gap between them and the urban element, and participatory practices exist to fill this division and help push a more democratic approach in the field of urban design (Sanoff, 2011).

As a result, I employed participatory design for the last phase of my creative practice to both provide more material to reflect on and learn from users' inputs and their co-designed concepts. Therefore, during the participatory workshops, participants' engagement with the workshop process was observed to elicit the recurring themes that arose in their interactions, and how the devised activities helped them co-design playful and interactive urban concepts.

In summary, I have used different phases in this research-creation project. Integrating a Research through design approach, I have explored a creative phase where I challenged myself to design 4 different playful concepts while trying to inform my practice with relevant theories and insights from observation studies. Then I used a participatory design method to gather feedback from potential users, including co-design workshops by setting focus groups, narrative writing, and inspiration cards workshop.

Research-Creation

Application of Methods

After having described the context of this research through the literature review, and the introduction of methods, here I describe each section of the research-creation phases. Basically, I am applying the principles of a research through design approach combined with a reflective practice (Schon), observation and a participatory design approach.

Concept development

Description of research-creation phases

Phase 1: Development of Creative Concepts for a playful urban installation

In the following, a summary is provided of the process of concept development and reflections associated with relevant theories. For each concept, some screenshots of the design workbook are attached, including my sketches to illustrate the iterations and process to the creation of the final concept. The descriptions are based on the chronological order that I developed throughout the MDes program.

Description of Concept 1

The Pyramid - A concept focusing on playful exercise and challenges

The most important objective to pursue in the design of this concept, which is referred to as Pyramid, is to engage people in moderate physical activity while rewarding them with social interaction. In the first stage, I looked for different gym equipment that enables stationary activities at different speeds like walking, running, riding, rowing, paddling, etc. These activities do not require special training, and most people have experienced them in the past. Eventually, the stationary bicycle is used in the concept, to provoke a sense of competition among people through designing a game or contest environment.

After reviewing the literature on design interactivity, the design principle of 'immediate feedback' is delivered to individuals' input and the activity of biking is chosen to increase

players' physical activity. Allen (2004) calls this quality immediate apprehendability, which implies that playful installations should be designed such that people interacting with them can quickly figure out their "purpose, scope and properties." Accordingly, I decided to include projecting lights that synced to the bicycle's speed to inform the participants about their performance, which means in what rhythm and speed they are cycling. Put differently, I attempted to design a platform where people could see the result of their actions, here biking, through audio-visual feedback displayed on a surface. After a few iterations, I decided to replace the clueless combination of colours and moving lights with expressive images. The images are being broken into pieces of puzzle shapes which can also be altered according to different occasions like Canada Day, Christmas, etc. Additionally, it has been proven that involvement of body movement has a significant positive impact on engagement; thus, a sense of empathy and relatedness can be fostered through designing responsive installations which provide instant feedback coupled with people's actions. Tilde Bekker et al. (2008) studied the impacts of the theory of self-efficacy in physical play and described that people's behavior is impacted by their beliefs about being able to fulfill certain activities and achieve their expected outcomes. Hence, the design strategy is to motivate people to get on the bikes which can generate and project sections of an image on a display in front of them. (Figure 2)

This configuration is designed to facilitate a teamwork activity wherein people should be collaborating in groups, riding their bikes to complete the image. When an individual starts biking, some parts of the image ahead of them appear. Each person is responsible for one section, and they need to adjust their movement to a particular speed and rhythm signaled by the responsive image, and maintain it until their front sections are fully projected. The bicycles are placed on the sides of a rectangle. For displaying the image in the center, initially, a cube-shaped structure was designed with vertical sections, in which each person was in control of one line. The problem with the cube was due to the fact that people are comfortable viewing things at eye level when they are biking (Spinney, 2006), and the height of the cube made it difficult to perceive the whole section in the front. Such as the parts of the image that are higher or lower than normal visual sight, considering that people are concentrating on the main task of riding the bike. Besides, the erected cube obstructs people's view and disconnects them from seeing and interacting with the rest of the participants on the other side. However, reducing the height of the cube wasn't the solution, since it wasn't visually pleasing, plus it couldn't provide enough space

for displaying a decent section of the whole image. Consequently, the participants wouldn't feel satisfied with the result because it is not reflecting the amount of energy they are devoting. In addition, vertical-based and ground-based displays possess different physical affordances, which urges different social affordances for both people who are actively engaged in the game and other passers-by who are watching them and interacting with the installation from outside of this space. Sian Lindley et al. (2004) discuss that grounded-based displays, and in general, the constituents that hold some horizontal elements, are easier to perceive and interact with. In a collaborative setting, this quality allows participants to explore more ideas and closely monitor others' performance, which in the case of Pyramid would be watching and comparing how much other players have completed their part. In addition, with this configuration displaying the image on the ground was not a good idea because of the front part of the bikes, which contains handles and projectors, it would be impossible for players to see and follow the image traces. As a result, a pyramid shape is designed in the center for displaying the image. Using the shape of the Pyramid was a proper alternative since its format made it possible to display a sufficient section of the image for each participant. Moreover, instead of dividing each section into parallel lines, the image could be broken into scattered triangles, and can easily be viewed by players, while they are not disconnected from the rest of the players on the other side. Besides, the shape of pyramid is not frequently used in urban design, and this would make the installation appear like a visual landmark through the use of light and the overall setting.

Another issue that was mentioned while presenting the concept in crit sessions was concerning people with disabilities, who were completely excluded in this design. In order to address this important issue, the stationary bicycles were replaced with treadmills, pedestrians can run on them and people who are physically challenged can put their wheelchairs. The required speed by the stations should also be adjusted according to the player's physical condition, which can be determined through the speed they choose to move; ranging from a professional athlete who might run at a faster pace, or a child who moves slower but is still able to participate and accomplish their part. For instance, one section of the image is set to the average pace of a participant with 8mph, so at higher and lower speeds it gets blurry, while, in a situation where the runner gets tired, the system senses it and set a lower minimum as the default pace. Additionally, in order to make the concept always work, including not busy hours, even when

only one participant wants to play, the whole image is designated to their station. As new people get into the game, the image gets divided into the number of players engaged (Figure 2).

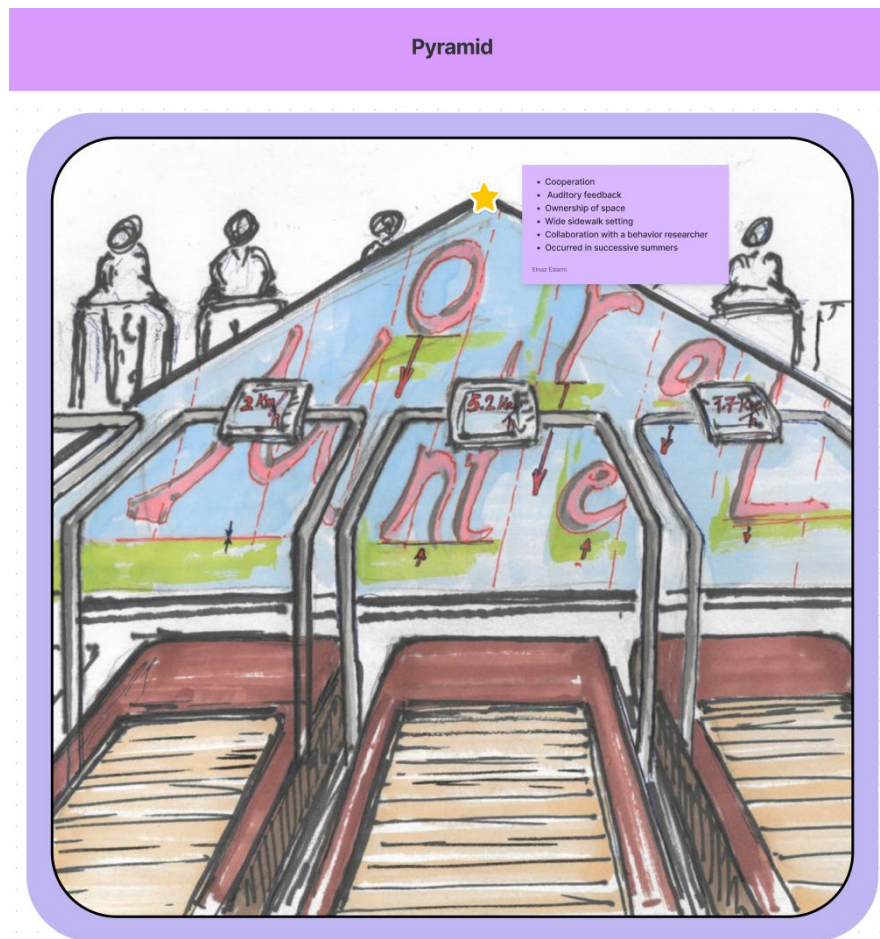


Figure 2: Snapshot of design workbook, sketches of the concept of Pyramid

In terms of enhancing players' engagement level, other practitioners have echoed the concept of immediate feedback by calling for more naturalistic, apprehendable modes of interaction, such as Kinect-based embodied interaction in art museums (Long et al., 2019). In this regard, further design consideration for enhancing citizens' engagement is providing more interaction possibilities and creating multi-sensory experiences. In several current urban installations, designers have implemented auditory influence through feedback, such as in the Piano Staircase (The Fun Theory, 2009) and Balançoires (Daily Tousles Jours, 2014). Since enriching the feedback by adding more modalities like diverse colors of light, vibration, or tactile, would increase the number of interaction states which results in higher engagement for a longer period

of time (Donoff & Bridgman, 2017). This idea is reinforced by incorporating the music feature, in which the sound beat is also conformed to participants' actions and includes traces of correct rhythm, to guide them to reach the full image. Another engaging envisioned element provided by this installation is that it empowers users to activate a digital media with their body movement, as it builds a direct relationship with the technology interface and the human body (Dixon, 2015).

Description of Concept 2

The Carousel – bringing users together

The early idea of designing this concept, named Carousel, struck when I was watching a video on Pinterest of an urban installation, which consists of a long bench that bends in the middle when two people sit on, and they slide to the center and fall on each other, so a very intimate interaction takes place among those who sit on it. When I was watching this video, the issue that crossed my mind was, would I use it if I were aware of its function? And to what extent would people be comfortable trying it? It was evident in the video that several people felt clumsy in the beginning when they fell on a stranger. However, I liked the idea of including a moving element in the installation as it could be frolicsome, while I wanted to reduce the intensity of the interaction level that can be delivered through it.

So, I incorporate the idea of getting people closer to one another in the physical space in a motion setting. Initially, a playful intervention in which a number of individual chairs were moving on a semi-spiral railing path embedded in a sidewalk was designed (Figure 3). The amusing feature of this concept was for the simple reason that people sitting on the chairs are not able to move their seats as they are controlled by propelling machines from outside this setting, and another person is able to spin the propel and move the seats. However, neither sitting nor swirling people are aware of the connections between each propel and a seat. As a result, in a situation when some people are sitting on the chairs, and your friend asks you to move his/her seat, you probably can't move your friend's seat on the first try, therefore some other people might have their seats moved before you find the connection.



Figure 3: Snapshot of the design workbook, initial sketches of the concept of Carousel

In this way, a number of human interactions occur, first between the person who is testing different propels to find a specific seat and the people who are being moved unintentionally; second, the interaction among those seated individuals who pass each other on the railing path while they are shuttling back and forth.

Afterwards, considering the extent of the required space for such configuration and the complexity of the technological system which needs to update the connection between seats and propel handles from time to time, in order to not get hacked by users, a more unified structure was designed. I designed an installation consisting of three moving large-scale circles with three rounded modular benches and two lighting poles on each of them. Therefore, when someone holds and pushes the poles, circles spin; so, people's positions change in relation to the adjacent plates and people who are sitting on them (Figure 4).

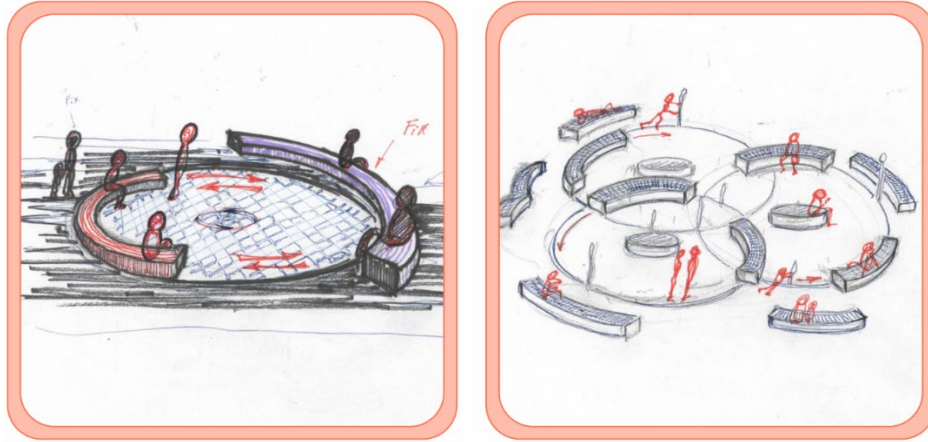


Figure 4: Snapshot of design workbook, sketches of the concept of Carousel

In this connection, several urban designers, like Raum (2010), have designed a sidewalk intervention to challenge the concept of the urban environment being always rigid and angular by softening the pavement using water-balloon texture and turning it into an adults playground; similarly, in Orbit an installation by Tomas Saraceno (2013), in which he added up transparent cloud-like forms 20 meters above a plaza, so visitors can walk into them in weightless modes which look like they are swimming in the sky. Analogous to the concept of Carousel, the motivation type in such installations is that they put people in **control** of the **outcome**, so they can **transform** it as they want. Additionally, this setting addresses the design typology of providing opportunities for observers to collaborate and interact with people inside the marked space noted by Dondoff (2017), since the act of pushing the pole to maneuver the benches and rotate on the platform is also possible by someone who is standing next to it, which changes the seated people view and positions.

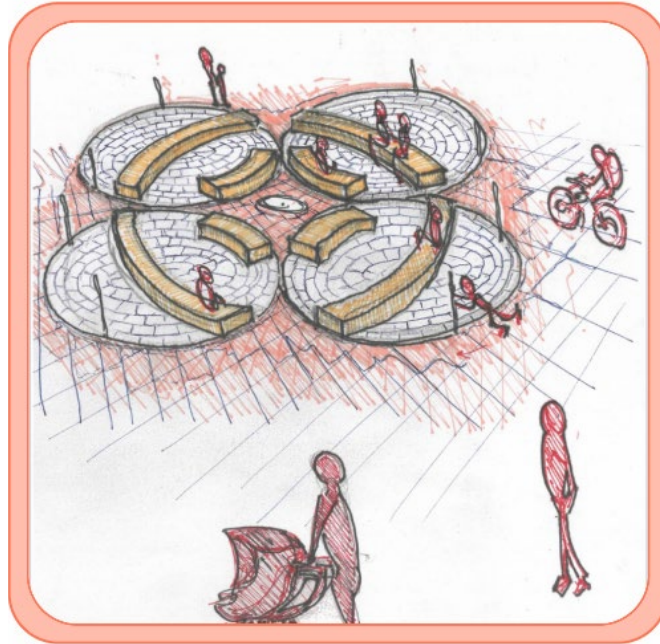


Figure 5: Snapshot of design workbook, the final sketch of the concept of Carousel

Once again, two types of interaction might happen, first, between the person who is standing outside the circles and tends to spin the plates and people who are sitting on them, and second is the interaction among seated people, whose position is changing and getting closer or farther from one another. In addition, originally, this formation was designed with three circle plates, but I added the fourth circle to make more space in the center to use it for embedding a water fountain, which also enhances the imageability of the installation and improves the tactile experience for people using it (Figure 5).

It is noteworthy that the idea of familiar playful interaction, presented by Dandoff (2017) through analyzing 27 playful urban installations, shows that using familiar artefacts like swings in 21 balconaire improves intuitive interactions, which is supposed to attract a wide range of users. In addition, the concept of aesthetic interaction has been introduced in the context of urban design to highlight the forms of expressions which carries emotional values, like a sense of excitement and nostalgia. The structure of the Carousel reproduces the image of a playground merry go round from people's childhood, so passers-by can experience a familiar concept in a different setting.

Description of Concept 3

Post-Covid – the intimate conversation bubble

The idea first emerged during the first semester of the Master of Design program, when I was doing research on improving urban design strategies and forms to improve active modes of transportation, in particular walkability. Consequently, I learned about a framework proposed by Ewing and Clemente (2006) for evaluating the walkability score of each street or neighborhood by calculating a number of urban qualities. Each of these items had a specific assigned multiplier, demonstrating their significance in constructing a walkable district. One of the most important elements in this framework is Imageability proposed by Lynch (1964), which allows a pleasant atmosphere for pedestrians and encourages them to spend more time in urban spaces; Imageability refers to the quality of a place that makes it recognizable and memorable. Therefore, I began to develop a visual landmark to increase the imageability of a neighborhood. The concept is inspired by the form of the igloo, in which the dome shape provides room for more design innovation and experimentation with different ideas. First, the roofing of several layers is developed on top of each other to make space for growing vegetation during summer, which can also be covered by snow during winter times. Further, using the shape of the igloo is assumed to line up with the geographical and historical attributes of Montreal, so it might provide a familiar connection and adds to the character of the city (Figure 6).

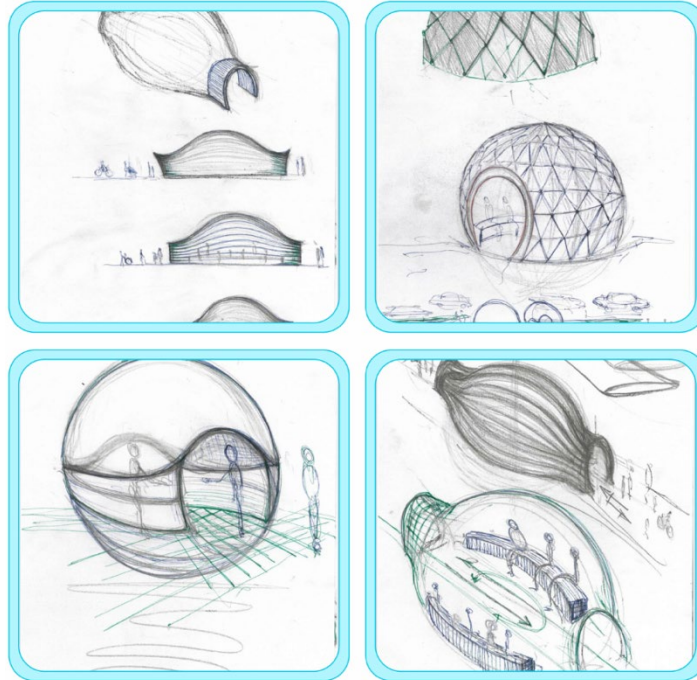


Figure 6: Snapshot of design workbook, initial sketches of the concept of Post-Covid

Later, in March 2020, when Covid hit, a huge transformation appeared in dwellers' interactions in urban spaces due to social distancing rules. In the beginning, most of the days, the public spaces were vacant of pedestrians; later, even when the number of cases was slightly decreased, people still minded the social distancing, and they were quite cautious about their social interaction. The issue is focused by modifying the shape of the installation in a way that invites people to come together and be more mindful of their need for "contact" and social interaction, which was left unnoticed because of the Covid. So, the shape of the big igloo is changed and transformed into a small igloo room, and it became similar to a small chamber. The metal layers of the dome are replaced with a solid concrete ceiling, and to enhance its inviting quality, the edges of the igloo shifted higher to make the entrance more visible, which resulted in a shape like an umbrella. The edges are also trimmed with a red lighting stripe to capture passers-by attention and motivate them to approach it and bend over to check underneath the umbrella. Besides, a human height counter is placed inside the chambers to provide a space for people to lean on it and rest when they are inside the chamber; moreover, the counter creates a little distance between two people and helps them to feel more comfortable and safer to interact with

total strangers in a small space. Accordingly, I named it post-Covid, which refers to the public after Covid.

A variety of existing interactive installations are inspired by the theories concerning situated action (Hornecker & Buur, 2006) and the arising behavior followed by open-ended systems. Theories about situated action rely on users' ability to improvise new activities and interactions in the absence of concrete goals, which can be impelled by the installation setup. This design strategy can be used to stimulate people's creativity by designing playful concepts without predefined and explicit objectives. It is also expected that by following this model, designers can improve social interaction since participants will need to discuss and negotiate their ideas about interaction possibilities.

The idea is exerted in designing the post-Covid concept, which encourages users' sense of exploration by not showing the other side of the wall, so participants are asked to walk under the umbrella shape, and then they can decide what to do when they meet each other. In this setting, the installation provides a space for two people to meet and talk but leaves the rest to their creativity. They can just talk, or play a game, take photos, exchange numbers, make friends and so on.

When the overall structure of the installation was completed and the potential to improve social contact was achieved, a modular form is envisioned. Therefore, several igloo chambers are placed next to each other at different intervals and can be physically customized according to the location availability, which determines how many and in what arrangements they can be installed. Another issue that might occur during not busy hours is when a person chooses an igloo room, and no one is there waiting for them to communicate, especially when there are several unoccupied chambers. In order to notify other people that someone is waiting inside the chamber, a sensor turns on the striped light when someone enters the room, so others will know that a person is there, and at the same time, it invites people to engage in an interaction in an artful way (Figure 7).

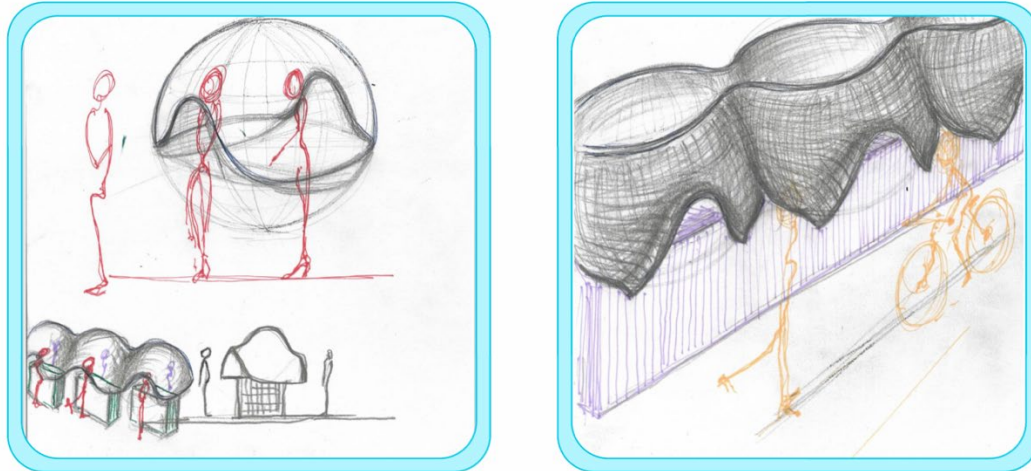


Figure 7: Snapshot of design workbook, final sketches of the concept of Post-Covid

There are many design recommendations regarding improving social interactions, which is the main objective of this concept, through utilizing game elements, which are also applicable to interactive installations. In this connection, Bekker and Jansen (2008) studied the influence of using shared elements in a game called Swinxabee, in a collaborative setting which proved to stimulate forms of social interaction. Tetteroo et al (2012) analyzed traditional playground installations and stated that shared space can change the play quality and trigger social interactions. The idea is translated into this concept, wherein individuals are invited to choose and walk into a shared umbrella and start a conversation in a semi-private environment with a random match. As a result, the shared nature of each room helps people to feel less awkward about talking to total strangers by putting them in a situation that can be deemed people who are standing in the same space are meant to communicate with each other. The other theory underpinning this idea is that layout characteristics, such as shape and colour, influence its affordances, thus, the arising interaction patterns. Another inspiration source for employing a shared space quality was the ChatterBox installation in Los Angeles (*The Awesome Foundation*, 2014), which is devised to encourage citizens to make new friends by sitting inside a shared box filled with balls, with a sign that says: "take a seat, make a friend," this installation went viral and it was observed that many passers-by liked to try.

Description of Concept 4

The Magic Mirror – fun incidental fusion

The journey of designing the last concept, Magic Mirror, started around the idea of creating an installation through which people wind up interacting with each other with minimum effort, therefore, the target audiences are people who feel uncomfortable in social situations.

Consequently, I looked for interesting elements to attract passers-by attention right away, besides using a mysterious shape to arouse their curiosity. One of the alternatives was using mirror, which is very likely to engage people's attention because of its reflective quality. Initially, the angled pieces of mirrors were placed next to each other and made a bigger segment, so people were able to see a composition of reflected things in the mirrors and spots out of their normal vision. The aggregated form of mirrors was minimal similar to *Monolith (2020)*, the most controversial installation of that time (figure 2). The shape of the concept was quite intriguing, and it resembled the geometric motifs of interior mirrorwork architecture in Iranian historical palaces and mosques, which are certainly proved to be aesthetically beautiful and successful in engaging visitors.

At this stage, I sought to facilitate people's interaction in a stronger way. Moreover, to empathize with potential users of this installation, a persona was created pursuant to one of my friends who often feel awkward socializing in public spaces, so I constantly asked myself if this installation facilitate his interaction with other people or not. And tried to ensure that his concerns are considered.

The idea I had in mind previously was to induce an incident interaction, resembling what usually happens when people are wandering on social media and virtually bump into other users whom they might know or not, which is the work of recommendation engines, for instance. In this case, none of the users are making any extra effort to meet or interact with others, but they are simply using a single platform at the same time. I began to combine the idea of using mirrors and incidental encounters to make an interactive installation that brings people's awareness about each other's presence. So, I pursued the idea of using two mirrors and placing them in a way to seem like a unified shape that would reflect full-length images, while each mirror reflects different directions. Hence, when someone stands in front of it, they can only see their head, as the bottom mirror is positioned to show the spot next to them. In case when another person is around, the first person sees that person's body on their own head. For the same reason, the

second person sees their head with the first person's body. Through this configuration, people are not able to see the face of the person, to whom they are interacting, and they can only see their body (Figure 8). I anticipate that the absence of eye contact at the beginning of the interaction would alleviate further communication for those who feel embarrassed in interacting with strangers.

In an imaginary scenario, a passer-by notices something like a mirror, gets curious, approaches it, skims it and sees their face; suddenly, they find themselves in an incidental, unplanned interaction with another individual passing close by. When I was convinced that the concept is practically feasible, and works fine in terms of enhancing people's interactions, I tried to improve its visual aesthetics.

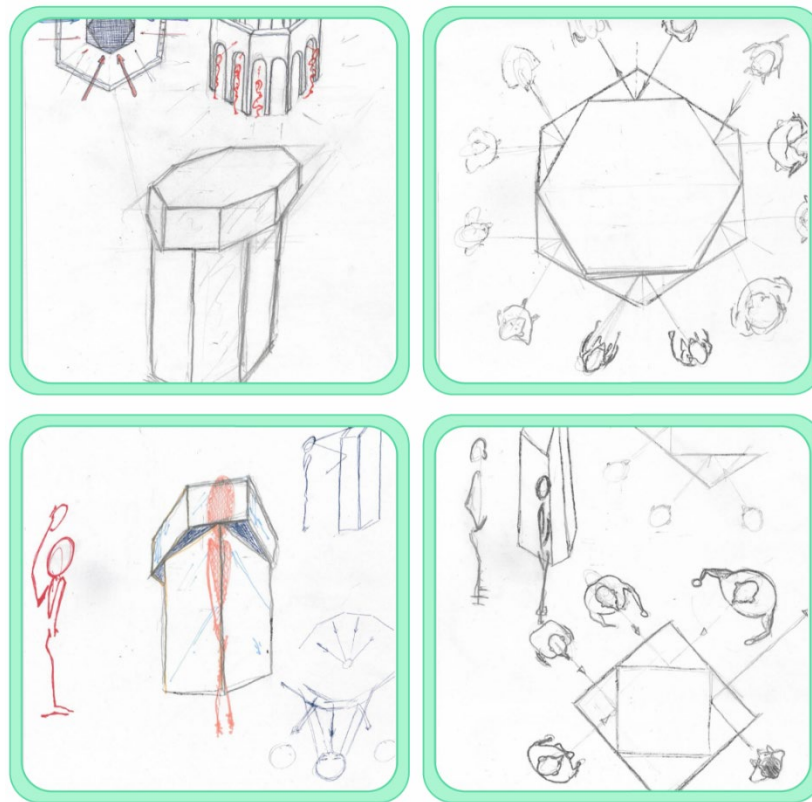


Figure 8: Snapshot of design workbook, sketches of the concept of Post-Covid

After a couple of etudes, I decided to install the mirrors in the center of a concrete pavilion with several entrances to encourage visitors' collective gestures. Overall, the main objective of this practice was to design a more inclusive concept to increase a type of interaction that is hardly

addressed by other existing urban installations. There are always a group of people who needs additional impetus to initiate an interaction.

The physical affordances of an installation, such as its shape, material, interaction opportunity, visual associations, etc. motivate a particular interaction pattern (Marcus et al., 2016). In this case, I used the spatial characteristics of the pavilion alongside the mirror's reflective quality in favor of improving social interactions, which is explicitly supportive of incidental interactions. In this concept, each participant needs to collaborate with another person to make a merged human figure in the mirror. Accordingly, the concept is called Magic Mirror since the mirrors are serving a lot more than they usually do.

Application of Site observation

In parallel with the development of concepts, it became evident that I, as a designer, could gain a lot in taking more time to do site observations in order to better understand how the pedestrians and the general public interact in the city landscape. In order to do this, I took on a number of different observation methods to study human behaviour interacting with two urban installations in Montreal.

How many? Who? Where? What? How long?

As proposed by Jan Gehl, observers ought to constantly respond to a set of questions in their minds to get specific and valuable knowledge about people's interactions in public spaces. For instance, in stationary activities, such as playing with an urban installation, the question of *How many* people are playing with the installation is relevant, as it is essential to learn about the number of people who are directly engaged with the installation, compared to the number of people who are observing others from outside this circle. The question of *How many* and *How few* can be used to make a comparison, in similar weather conditions, between different installations and evaluate their strength and shortcomings. The second question is *Who?* Which allows evaluation of people's age and gender. Approximately knowing who the potential users of certain installations are, helps to empathize and attempt to consider them in the process of design. The third question is *Where?* In studying public installations and urban furniture, this question needs to be answered either in a zoom level inside the installation terrain or at a very far

distance, like an aerial image. The question of where gives information about the spots where people are gathered or dispersed, thus, figuring out where the main interactions are occurring. The fourth question is *What?* Which refers to the type of activity that is taking place. In the context of my research, it helped to recognize patterns in users' behaviour and interaction. The last question is, *How long?* Which provided the approximate time of people's active engagement with the installation and the time that someone stands around and watches.

I employed an observation approach inspired by Gehl's approach (2013) described in the methodology chapter, and used the following tools:

Counting, Mapping, Photography

In addition to actively observing by asking these questions, I also utilized multiple tools and methods for my observation which proved to be suitable for stationary activities, like mapping, counting, and photographing for studying people's interaction with each other and the built environment around urban installations, I should note that I do not intend to publish any of these photos and the photos are taken at a distance that people's faces cannot be recognized.

Counting: it is a fundamental approach to studying public life. Conducting headcounts determines the extent of pedestrian flow and stationary activities at a sampled location over the course of the day. In essence, everything can be counted, which provides numbers for performing a comparative analysis, in this research between the two interactive installations that were chosen for observation studies. For this purpose, I stood in a specific spot where I could oversee and count the number of people who were actively playing with the installations; my location is marked with a picture of me on both maps. In addition, the crowd circulation and their density in different spots are illustrated in the maps, which allowed me to study the recurring patterns and apply them to my own concepts.

Mapping: it allows the researcher to plot people, actions, spots, situations, etc., on a plan of the study location. Drawing symbols and annotating with texts on the installation's plan and noting the number of people who are undertaking certain activities in a particular location makes a

behavioural map, which helps to get insights about different types and levels of human-human and human-installation interactions.

Photography: it is a primary tool for studying public life to document situations and citizens' interactions. Accordingly, I walked around the installation for about ten minutes (a short period of time when none of the significant factors on users' interaction haven't undergone a big change, like weather temperature, etc.) and took snapshots of people interacting with the installation. These images are woven into a map in my design workbook for studying and writing reflection.

Observation locations:

I did observation studies in two sites, and what I have learned was used to deepen my reflection of the concepts developed in Phase 1 (Pyramid, Carousel, Post-Covid, Magic Mirror)

- Loop, designed by Olivier Girouard and Jonathan Villeneuve, Place des Festivals, Quartier des Spectacles, Montréal, Canada
Observation time: December 2020, 5pm – 10pm
- 21 Balançoires (21 Swings), designed by Daily tous le Jours, Quartier des Spectacles, Montréal, Canada
Observation time: July 2020, 10am – 5pm

Observation of site 1

The Loop

Loop is an interactive audio-visual installation, and it is inspired by an optical toy, called zoetrope. Its structure is a combination of a zoetrope, a music box, and a railway handcar. It is more than two meters in diameter, and when participants get on it and work out the hand lever, the cylinder strip lights up and creates the illusion of moving images. The images are black and white and are made through strobe effect, so they are visible from different distances. The participants' speed determines the frequency of the images, and their composition with lighting change subsequently. Loop was installed a few times in Quartier des Spectacle since 2018. 'LUMINOTHERAPIE is Quebec's largest competition for temporary public art installations and LOOP was presented in 2016 for its 11th edition.'

The observation of Loop was conducted when the weather was around minus one and slightly snowy. The place was full of people throughout the course of the study.

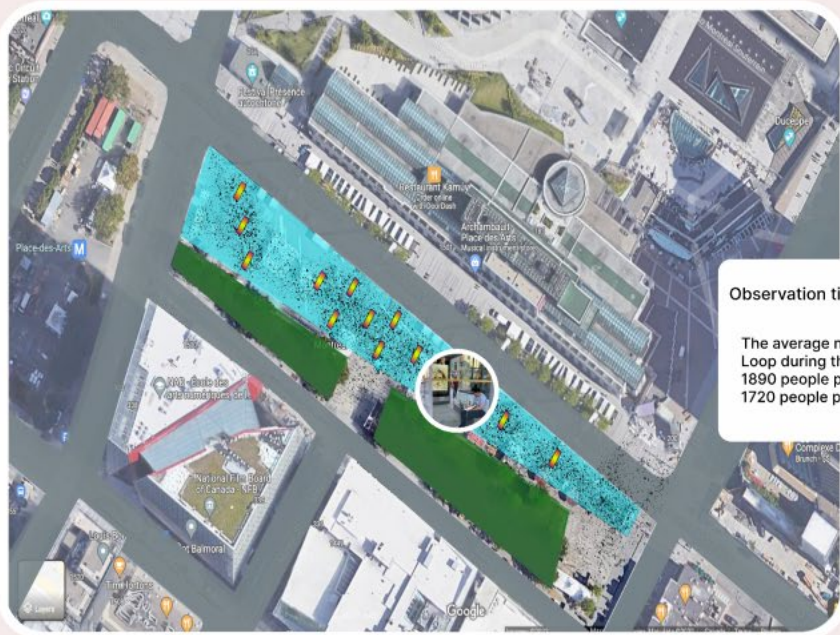
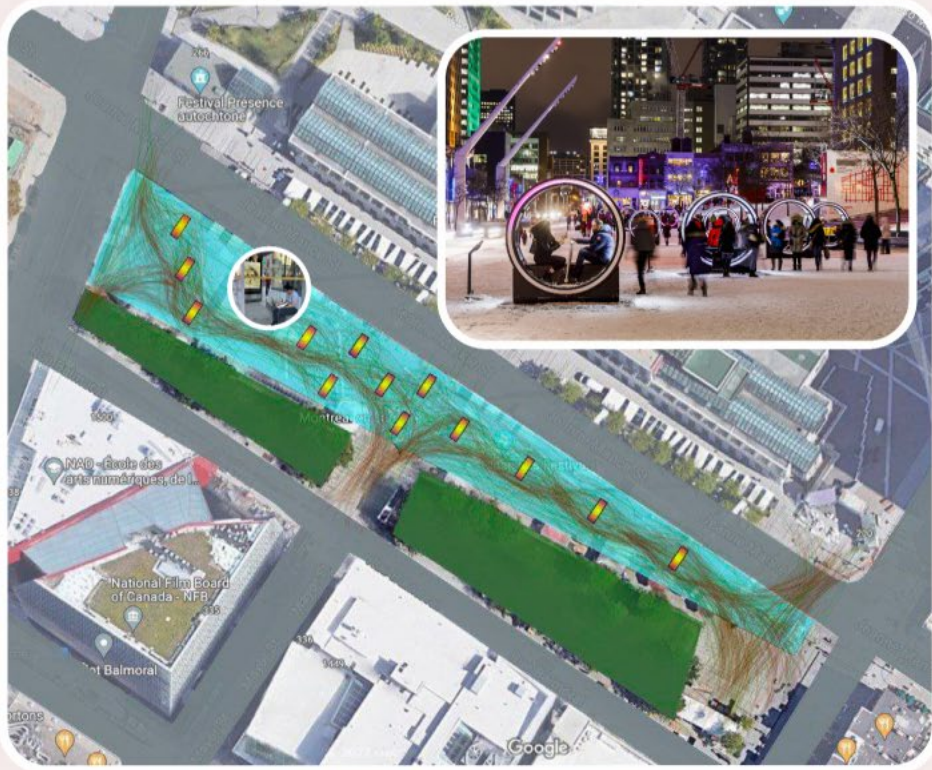
The average number of people moving around the Loops during this time is: (Figure 9)

1890 people per hour during the late afternoon,

1720 people per hour during nighttime

Observation - Loop

Crowd Circulation



Crowd Density

Observation time: December 2020, 5pm - 10pm
The average number of people moving around Loop during this time is:
1890 people per hour during the late afternoon,
1720 people per hour during nighttime

Figure 9: Loop observation map, Crowd circulation and crowd density

Observation of site 2

The Musical Swings

Also known as 21 Balconaire, designed by Daily touslesjours is an interactive urban installation that is exhibited in the Place des Arts neighbourhood in Montreal from time to time. The installation consists of 21 swings, placed in groups of three spread out over seven swing stands. According to their website, each swing generates notes from a musical instrument like a piano, guitar, harp and vibraphone (*Musical Swings | Daily Tous Les Jours*). A colour code is designed to depict the group of notes that are replicated from each instrument to invite the public to try them. The sound pitch is inspired by the pendulum, so the higher the swing goes, the higher notes it plays. Designers of 21 Swings stated that if certain groups of swings move together, this might result in musical compositions and produce unique melodies if people collaborate.

In the case of the swings, the weather was warm and sunny. There were fewer people in the morning, but a crowd of people appeared as it got closer to the afternoon time.

The average number of people moving around 21 Swings during this time is: (Figure 10)

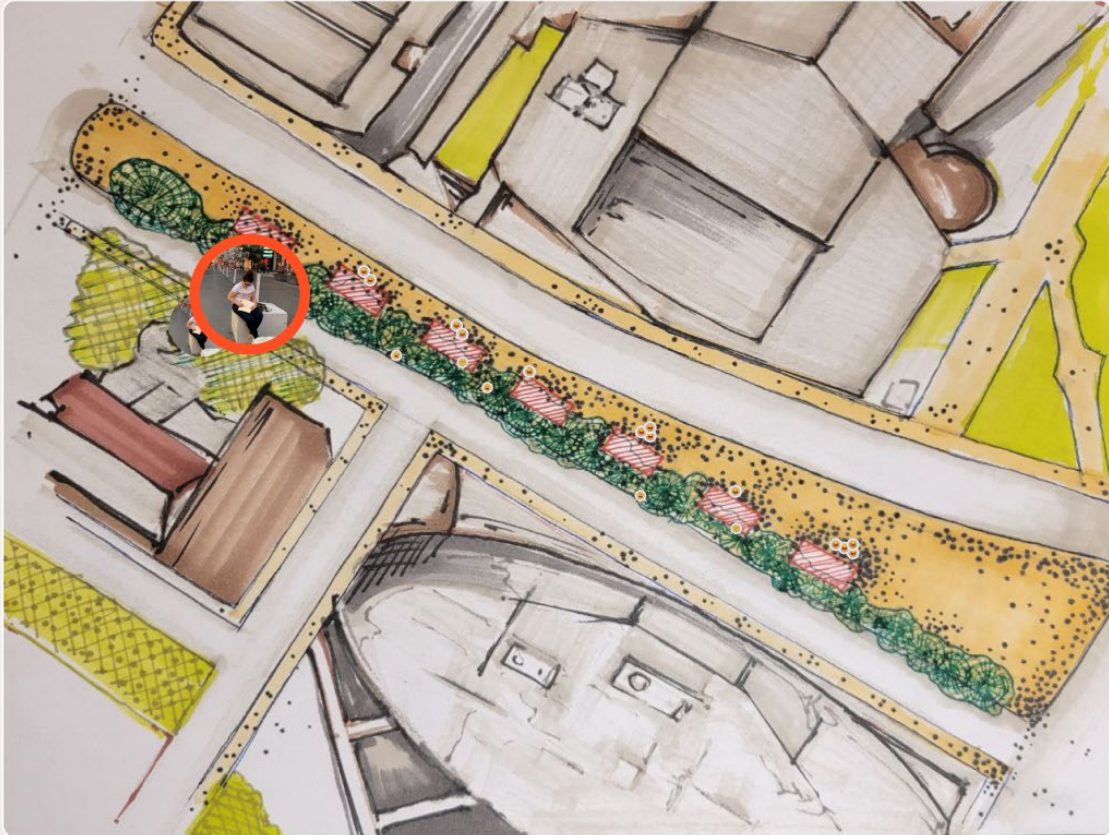
151 people per hour during lunchtime;

221 people per hour after lunchtime;

127 people per hour during the late afternoon.

Observation - 21 Swings

Crowd Density



Observation time: December 2020, 5pm – 10pm

151 people per hour during lunchtime,

221 people per hour after lunchtime,

127 people per hour during the late afternoon



Figure 10: 21 Swing observation map, crowd density

Both of these installations were temporarily located in the Place des Arts neighbourhood, which is a commercial and pedestrian area; thus, throughout the year, several permanent and temporary installations designed by different artists and design companies are being exhibited in this place. Most of the time, it is super crowded, and people tend to spend their free time there, as it is surrounded by malls and restaurants. Other physical and architectural characteristics of this area

have made it a spontaneous meeting spot, where people gather in groups and do different recreational activities like dancing and playing games.

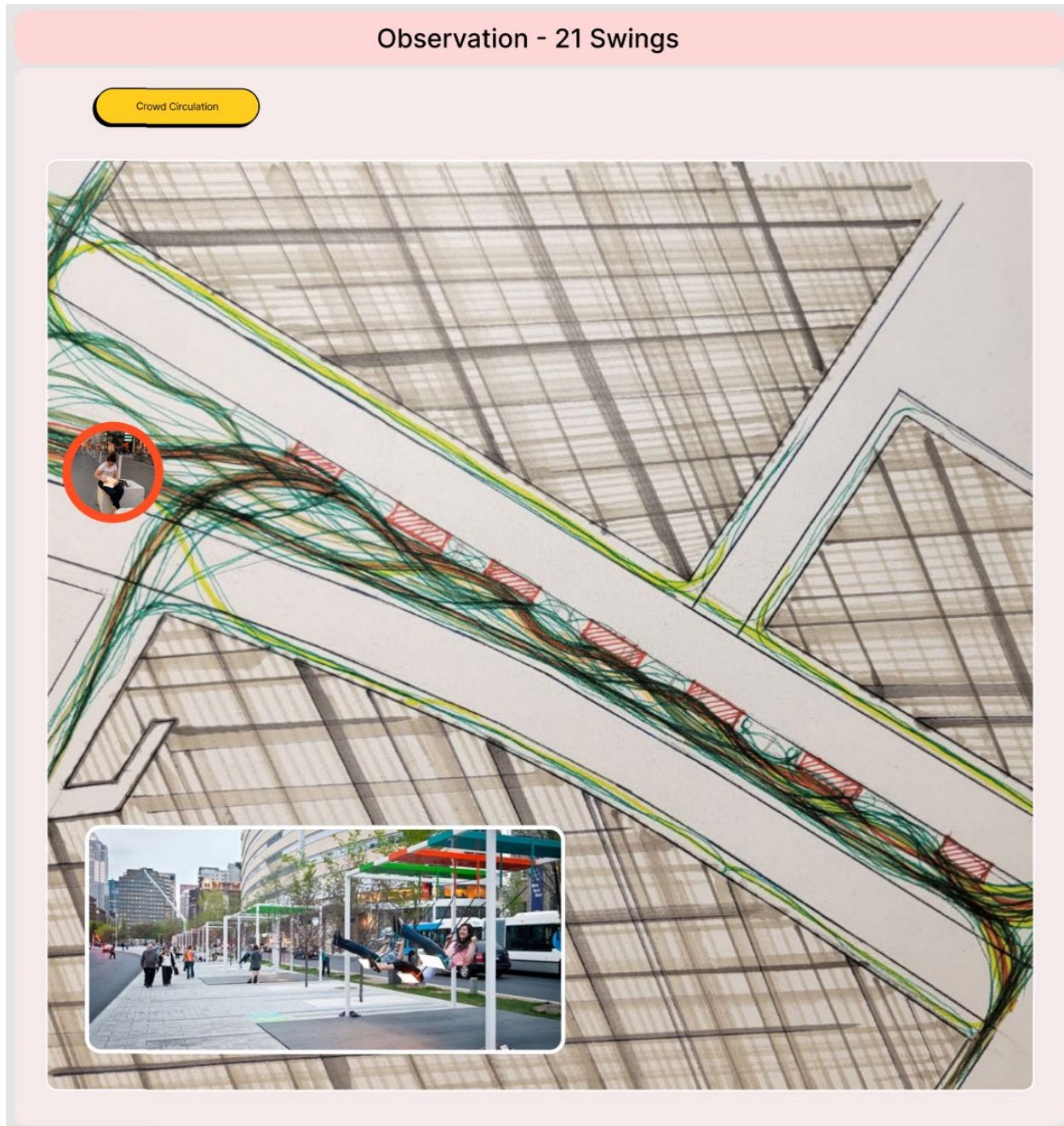


Figure 11: 21 Swings observation map, crowd circulation

A detailed description of the observation is documented in my workbook. The following are the important turns of events in the course of observations, including the application of the methods,

emergent patterns, my reflections, the insights I gained, and how I translated them into developing four playful and interactive urban installation concepts.

The main questions I was trying to find answers to during site observations were:

Why and how are people interacting with the installation?

What is the main motivation for playing with it?

How is the installation improving social interaction in the area?

What elements in the installation are making it playful?

What is the engagement rate?

Where the main interactions are taking place?

And how is their experience?

Observation Findings and Reflections

During the morning time, those who were interacting with the installation spent more time sitting and playing with the Swing, since there were lots of empty seats, so people don't feel the pressure that they have to give their seats to others and wait for their turn. This is while, in the afternoon all the seats were occupied, and people could play for a shorter time. However, children were exempted from this pattern, and no difference was evident in their playing duration; I assume that people find children more entitled to use the swings, compared to other adults (Figure 11).

Main Interaction Scenes

In Swing two main interaction spots were observed, the physical space within the swing frames and the area outside this setting. (a) People who were not sitting on the swings, neither pushing another seated individual, nor waiting for their turn in a line, but they were inside the installation space close enough to see and hear other people playing. They were typically not directly interacting with the system and mostly engaged with unrelated activities. (b) People inside the swings' frame were engaged with the installation, and their interaction included both physical movement on the swings' seats and potentially collaborating with others to make a melody.

In case of the Loop, similar to 21 Swings, two main interaction spots were recognized, inside each Loop and the area in-between the loops. People at the intervals of the loops were usually waiting for their turn, while interacting with their friends and with people who were inside the Loops playing with a companion.

Interaction Transitions

The blocks of the swings are positioned in a linear path parallel to the adjacent sidewalk. This formation typically leads to eye contact between passers-by and people sitting inside the system who are actively engaged with the installation. Based on the headcounts, in most cases, this phenomenon encouraged passers-by to join and play with them. In other words, as stated by Peltonen et al. (2008), this type of transition from a non-verbal social activity to a collective action involves a clear behavioural marker, in this case, eye contact or a smile followed by hearing the generated music (non-verbal), to playing together and sync the movements to create a melody (collective action). Collective action is the most engaging mode of interaction achieved successfully in 21 Swing.

In this regard, Buxton (2009) declared that individuals hold "spatial literacy", so they are able to figure out how spatial relationships affect their social situations and interactions. Accordingly, various spatial restrictions cause certain interactions. In 21 swings, the physical frames between every three swings, which make seven distinct spaces, allow individuals to fit in a cluster of people within each frame. The boundaries urged by frames could facilitate social interaction, as people feel the belongingness to a group. Whereas the physical affordances of this layout retreat

some others from participation because of social embarrassment as they might feel less comfortable (Taylor et al., 2009).

Reflection

Looking back to concepts developed in phase one, of course, it would have been ideal to work with full-scale prototypes but what I learned in the observation is that I can interpret the potential of interactions of the different concepts that I developed. For example, in the concept of the Pyramid, a variety of interaction levels are expected to happen due to the deployed physical and visual characteristics, first, participants hold shared focus when they step on a station and start to move until they roughly find their assigned section that they are responsible to build. Next, a dialogue might take place among players when they are collaborating and communicating with each other to complete the image on the pyramid façade; in this interaction state, they might engage in a conversation to help each other to find the required rhythm hinted by the system. Simultaneously, a collective action is happening as a group of participants are working together to accomplish a mutual goal, which is completing the full image.

Interaction Conflicts

In Swings, towards the end of the day, almost all the seats were occupied, and most of the time there were some people waiting in the lines for their turn, it was observed that conflicts arose in digital space; thus, no longer the music notes were recognizable and pleasing to the ears. Another issue associated with the digital space was the constant untuned sound generated from the swings in that area. Such noise pollution was not pleasant for someone like me who had been sitting close to the swings quite for some time. Therefore, other stationary activities were almost impossible in the noisy vicinity of this installation.

Control, Collaboration

In terms of the quality of the control, when passers-by see the installation from a distance, a swirling strip of light catches their attention (Shared Focus) (Ludvigsen, 2005) . But once they got closer to the system and examined it more carefully, they understood that the only movable

part which drives the rotation is the handlebars in the center of the Loop (Dialogue) (Long et al., 2017). It was observed that in most cases, first people tend to test the installation when they are standing next to it, by pushing and pulling the handlebars forward and backward a few times to make sense of its functionality. In this stage, the player makes a mental model of how the installation works. They normally figure out the whole system once the images on the inner edge of the Loop move and spread lights, so they can start collaborating creatively. Consequently, they get on the Loop with another person to move the handle together and get the images spinning at their desired pace. At this stage, the player usually finds themselves collaborating with the machine and tries to increase the speed of the images as fast as they can. In cognitive science literature, this process of exploratory action and co-creating interaction by user is referred to as the participatory sense-making (De Jaegher & Di Paolo, 2007).

Reflection

I speculate the same types of interaction would occur around the 'Pyramid' due to its similar nature. Therefore, once people step on a station, the social aspects of the installation, which allow using it with different physical abilities since it syncs the station's pace to the player's movement speed, and motivates interaction to transit from shared focus to dialogue (Ludvigsen, 2005) since players can talk to others next to them and discuss what is being emerged on the pyramid. It is also likely that it won't cause social embarrassment since players are running with people with diverse physical capacities, not professional athletes.

Awareness

In 21 swings, it was also seen that individuals' awareness of each others' presence and action, affected their interaction experience (Lubart, 2005). For instance, once a person was playing on the swing next to a stranger, instantly or after some time, consciously or unconsciously, they tend to focus on either syncing their movement or reversing them. So, an individual on a swing becomes aware of the music notes that are being generated by their own swing, in addition to the other music notes that can be heard from someone else's swing, and he/she occasionally tries to create a pleasant harmony by adapting their movement; consequently, this action might be reciprocated by the other player. Similarly, in Loop, in some cases, another type of awareness

configuration was observed, when one individual finds themselves in a position to focus on adapting their movement speed to their partner's to obtain a clear-cut image or just because it's more fun to push and pull the handle in same rhythms.

Reflection

Later, in developing the concept of Magic Mirror, I noticed the potential for the occurrence of a similar phenomenon in finest manner. When one individual stands in one of the pavilion entrances and tries to explore the mirror's puzzle, suddenly they might become aware of the presence of someone else through the medium of the mirror, in a very fun and playful way, which could positively affect their interaction experience. This setting would subtly work as an ice breaker and facilitate communication between the two individuals who have their images combined.

Familiar Interaction

Another emerging pattern was observed during lunchtime, when all the swing's seats were empty, and an individual walked in, they didn't seem to hesitate to initiate an interaction with the installation because no one else was playing. This suggests that the familiar interaction (nostalgia) of the swings and their ease of use make everyone feel confident enough to begin playing with it in the first place since they have tried it at least once in their childhood (Grønbaek et al., 2012).

Modes of Interaction

Human-Installation Interaction

One recurring type of interaction surrounding Loop was what Long (2017) calls *remote interactions*, which involves participants who took selfies, photos, and videos while they were playing with the Loop. They mostly tended to take videos that capture emerging images besides the whole installation settings. These types of recordings facilitate the interaction of remotely located participants, like when they share the video on the social media.

The other type of interaction was observed before engaging with the Swing; most people, 157/161, got on the swings without delay and started playing, while a few people, 4/161, initially examined it by pushing it with hand and then got on it (*nonverbal interaction*). A *one-shot interaction* was also observed in which a man approached a swing, pushed it with one hand, and left (Csikszentmihalyi, 2014).

In the case of Loop, visual attractors due to the colorful lighting stripes, which were also visible from distance, made an interaction dynamic which reduced deterrence and motivated passers-by to get closer and play with the system. In addition, once they got close, because of the loops partially enclosed structure, curious people tended to get closer and often climbed on to see how it works.

Human-Human Interaction

In terms of human-human interactions, it was noticed that once a group of people entered together, they were more likely to play and sit inside a single block together, since they were reluctant to disperse and tend to wait longer to find free seats next to each other. In addition, the division of the swings into the blocks of three made people who were sitting in the same block feel that they belong to a group, so they tried to adjust their movement and make melodies with their fellows.

Reflection

The observation of the 21 Swings and Loop took place at different times of the day and year, so many of the elements were not comparable. Taking this into account, I hypothesize that the physical affordances of the Swing invite both alone individuals and groups to play with it; although some people might get discouraged because of the outside urges, like time obligations or another awaiting participant, in a normal situation, one should not feel the need for a companion to use the swings. Whereas in the case of the Loop, even though at the time of the observation, the place was swamped with participants, and they often needed to wait in a line for their turn, I assume that this was mainly due to the Christmas buzz and the other events happening nearby. Otherwise, it was evident that the design of the Loop require people to be with a partner, so they would find it harder to initiate an interaction when they are by themselves.

Application of Participatory Workshops

In the last section of this project, I benefitted from participatory practices to test the urban installation concepts that were designed through a reflective practice with some groups of potential users to learn from their insights for further improvements. In addition, employing these concepts as some sort of tool allowed me to subtly educate participants in the domain knowledge of the project, which later assisted with idea generation (Clatworthy, 2011), and encouraged their creativity (Crilly & Cardoso, 2017) to co-design playful city interventions through an inspiration card workshops.

Initially, I planned to perform all three activities, namely focus group, narrative writing and inspiration card, in one single session, but after running the first workshop, which took about three hours people were exhausted and not very productive, I decided to divide the content into two sessions with fixed participants. In total, four sets of participatory workshops were organized, with two participants in each group, and all of them took place online, over zoom (Figure 12).

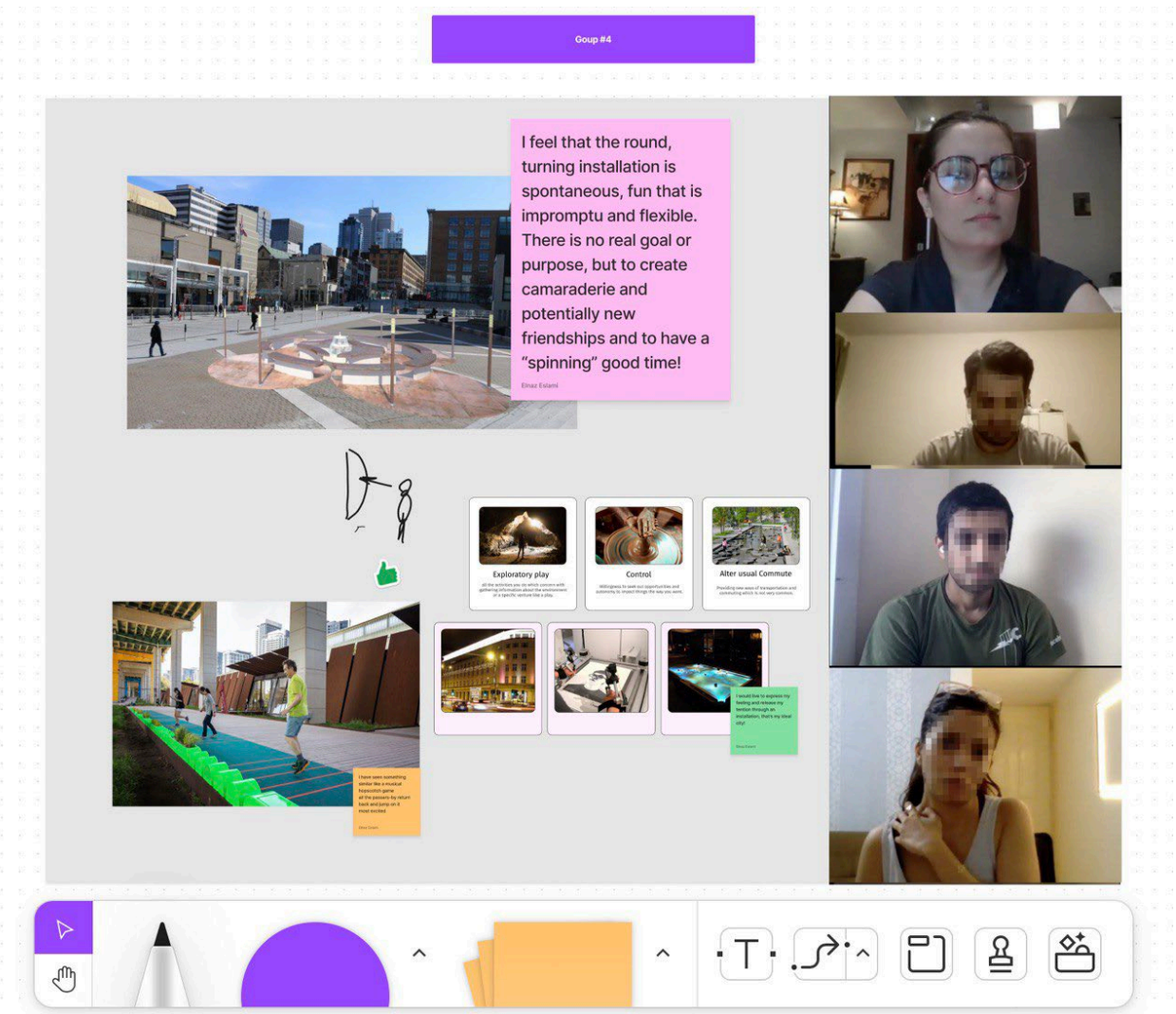


Figure 12: Snapshot of the participatory workshop in Figjam, over Zoom

Participants

Due to the Covid situation and limited resources for the project, it was not possible to recruit all the participants from a single local community, so I decided to design the urban installation concepts without considering the situation of a certain location where the participants reside. The constraints associated with user recruitment deterred us from designing concepts in accordance with distinctive conditions of a certain location, such as the weather conditions, socio-cultural and economic settings, and dwellers' predominant demographics. However, I benefitted from gathering a diverse group of people who were living in totally different cities, with various backgrounds and experiences, who brought diverse insights into the designs, which broadened

the project's perspectives. Moreover, the insights from workshops' reflection are not tied to a particular situation, since participants co-designed concepts without considering a specific location as well.

Workshop's First Session

The first session of the workshops usually lasted for two hours with fifteen minutes break in between. We spent about one hour on each activity. I used to start the session with an introduction about myself and an overview of the workshop plan which is comprised of two activities, Focus Group and Narrative Writing. After ensuring that everyone has signed and sent their consent forms, I briefed on the research objectives and then we started with the first activity.

First Activity: Focus Group

A number of practitioners, such as Bowen et al. (2011) and Bossen et al. (2012) have shown that sharing experiences and resources in the early stages of the participatory design processes, and before the creative development, is useful for building a common understanding among the participants and letting them gain a deeper knowledge of the context of the practice. In this respect, I designed two activities for the first session of the workshops to handle these points before the co-design phase.

Drawing from ideation techniques, the goal of the first session of these workshops was to conduct a focus group discussion regarding existing urban installations to pull out users' feelings, preferences, and attitudes to use their lived experiences as a design source. The aim of this activity was to familiarize users with the concepts and design qualities related to playful urban installation and as a warm-up exercise to stimulate their creativity. Moreover, it provided the required data for supporting reviewed literature and study users' insights in order to turn them into inspiration card activities for designing the domain cards.

Accordingly, for the first activity, I chose five urban installations to teach participants how they work to engage pedestrians in playful interaction. I showed them a short video of people interacting with them. Then they needed to choose one of the installations that they liked most

and were asked to answer a set of questions in connection to it. In certain situations, I asked some follow-up questions to urge more elaboration, if necessary.

In this regard, I needed to choose 4 to 5 urban installations among many around the world that I had found by searching the keywords playful/interactive/urban/installations on Google. For this purpose, I used the design dimensions proposed by practitioners for evaluating the interactivity degree of public installations. The criteria for choosing these installations is that they each possess one conspicuous design quality, which is easy to communicate and subtly teach it to participants, in order to prepare them for the co-design activity in the second session. In addition, all of the selected urban installations are trying to address the design attribute of 'playfulness' to create fun and entertaining experiences in relaxing and aesthetically pleasing settings.

In the following, I will provide the details of each selected urban installation and its most prominent quality that I intended to convey.

The five case studies described below are presented and analyzed through the multimedia content on the web pages, as their designers did not develop a comprehensive analysis of the process of their creation and how people interacted with the installation after building and placing it in cities.

1. Pulse of the City by George Zisiadis (Figure 13)

Boston, United States of America

This art installation is a playful sidewalk intervention which is a heart rate monitor that records pedestrians' heartbeat and turns it into music. Each installation includes a chest-high, oversized heart with handles on the sides that capture the heartbeat and a speaker in the center to play the song. The songs are tailored, in rhythm and style, to each person's heartbeat. In 2012, five of these installations were placed across Boston, Massachusetts. Its designer attempts to inform pedestrians about their health conditions in a playful way through the rhythm of the music it plays.

"Amidst the chaotic rhythms of the city, it helps pedestrians playfully reconnect with the rhythm of their bodies. It combines art, design, and technology to promote the use and celebration of public space in an uplifting and imaginative way" (Zisiadis, 2012).



Figure 13: Pulse of the City by George Zisiadis, Boston, USA

The most prominent design dimension of the Pulse is *interaction style adequacy* (Falk & Storksdieck, 2005), which refers to the suitability of interaction, considering the goal of the installation. Designers employ different styles of interactions in their concepts which will determine how easy, difficult, boring, or exciting the interaction is perceived by users. This quality also remarks that the interaction style should be connected to information content and environment atmosphere. In the Pulse of the City, the designer utilized the form and color of the heart and used the heartbeat as input to raise people's awareness about their health and well-being. Therefore, the interaction style is properly related to the goal and content of the installation, so it increases pedestrians' engagement while they are entertained and become more conscious of their health condition.

2. Sonus Loci by Stantec and Leanne Zacharias (Figure 14) Winnipeg, Canada

Sonus Loci was the winner of the warming hut design for Winnipeg, Manitoba 2013 competition. It is comprised of a number of chimes dispersed on a skating trail. These planted chimes can naturally amplify and transform the sound of the wind and make its presence known. Skaters will also experience a more tactile experience by skating between the chimes.

"Quieted by shelter, wind continues to sing, howl, and moan. Slowly populating the landscape, first one, then two, clusters of five, seven, and then many, increasing like a crescendo of voices in a choir; a landscape of white phosphorescent sounding tubes emerge from the scored ice of the Red River Mutual Trail. Each sonical tube harnesses the energy of the wind to create a unique tone, and at the center of this polyphonic chorus, the Sonus Loci— offering shelter to those who encounter it, passing through along their course. The anthem of this melodic garden of sounding tubes, a chorus of timbres and textures, strikes a chord-balancing the power of this ephemeral landscape's sound of silence" (Warming Huts, 2014)



Figure 14: Sonus Loci installation, Winnipeg, Canada

The most recognizable dimension of Sonus Loci is its *simplicity* (Witschey et al., 2006). Since this installation is literally comprised of several chimes, which resulted in an uncomplicated design, the idea behind it might not appear to be very creative. Whereas, its simplicity is the quality that has made it unique and easier for people to interact with. Ice skaters navigate their way throughout the chimes, which indulges their experience while they are not obliged to assimilate new information. The design principle of simplicity is important to consider when the main interaction with the built environment is not centered on the installation, such as in this installation, the main activity is ice skating, and the installation alleviates skaters' experience.

3. Entree Station Overvecht/ Transit Accelerator by HIK Ontwerpers (Figure 15) Amsterdam, The Netherlands

Transit accelerator was part of the renovation project of Amsterdam's Overvecht. It is an outdoor slide installed adjacent to other stairs which leads to the train station. It is designed to accelerate

commuting, especially during rush hours, in a cheerful way. The design of the slide is highlighted by a couple of red handrails on the sides of its shiny mirror-like shield. It provides a fun experience for young and old citizens who want to enter or exit the station.

"Our urban designs are both functional and innovative by giving urbanites a platform for interaction and dialogue. Designing a site-specific public art installation requires a flexible attitude towards the current situation and the demands for change. It is a key that throughout the design process, both general interests and aesthetics are cherished" (HIK Ontwerpers, 2014).



Figure 15: Entree Station Overvecht, Amsterdam, Netherland

Area Integration (Gonçalves et al., 2012) is the design quality, which is perfectly echoed by this installation, which concerns how unified the installation is with the space that it is being located in, while it is maintaining its narrative. Basically, it states that subjects matter as the installation should be incorporated into the spatial context without being felt disconnected from the rest of the existing elements. Overvecht possesses the nature of transition in itself as people slide on it, while it keeps the form of the stairs next to it, complemented with two red handrails.

4. Walk Walk Dance Touring Installation, Daily Tous le Jours. (Figure 16)

The Bentway, Toronto, Canada

This design intervention was created in response to the Covid-19 crisis by providing new ways of experiencing and exploring the city during this time. Walk Walk Dance offers safe and fun

moments through a series of music-making lines, which tries to explore how new forms of interactions can create a new environment for play. When people step, jump, roll and dance on these lines, they are indirectly encouraged to follow physical distancing rules by taking one step at a time to trigger music. It is also designed to be accessible for everyone, whether they are on foot, bike or wheelchair.

“Walk Walk Dance is a roving project designed for struggling cities that need to quickly revive their public spaces in the wake of COVID-19. Since it is being created for temporary displays, the installation adapts to all pathways and streets, making it easy to deploy in diverse urban settings. Because every city needs a dancing strategy.” Daily Tous le jours (2021).

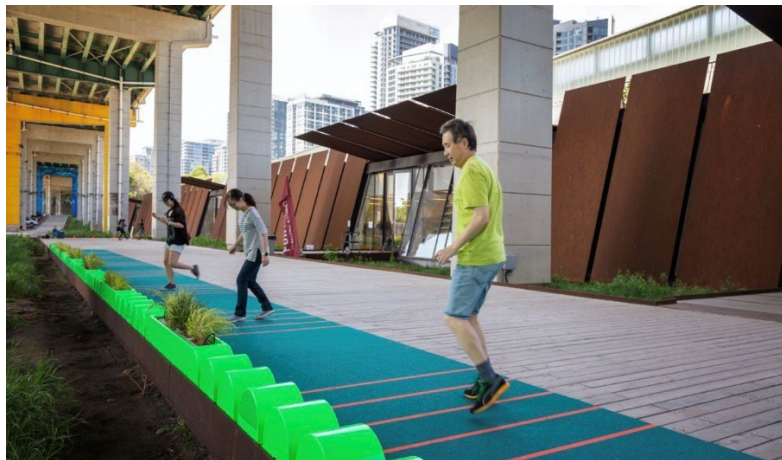


Figure 16: Walk walk dance, Toronto, Canada

The design dimensions that I intended to convey most through Walk Walk dance are *Visibility* and *Structure*. *Visibility* (Krueger, 2003) refers to the responsiveness degree of the installation and how well it provides users with interplay capabilities and immediate feedback to facilitate their interactions without the presence of distracting elements. The stripes of Walk walk dance are painted in bold colors on the ground, so every pedestrian notices them when they are walking, and they will hear the sound right away once they step on it; thus, all the digital and physical elements are available and visible to them for further interaction.

The second most important quality of this installation is associated with its *structure* (Dalsgaard & Halskov, 2010) which is related to the principle of proximity in layouts. That is to say, related elements should be rendered close to each other or through similar visual representations and groupings. Therefore, unrelated elements should emerge distinctly in distance or by applying

separate visual cues. In Walk walk dance, colored lines that produce a particular music pitch are grouped together on two sides of a small boulevard; this also simplifies the recognition of various musical notes, and results in actions that make the interaction more playful and appealing.

5. Impulse by Lateral Office (Figure 17)

Montreal, Canada – New York, United State

Impulse includes 12 oversized seesaws installed in a completely vehicular free street in order to encourage pedestrians to play with them. The seesaws illuminate and emit musical sounds when people sit on each end of it and grab the handles. This urban intervention transforms the street into a playground with the introduction of one of the most famous games for kids.

"The immersive urban instrument creates an exciting, playful experience, in which visitors become the musicians and artists through a series of illuminated seesaws that respond and transform when put into motion," Garment District Alliance.



Figure 17: Impulse, New York, USA

My intention in choosing Impulse was to inform participants about the design quality of *collaboration* (Dalsgaard & Halskov, 2010). One of the most important reasons that pedestrians engage with an urban installation is to find the opportunity to enhance their social interactions.

Therefore, an interactive installation should provide collaborative activities to enable participatory experiences. On the contrary to the rest of the aforementioned cases, which offer some sort of individual activities, Impulse allows an activity that has a collaborative essence enabled by its structure. At each end of the seesaws, the seats are designed for up to two people and it can be played only when someone else is willing to sit in front of you. In this way, the installation requires people to get engaged in a collective interaction and makes it easier for them to interact with strangers and talk to them.

The questions for the first activity are:

- Which one of these urban installations do you like best, and you want it to be designed for your city?
- Why? What is interesting about it?
- Where do you want it to be installed?
- Is there anything you would like to change?

Whenever they answered shortly, I asked follow-up questions for more elaboration.

I presented the opted urban installations accompanying some images and/or a short video. The participants' responses are summarized in the five following tables, each for one installation, and the last columns are dedicated to the insights and themes that I extracted from their discussions, to design the domain cards for the second sessions of the workshops. (Table 1 to 5)

Pulse of the City	One participant selected it as their most favourite	Themes/Insights
What makes it interesting for you	<ul style="list-style-type: none"> • it's interesting that it can resonate with inside my body and reflects my feelings, like when I'm nervous and my heartbeat is high, it generates a fast beat of the music • I like to become aware of my inner body in a playful way 	<ul style="list-style-type: none"> • <i>Expression</i> • <i>Awareness</i> • <i>Control</i>
The location you want it to be installed	Not in a very crowded place where people might break it	
Any changes you want to make	I like it to serve my mood, like playing happy music if I'm happy or playing soothing music if I'm anxious	

Table 1: Focus group responses in regard to Pulse of the city and elicited insights

Sonus Loci	One participant selected it as their most favourite	Themes/Insights
What makes it interesting for you	<ul style="list-style-type: none"> • I like its exploratory nature, to try different postures with my body around it and find out how it affects the sound it produces • Unlike Walk Walk Dance you're there for a recreational activity (skating), so probably the sound doesn't bother you or other people nearby • multiple factors impact the outcome like wind, skater posture, direction and so on, so it constantly changes 	<ul style="list-style-type: none"> • <i>Exploratory Play</i> • <i>Ability to Transform</i> • <i>Discovery</i> • <i>Collaboration</i>
The location you want it to be installed	I wouldn't install it somewhere busy, and not throughout the whole path, so people can take a break from it and go farther if they want	
Any changes you want to make	I would like to make its sounds similar to sound bowl	

Table 2: Focus group responses in regard to Sonus Loci and elicited insights

Entree Station Overvecht	One participant selected it as their most favourite.	Themes/Insights
What makes it interesting for you	No additional effort is needed, and you don't need to allocate a specific time to have fun, it's part of your daily commuting, I would really enjoy it. I don't think any of the other installations can give you the joy and excitement that sliding would	<ul style="list-style-type: none"> • <i>Alter usual Commute</i> • <i>Pedestrian Contact</i> • <i>Opportunity to Observe</i> • <i>Epic Color</i>
The location you want it to be installed	in a crowded metro station like Guy or Lionel-Groulx station not a recreational space	
Any changes you want to make	This is a usual slide, maybe I like to make it a family slide that a group of people can use together	

Table 3: Focus group responses in regard to Entree Station Overvecht and elicited insights

Impulse	One participant selected it as their most favourite.	Themes/Insights
What makes it interesting for you	I like that I can play it with my kid, other seesaws are usually small	<ul style="list-style-type: none"> • <i>Safety and Security</i> • <i>Fellowship</i> • <i>Imageability</i>
The location you want it to be installed	Somewhere close to my house	
Any changes you want to make	It's all good and I think it's safe for the baby, too	

Table 4: Focus group responses in regard to Impulse and elicited insights

Walk Walk Dance	Three participants selected it as their most favourite.			Themes/Insights
What makes it interesting for you	<ul style="list-style-type: none"> • I have seen something similar like a musical hopscotch game • all the passers-by return back and jump on it • most excited • people might get detached from everyday experience 	<ul style="list-style-type: none"> • it gets easier for me to engage in physical activity for a longer time with such an installation • it motivates physical activity • it becomes part of what you're doing without doing extra activity 	<ul style="list-style-type: none"> • I like it that I'm the main influencer who is in charge of the ongoing interaction • On the contrary to the rest of the installations, I have a role and can make a difference with my action • it stimulates my creativity and I can impact the outcome 	<ul style="list-style-type: none"> • <i>Sense of Belonging</i> • <i>Nostalgia</i> • <i>Ability to Transform</i>
The location you want it to be installed	Somewhere not too busy that would be chaotic, and not too calm that no one passes by	Somewhere close to my house that I can get there easily for my daily workout	In a crowded neighbourhood where many people are commuting, like surrounding a round square	<ul style="list-style-type: none"> • <i>Control</i> • <i>Separate from Everyday Experience</i>
Any changes you want to make	Nothing, just to make sure that it is resistant and doesn't reduce its sound quality over time	I like it more if its sound is a comeback to my action, e.g. it emits sounds and turns up the volume if I'm jumping fast enough, responsive musical lines in response to my physical activity, that would be a lot more motivating	I like it more to be painted like a piano, because I don't know how to play piano, and this can simulate that experience	<ul style="list-style-type: none"> • <i>Physical Activity</i> • <i>Alter usual Commute</i> • <i>Pedestrian Contact</i>

Table 5: Focus group responses in regard to Walk walk dance and elicited insights

Second Activity: Writing Narratives

Following the first activity and reviewing the relevant literature (Wolstenholme, 2010), I noted that the lack of domain knowledge and ideation tools in participatory practices is a significant barrier to elicit novel and qualitative ideas and that induces a tendency to converge on simple solutions (Langley et al., 2018). By introducing my concepts of urban installations that are designed in accordance with playful urban typologies and aimed for improving social interaction as my creative practice, I tried to implicitly train users with relevant design principles and help them deliver sufficient divergent thinking (Van Mechelen et al., 2019).

As a result, for the second activity, I got my inspiration from the concept of “Design fiction” (Blythe, 2014), which is a research method for exploring the potential values of new design projects. In this method, the practitioner comes up with imaginary abstracts to describe design artefacts that do not exist in their fictional problem spaces, then reports the results of studies that they did not conduct. The narrative presented in the abstract raises questions and investigates design spaces without committing too much resource. By virtue of this method, I employed the four concepts that I had formerly designed during my creative practice. Since I didn’t have the resources to build them into prototypes, thus, used them as some sort of tool for further exploration by involving potential end-users.

Moreover, according to Schon (1983), the practitioner perceives the situation as a given in their repository of information, mock-ups or prototypes, so they are able to establish new conventions through taking exploratory steps. In this sense, employing narrative the way I did is a precursor for a similar use of storytelling techniques. Nevertheless, I couldn’t adapt it to its elite version; I learned from the workshops how it should be adjusted and applied to achieve the intended results. The entire process of experimentation and the knowledge I gained is the literal objective of reflection-in-action.

Therefore, for the latter half of the session, participants were asked to choose one of the four concepts presented to them with 3D renders, then write a fictitious narrative about their interaction with the concept of their choice. I challenged participants to be as precise as they could and assured them that every single detail, even those that might seem bizarre and unworthy to mention, could be helpful.

Some of the clue questions I mentioned to stimulate their imaginations were:

Where is the installation located? Which part of the city? Are you alone, or are you with someone? Are you actively engaged, or are you just observing others interacting? Did you get excited at first glance? Which part of the installation are you positioned? What are you doing? What is the weather like? Are you enjoying the activity? What are your feelings? How long do you spend time playing with it? What do you like most about this installation? How do you think it can be improved? Did you talk to any strangers? Why did you leave? And so on.

In addition, with the help of this activity, I intended to explore possible outcomes of the designed concepts and try to force them into the research context. Subsequently, to learn more about users' behaviour and study the emerging patterns when they are discussing their chosen concept in order to identify themes relevant to the notion of playfulness in public spaces. Furthermore, through this activity, I was hoping to partly address one of the major constraints associated with usability testings of designing tangible large-scale products, in particular in a situation with limited resources. The human-centered participatory design method is an iterative process through which researchers and designers conduct several sets of user testings to ensure that they are creating a seamless experience for their target audience. Since there is a lack of an optimum and cost-effective approach for studying the usability of the physical objects (McGee, 2003), especially on the scale of urban furniture, in this respect, I expected to capture some of the users' pain points through their stories.

For this activity, first, I showed participants the 3D renders of concepts and gave them a brief description.

Pyramid:

The first installation is Pyramid, which consists of a series of treadmills and rolling boards where people can run or set their wheelchairs on them and move. All the stations are placed around a pyramid shape in the center of the installation. People can run, walk and hop on the treadmills, or roll their wheelchairs. As the players start to move, pieces of an image will display on the Pyramid in a section in front of them. The image is synced to people's movement, so they would figure out the specific required rhythm and pace, to conform their movement and complete their part. Simultaneously, a music is playing and gets higher tempo as people are closer to accomplish their section. In this way, they will have the lead and traces from the image, which is responsive, and people need to regulate their speed based on both sound intensity and picture clarity. The image on the Pyramid can be chosen for different occasions, and people can celebrate, commemorate, memorialize, mourn and protest by showing up at particular events (Figure 18).



Figure 18: 3D model of the concept of Pyramid rendered in V-ray

Carousel:

The structure of this installation is simple and similar to a merry-go-round. It consists of four spinning platforms. Modular benches are placed around a water fountain. There are two lighting poles on the sides of each round plate, and people can spin them by holding and pushing the poles. As someone's circle spins, their position and view will change in relation to one another, and they can adjust and choose next to whom they want to sit or stand (Figure 19)



Figure 19: 3D model of the concept of Carousel rendered in V-ray render engine

Post-Covid:

This installation invites people to choose one of the spots and stand under its hat shape, without knowing who is on the other side of the wall, then start a conversation, take photos, make friends and so on. I called this installation post-covid because after the pandemic, even when we are immune and not in danger of close interaction, people might remain cautious in communicating with each other and tend to follow social distancing. This formation invites strangers to step out of their comfort zone and helps them to start a conversation less awkwardly and improve their social connection (Figure 20)

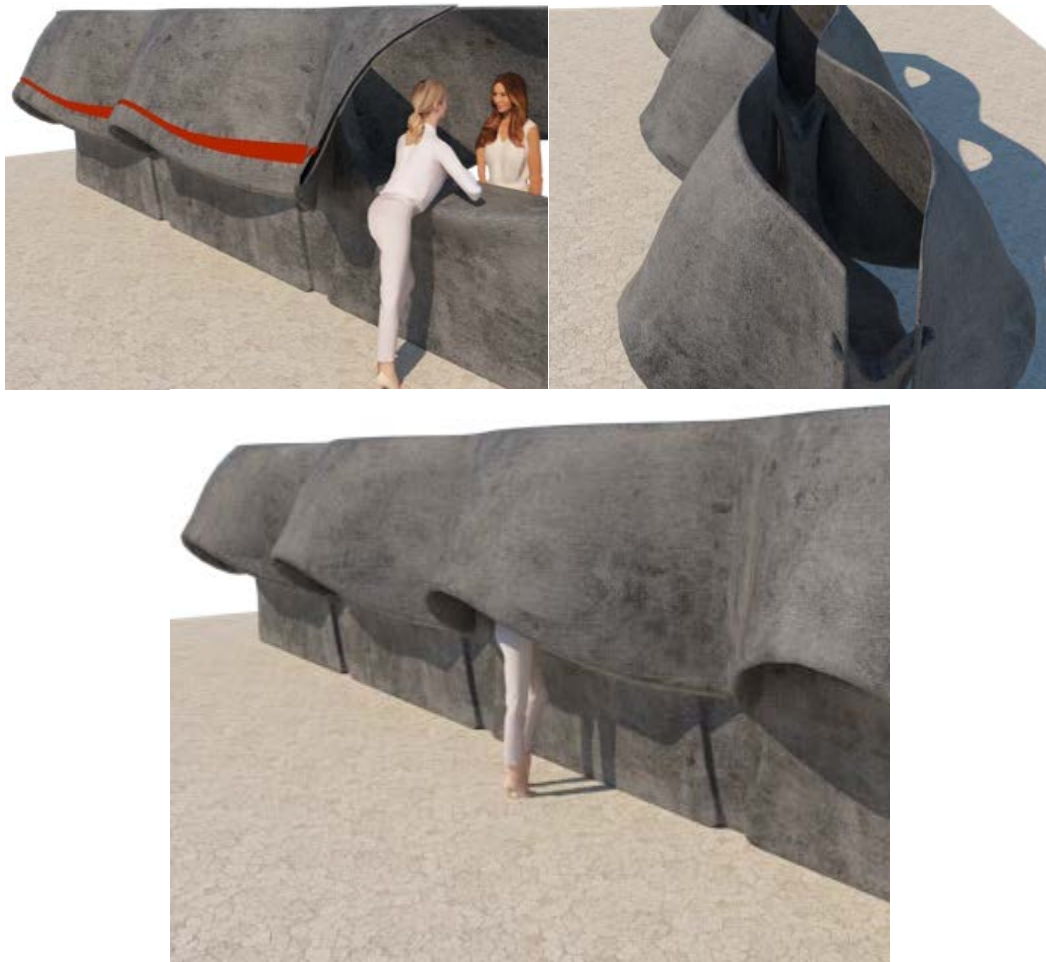


Figure 20: 3D model of the concept of Post-Covid rendered in V-ray render engine

Magic Mirror:

In this installation, there are two mirrors placed in the center of a pavilion and one on the top of the other. The mirror on the bottom is cube shape, and the one on the top has eight sides. People can stand around in determined spots, and the mirrors are situated in a way that reflects their head with someone else's body which makes a humorous merged image of them. I intended to provide a playful opportunity for people to get encouraged and try different positions and take photos (Figure 21).



Figure 21: 3D model of the concept of Magic Mirror rendered in V-ray render engine

Narratives' Key Features

In the following, I quote some of the narratives from participants who were most immersed themselves in the activity and wrote their stories, in addition to my reflections and the design features that I elicited from them. Most of the participants chose one of the concepts of Pyramid or Carousel to write their narratives around it.

The first recurring event arose in the group of participants who live in Canada, they explicitly mentioned in their stories that the weather is warm and sunny. Additionally, those participants who had a suggestive writing tone recommended considering the *safety measures* for winter times.

P(G): [for Pyramid] I would really enjoy this obviously much more if the weather was sunny, and I could absorb vitamin-D as I run or walk

PI: [for Carousel] In summer this would be awesome... and in the winter, if the benches would not necessarily turn (due to the snow). I could picture a fire pit in the middle, where one would roast marshmallows in the winter... a warm huddle.

P(D): [for Carousel] I noticed there were new planters there. The planters had lots of local species and seemed to interact with the benches.

As a result, it is important to consider the performance capacity of installations for cities with somewhat long winters. The other interesting notion in this quote refers to the quality of *flexibility*, that makes permanent installations usable throughout the year, their structure should be designed in a way to be transformed and adapt to different environmental conditions.

The other frequent concept in narratives regarding the Carousel is that it provides pedestrians with an *opportunity to observe* the city and other passers-by because of the benches and their uncommon size and configuration. Additionally, some narratives connect the benches' position and their turning feature to an *inviting* quality which facilitates conversations with strangers.

P(D): Ash was sitting at a bench, and I started to play with the benches, not sure if they move, but they did! Suddenly I was face to face with Ash! What a surprise!

P(H): I would love to sit on this bench, frontwards and backwards... even lie down on it and have it turn as I watch the clouds. There is something great about being outdoors, and being able to enjoy it through a different experience and from a different visual perspective.

P(C): I decide to sit on the bench, and a small child begins pushing the pole to maneuver the benches so I'm sitting adjacent to his parents..., It's now a funny moment between the parent and I as we exchange a smile!

P(A): With this urban intervention I would notice first the arrangement of the benches. How they are situated amongst each other is unique and seems to be inviting conversations amongst strangers.

They also mentioned the variety and level of *interactions* that the benches' layouts could impel:

P(B): I think this installation is interesting because it establishes different levels of interaction and comfortability. By situating friend groups and strangers at different levels of proximity to potentially spur different interactions.

In the case of the Carousel, its similarity to the structure of the merry-go-round would create a *familiar interaction* for people which might be *nostalgic* and improve their engagement with the built environment. In this regard one of the narratives mentions:

P(D): It reminded me of weaving as a child. I begin reflecting on these precious memories of going to the park with my grandma who passed away many years ago as an elderly woman came to sit down on one of the benches.

The other design quality that participants linked to the carousel's poles was *sense of exploration*. The poles hold a hidden quality as they seem static, until someone lean on it or gently pushes it and then they figure out that it spins the plate. This revelation in the narratives was quite surprising for me as well, since it was an unforeseen element, and I hadn't realized it when I was developing the concepts. They also explained how this sense of exploration leads to abrupt social interaction.

P(E): The large poles to me may indicate some form of interaction, but this is not obvious... it makes me curious; I'd move to explore how the benches swivel and rotate on their platform.

P(D): I awkwardly looked over at the elderly lady and smiled. She smiled back and asked me why the polls were there. I explained that they were meant to be pushed on to turn the benches.

In narratives regarding the concept of the Pyramid, one of the most apparent points is the possibility of working out in urban spaces.

P(A): I would love to be there with like-minded people to have a fun day of working out in public. I can see myself there with a few of my "gym buddies" too.

However, the downside associated with the workout setup that Pyramid offers is that it resembles some sort of contest condition, which can stop some people from participating as they might think that only sportspeople are able to contribute and complete the image. So, they prefer to take the role of observer and stay out of the installation space. Since the major objective planned for Pyramid was improving pedestrian physical activity, this issue should be considered in future work.

P(B): The only shortcoming I feel may be that this installation caters to someone who is more “active”. It can be intimidating to someone who sees this as a gym-like setting.

The other issue that was smartly mentioned by one of the participants and requires further development is that the images on the Pyramid won't be visually clear and sharply defined during the daytime and players would miss the experience and the sense of accomplishment that it is supposed to arise.

in addition to the issues mentioned above, people in their narratives noted qualities such as a large-scale obvious landmark, responsive treadmills, kinetic energy, and participation both on an individual basis and in a group.

Lastly the main qualities that I extracted from this activity are as follow:

Spontaneous | Flexibility | Physical Activity | Opportunity to observe | Welcoming | Familiar interaction | Sense of exploration | Safety measures | Creative play | Opportunity to increase social contact

However, except for a few participants, this activity did not yield a particularly promising output. Since people either had a hard time helping their imagination and coming up with a story or their stories were shallow and lacked enough detail. The other thing that often happened was that although the purpose of the activity, which was writing a narrative, was explained and reminded repetitively, some participants' writing tone/style tended to give suggestions and evaluate the concepts instead of having a plot of a story. Therefore, for me as the facilitator, an important takeaway from this activity was finding ways to improve their creativity and encourage them to

stick to the activity. Consequently, prompt users by proposing some unfinished scenarios around the concepts and ask them to complete the stories. In this way, they are less likely to get distracted by the impulse of providing design recommendations.

Later, I realized that despite the partial failure of this activity in achieving the objectives I was pursuing, writing and sharing stories helped to build rapport and trust among participants.

Furthermore, sometimes it worked as an ice breaker, especially when they incorporated a joking aspect or some humors into their stories. For example, when they mentioned a funny memory or something about their personal life, which they wouldn't say it elsewhere during the workshops.

This also seemed to improve the intimacy level among participants. They also opened up about their personal qualities through their stories, like one of the participants mentioned: I try to be the “cool” aunt to these four kids, and take them downtown to have fun, original space; Or the other participant said I’m an introverted person so I rather sit on the corner and watch, and another person could relate to that, they empathized with each other and began a conversation.

Workshop's Second Session: Co-design Activity

Inspiration Cards Workshop

In the following section, I describe the second session of the participatory workshops and reflections on the co-designed process. In this project, I place co-design as a critical stage of the participatory design which attempts “to build on contextual insights to inform the development of new design concepts.”(Broadley & Smith, 2018). Consequently, the empirical research is turned into co-design activities to facilitate the involvement of potential users and to collaborate with them toward a mutual goal through an exploratory approach. Accordingly, the *inspiration cards workshop* (Halskov & Dalsgård, 2006) was chosen as a co-design activity, which allows various stakeholders to collaborate in the different stages of the development process in a creative way (Bødker et al., 2011; Simonsen & Robertson, 2012) to explore and test designed concepts in an iterative way.

For the second session of the workshops, the same participants in their previous group were recruited, so they were already acquainted with each other; in addition, they were familiar with the context of the project and had gained a firm understanding of the project domain. As I mentioned earlier, before the pandemic, these workshops were planned to be held in person by using physical materials like stickers, Legos, boards and chalk for the post-it activity, which participants could annotate to describe the concepts. One of the major challenges concerning switching to an online version was that sometimes the participants were not able to draw and communicate their ideas, so I worked with a friend, who is a graphic designer. He attended all the workshops to help participants sketching their ideas whenever needed.

According to Schon (1983), design is a reflective conversation between the designer and materials, so the designer needs to explore and work with different mediums to understand various aspects of the design. For this purpose, in the case of online participatory practices, a diverse set of materials could be employed, including digital cards, videos, images, prototyping, affinity diagramming, online sketching, etc. Consequently, in online inspiration card workshops, the designer and participants work with two sets of digital cards, *technology* and *domain cards*, and then they collaboratively create design concepts by combining them on a poster.

A technology card includes a specific technology or the application of a prominent component of an installation. It usually includes the name of the technology, with an image and description, it can be 'video cards,' in which the technology is explained through a short video. Contrary to domain cards, a series of technology cards can be used for various projects. For this workshop, I used a set of 20 video cards, available at <http://www.digitalexperience.dk>; most of them are the application of one or more technologies in different art installations (Figure 22). The criteria for selecting the technology cards were twofold, 1) they possess some degree of playfulness and interactivity element in their constitution, and 2) they were conceptually related to some of the domain cards' contents, so it was more likely that the participant would design concepts which contain playful features.

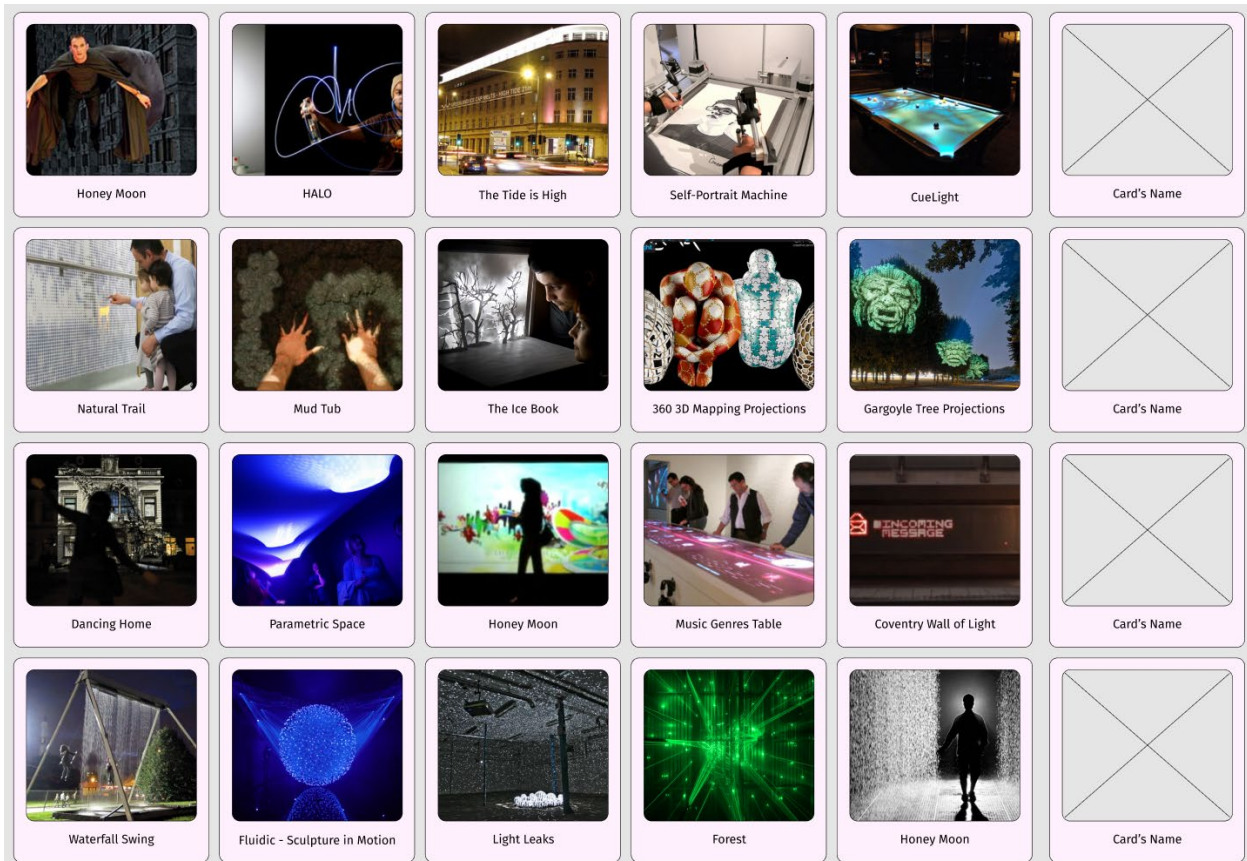


Figure 22: Technology Cards Created in Figjam with video links

Domain Cards represent information about the context, situation, setting, pattern, people etc., of the project field. Since the Domain cards are only relevant within a specific project, so I designed them pertinent to the research objectives, and through eliciting concepts from the literature review, site observation and the recurrent ideas invoked by participants during the first session workshops (table 1 to 5; Narrative Insights). The cards are assembled in a Figjam file using a frame and an image which vaguely represents the concept as it is supposed to leave room for open perception, associated with a short description (Figure 23).

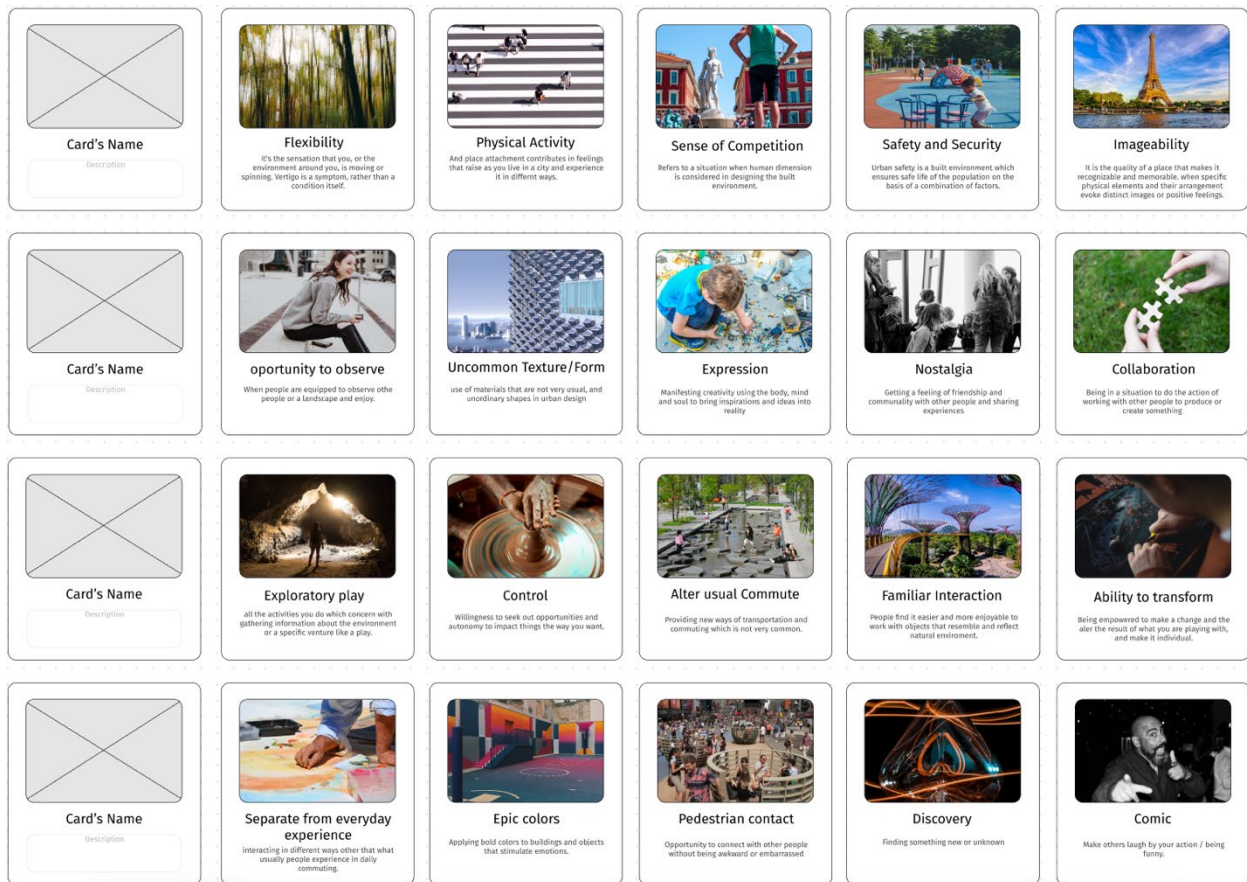


Figure 23: Domain Cards created in Figjam

A separate Figjam link was dedicated to each group, through which they had access to the workshop resources. Participants were able to pick and move the cards and stick them to a frame which functions as a digital poster. They could also integrate texts into their posters and describe their concepts or add comments if desired. In addition, I put domain cards templates, in which

the participants had the option to add concepts that were not included in the existing domain cards to make new cards and use them in their work.

Similar to the first sessions, the second sessions of the workshops were held with the same groups of participants. In the first part of the workshops, I explained the objectives and structure of the workshop. Then, the domain cards were presented by providing a brief explanation, and for the technology cards short video clips were played from the digital experiences website, and participants were welcome to ask questions in case the video was not clear.

The main phase of these workshops consists of users collaborating with each other and developing concepts on a poster. So, I asked them to create concepts while disregarding the quality and plausibility of their ideas. Because of my experience from the first session, most of the participants were tended to overthink their ideas and did not find some of them even worth mentioning. In this session, we faced similar problems, as some participants struggled with the technical aspects of their concepts and constantly paused to discuss with each other and ensure that their concepts were functional in the real world. This was an evident event, particularly in those participants with engineering backgrounds who were more obsessed with technical issues. Participants used to discuss and work together; they interchangeably picked some cards from a pile and stuck it on the poster, drew some shapes or asked my friend to help them sketch out their ideas, then supplemented them with text, illustrations, or images provided by Figjam plugins to refine their concept. Afterwards, each group had around ten minutes to give a summary of their final concepts.

The entire workshop usually lasted for 2 hours. At the end of each session, as participants were already familiar with the field of research and were aware of the project goals, we discussed different features of the designed concepts. Then we evaluated them together in order to decide which concept holds most of the playfulness and interactivity qualities and voted to choose the one we liked the most. After each session, I utilized my friend's sketches to make collages of the selected concepts and attached them to my design workbook. Lastly, the reflections are concluded from the documented comments and annotations on posters associated with each co-designed concept.

In this section, the focus is on the co-creation process of the selected concepts from each group, besides the important turns of events and emergent patterns throughout the workshops. For example, the act of selecting a specific card, participants' relationship dynamic, the role of the

digital design artefacts, and the process in which they choose one of their several fuzzy ideas and decide to move forward forming a more concrete concept.

First Group

Two participants of the first workshop aged 28 and 32, with engineering education, and both live in Montreal. After the presentation of the cards, while there are no rules in terms of turn-taking, participant A initiated a discussion by picking a technology card of 'Coventry Wall of Light' and attached it to the poster.

P (A) after picking the 'Coventry Wall of Light' card: You know I'm looking for a domain card that represents a *Binary* action for the on and off states of the installations.

P (B): Mmm, I see your point, but I couldn't find any close content. Maybe we can add it, and it is also useful for the other concepts too.

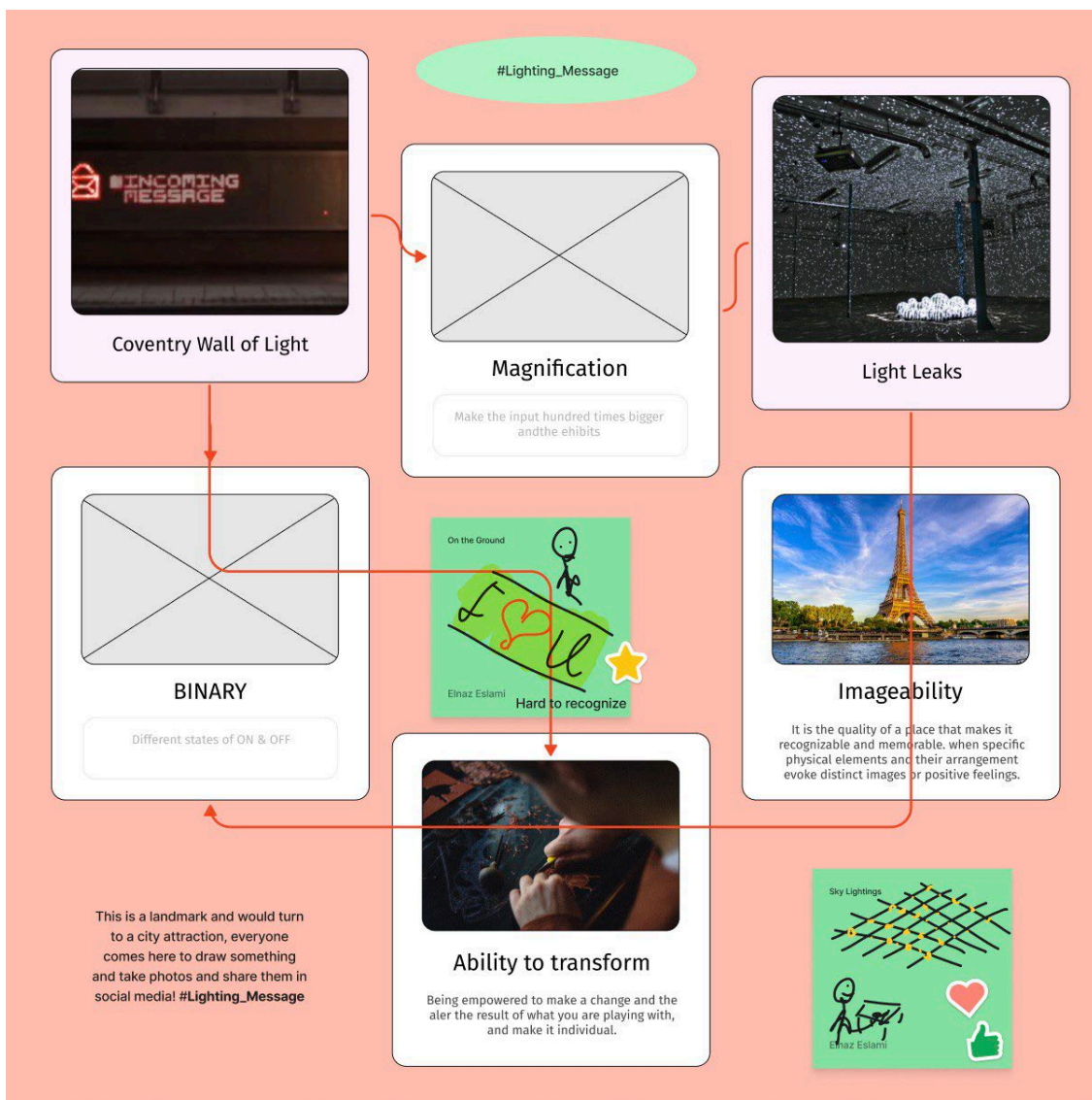


Figure 24: First group poster made in Figjam

One common theme that was frequently observed during the workshops was that participants seemed to commence ideation individually while they were watching the cards' video clips, so they start with picking a technology card from which their idea was sprung. This looks to be due to the similarity of the workshop objectives with the technology cards which were mostly showing interactive art installations with a prominent technology component. Therefore, after picking the technology card tied to their loose idea, they started looking for the domain cards that can be fitted into their concept.

After some time and re-examining the domain cards, they both agreed that they wanted their installation to characterize two main attributes. First, the option to exaggerate users' input, they wanted to make the outcome visible to other people in the area through amplifying an action. Second, they intended to design a concept which enables users to transform the outcome with their creativity.

The other common pattern that was evident among most of the groups was that participants used to support their ideas by giving examples of an imaginary situation to clarify their ideas and get confirmation from their teammates to make sure that they are on the same page.

P(B) regarding the first attribute: Like I raise my hand and it displays hundreds of it, isn't it entertaining?

P(A) regarding the second attribute: Imagine it gives you a number of sound rhythms, and you can compose a piece of music with your own creativity and play it for other people! That could be so much fun!

Eventually, after choosing the rest of the inspiration cards and sticking them to their poster along with some descriptions (Figure 24), they completed their concept and called it "Lighting Message," which includes their desired qualities (Figure 25). The concept consists of many binary lights woven into some strings, which create a beautiful lustrous ceiling for a street. The binary lights are synced to a small display on which passers-by can write and draw whatever they want, and the system will illuminate the lights that are conformed to the texts and shapes or vice versa.

Moreover, in all sessions, participants had some fun coming up with use cases for their concepts. In this case, they said:

P(A): Like I go on a work trip to X city, and I have missed my wife, I'd go to this street and write her name with a heart shape, take a video, and send it to her! Lol!

P(B): This is a landmark and would turn into a city attraction; everyone comes here to draw something and take photos and share them on social media! #Lighting_Message



Figure 25: Lighting_Message, First group co-designed concept

Second Group

The second concept is one of the three concepts that co-designed during the second workshop, and the participants drolly called it "Magic Mirror 2", mocked by one of the concepts I had presented in the first session, for the narrative writing activity. The participants aged 25 and 26; both were designers and living in Toronto, Canada.

One of the identified patterns in terms of the relationship dynamic between participants was that when one of them introduced an idea, their teammate challenged it by asking some questions, which was helpful for discussing unnoticed aspects of the idea and improve it.

P(D): I like the idea of the 'Honeymoon' card. We can use the way it takes the user image into another environment...

P(C): why do you think it's interesting? They can do the same thing via many mobile applications, like Snapchat...

P(D): that's true, but there are dozens of other things that we can do at home, like work out but we go to the gym..., although we can enhance the experience by incorporating a collaborative characteristic to it? Like people can create a particular scene with their friends or family!

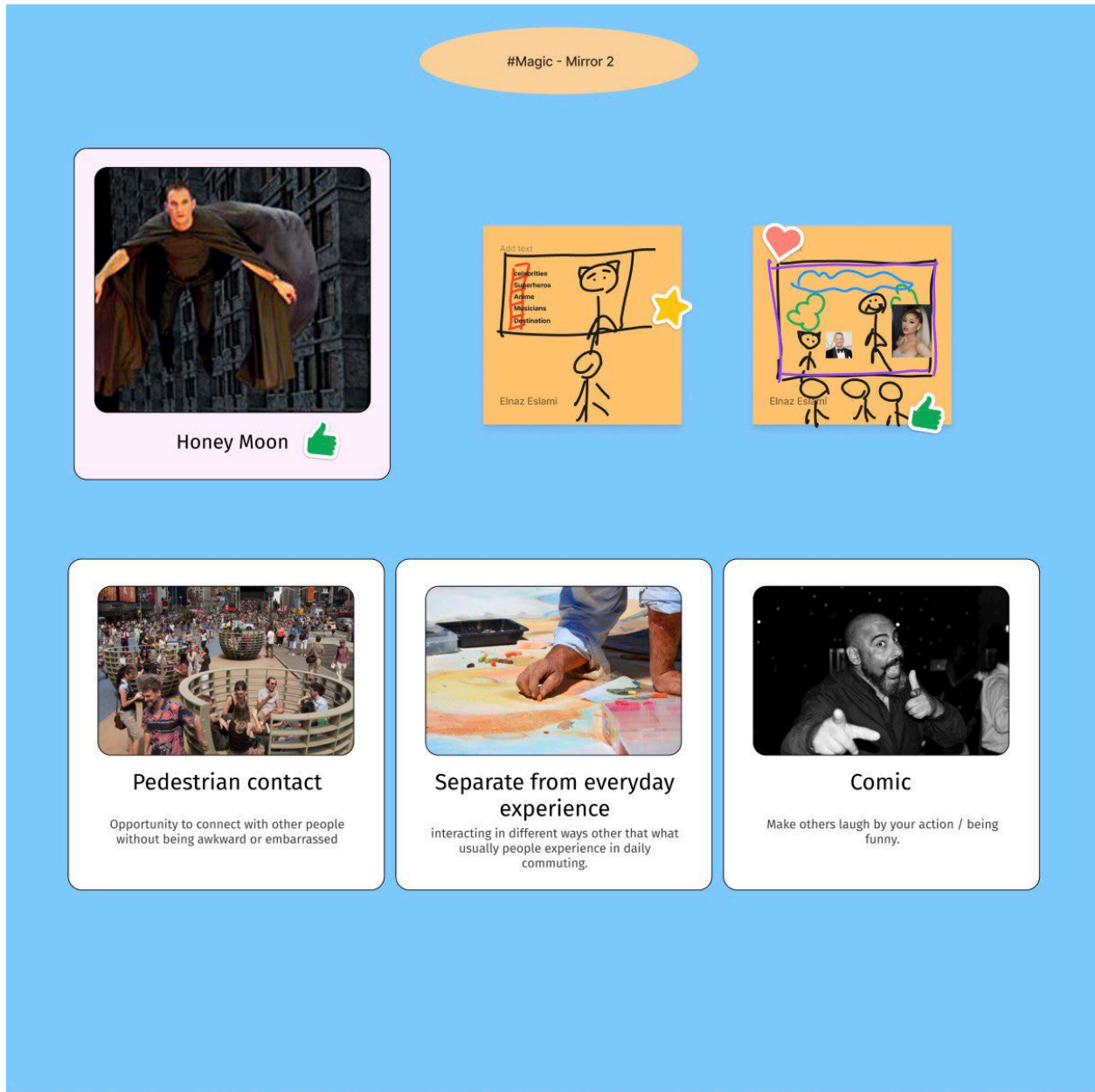


Figure 26: Second group poster made in Figjam

The domain cards they selected for developing this concept were ‘Comic’, ‘pedestrian contact’ and ‘Separate from everyday experience’ (Figure 26). This concept is basically a big screen installed on a sidewalk; it has a menu of various places, celebrities, and superhero outfits, which people can choose from. The screen pictures pedestrians in their selected surroundings and outfit

accompanying their favourite celebrity or fictional characters. Users can set the scene and then take a photo or video (Figure 27).

The uses case that they mentioned for this installation was:

P(D): I'm going to wear a batman outfit and propose to my girlfriend in front of the Eiffel tower!
Isn't it hilarious!?



Figure 27: Magic_Mirror 2, Second group co-designed concept

Third Group

Both participants of the third workshop were 35 years old and living in Tehran, Iran. In this concept, participants tried to come up with ideas other than what was commonly presented within the technology cards. Using an external source of inspiration was another repetitive incident that was observed almost in all the sessions. Participants tend to draw upon their personal experiences or bring up something that they had formerly found interesting to the discussion during the process of picking inspiration cards.

P(E): all of these technology cards contain some degree of a lighting element in themselves.
Let's be more creative and create a concept that excludes the lighting features.

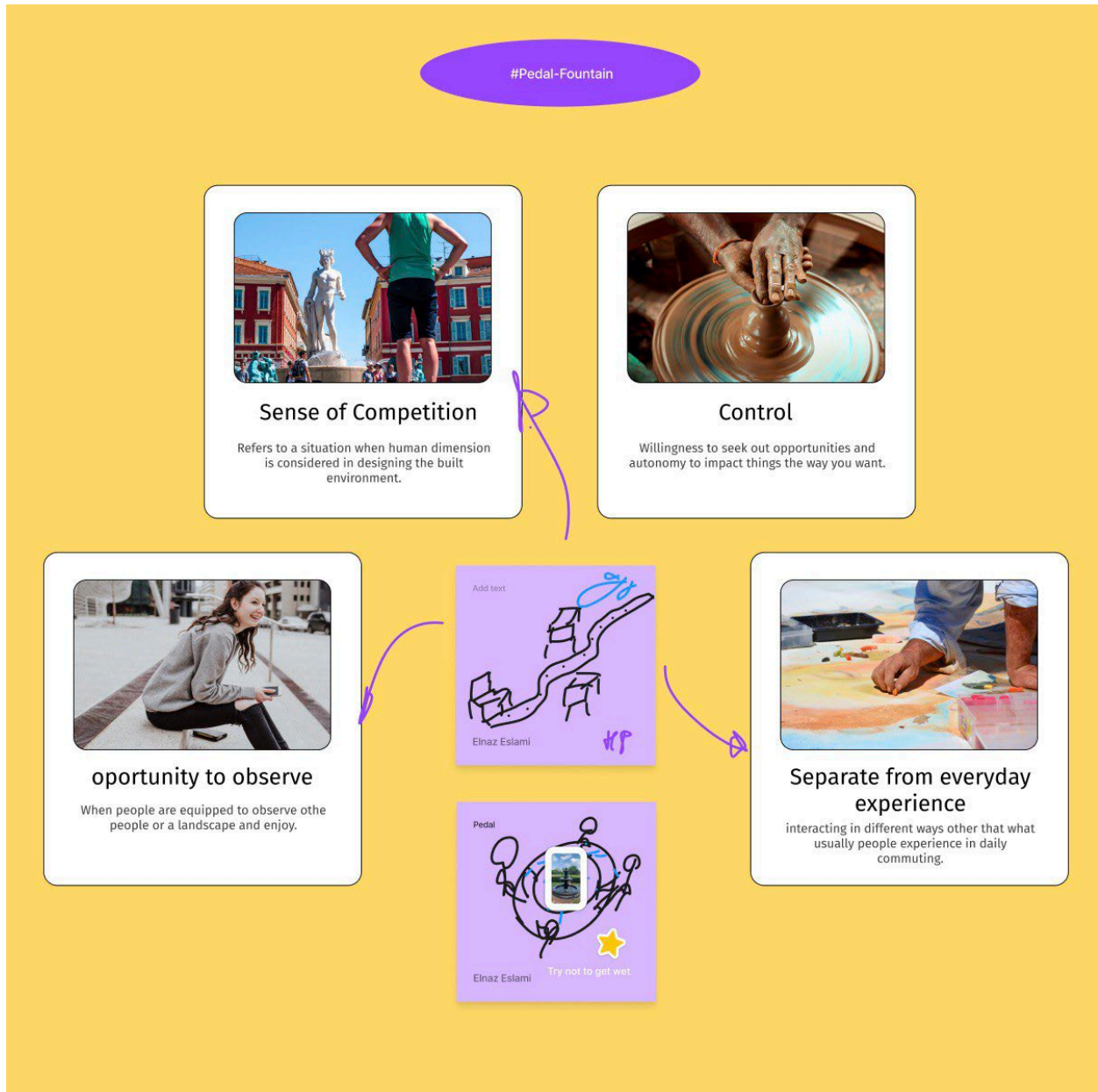


Figure 28: Third group poster made in Figjam

Therefore, in this concept, participants didn't use any of the technology cards and designed a concept that is based on the mechanical movement of pedalling suggested by participant E. Afterwards, participant F chose the domain card of 'sense of competition' since he found it relevant to the act of pedalling, sports contests and physical activity. They played with these two concepts in addition to the domain card of 'Control' (Figure 28) and sketched out the "Pedal

Fountain" (figure 29) installation in which people sit around a water fountain. They embedded a pair of pedals in front of each seat and envisioned that the water sprinkles as users step on it, however, the other user in the front seat should also pedalling to repel the water splash back in the opposite direction to avoid getting wet.

The use case they mentioned:

P(F): this can turn into a group activity when people sit on different sides of the water fountain and work together to beat a group in front of them.

P(E): it is really exciting and easy to build but only usable during the summertime. People definitely don't want to get wet in winter...



Figure 29: Pedal Fountain, Third group co-designed concept

Fourth Group

In the last workshop, both of the participants are from an engineering background; they were 30 and 32, living in Montreal, Canada. They both had a very hard time bouncing off their ideas, as they were constantly stuck and thought about feasibility of them, which blocked their creativity.

After ten minutes of presenting the inspiration cards, when they didn't make any progress, I decided to use an ideation technique called *Crazy Eight*, which is a fast-sketching exercise that challenges people to outline eight design concepts in eight minutes. In this technique, the time constraint helps avoid overthinking and pushes people to come up with more ideas. I put eight alarms for every one minute, and we should switch to the next concept when it rang. It was quite a success as they could each develop around 5 concepts. Afterwards, participants described their ideas, and they selected three of them to further develop. The following concept is the one we all voted as the most playful and interactive concept. They called it "Global Sphere". Once again, the initial idea was sprung from an external source of inspiration.

P(G): I had seen an installation like a mirrored pipe which connected two different cities, like someone in one city shakes hands and the other people could see them in the second city! We can make this idea high-tech.

P(H) selected a technology card of 'Adobe Interactive Wall': we can enhance the experience of this card and make it into a sphere.

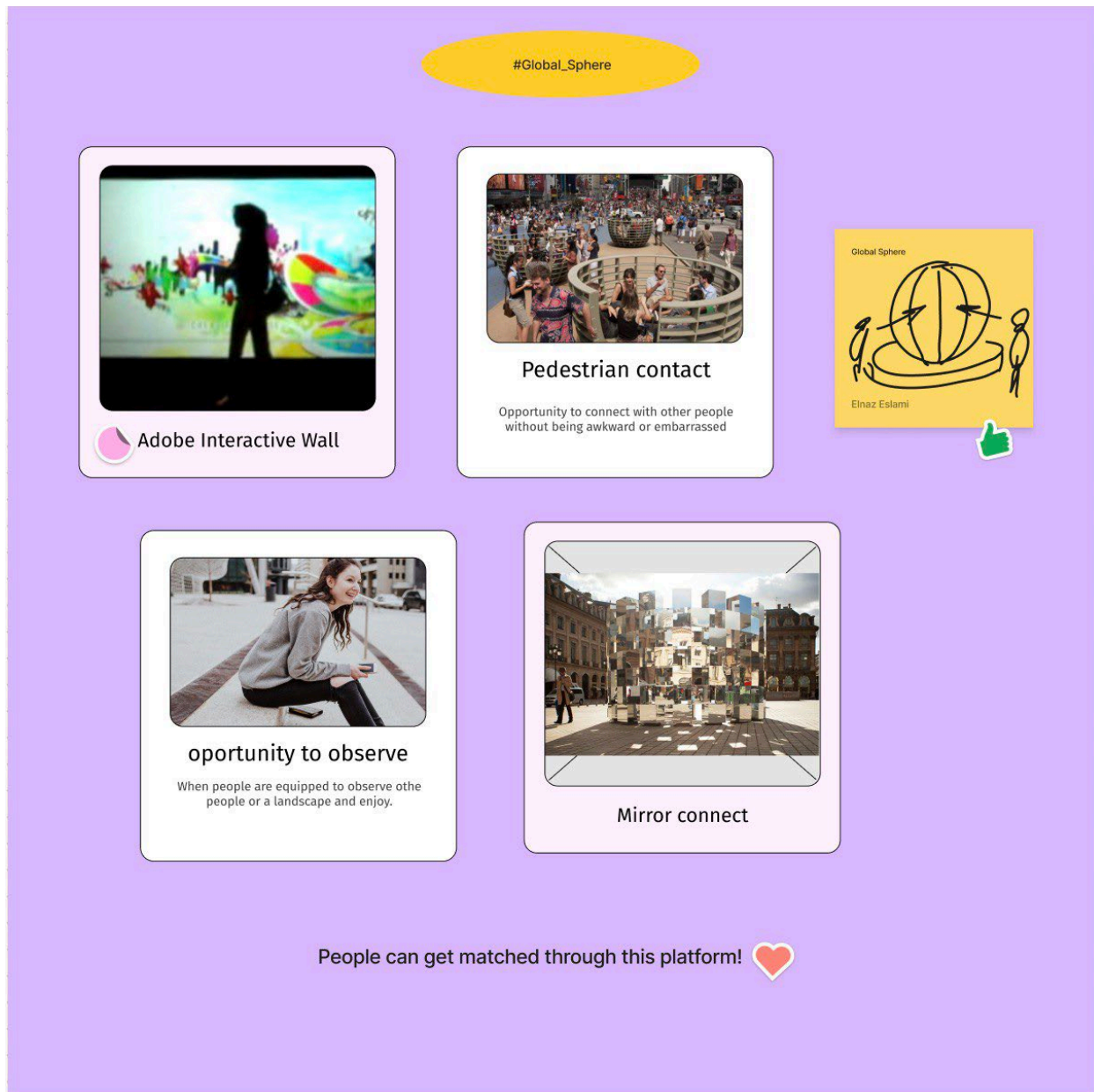


Figure 30: Fourth group poster made in Figjam

They picked the domain cards of ‘Pedestrian Contact’ and ‘Opportunity to Observe’ and combined their insights with the idea of connecting people who live far away (Figure 30). The ultimate concept is a big sphere that is comprised of several curved displays in which fixed cameras are live-streaming the surroundings and exporting it to the second sphere in another city. The idea is that a number of these spheres are installed in different cities around the world, and primarily they display images of the earth globe until someone gets close and touches a spot/city, so the whole sphere alters and displays the surroundings of its paired sphere in the selected city.

In this way, one person in Tokyo, can see and interact inaudibly with another person, in Paris, for instance (Figure 31).

The use cases of this concept that they mentioned:

P(H): This can be like an online dating platform through which people get matched accidentally with other people whom they have chosen their city on the sphere.

P(G): It's an awesome installation for those who are into long-distance relationships!



Figure 31: Global Sphere, Fourth group co-designed concept

Conclusion

When I began this thesis, I wished to conclude the research with a solid guideline of urban design strategies and typologies and help other practitioners to end up with a playful and interactive urban installation by following it. To date, I'm not sure about the possibility of such a resolution and how ambitious it was, but the concreteness and scope of such an objective were deterring me from moving forward. The major bounce in my project occurred when I learned about Victor Papanek's attitudes regarding the nature of design:

“Design is a problem-solving activity and can never, by definition, yield the one right answer: it will always produce an infinite number of answers, some “righter” and some “wronger”. “The rightness” of any design solution will depend on the meaning with which we invest the arrangement.” (Papanek, 1985).

As a consequence, I moved my focus from the project's outcomes to the process of my practice to experiment with different approaches, reflect on them and simultaneously learn from my experience. I started to see the project as it has multiple entry points, and I had the occasion to study new aspects through each one. For example, most of the key features that I learned through site observations, focus groups and narrative writing activities were previously proposed by scholars in the literature review. Whereas learning about urban design qualities through empirical processes, firstly, heightened my knowledge in this field, and secondly, later in participatory workshops, it helped me to address the lack of ideation tools through designing tailor-made co-design activities based on my user research findings.

In addition, as a workshop facilitator, transferring the attitude of focusing on the process rather than the result to participants, was an important achievement for me. Since the participants as well become the most productive when they could disregard the feasibility of their ideas and position themselves as the end-users per se. Whereas, trying to work out their designer or engineering muscles urged them to concentrate on the end product which blocked their creativity. Consequently, in every session, I reminded them that the aim of this workshop is not designing concepts which are fully practicable with current technology, but what matters is the process and how you explore and approach different concepts.

In this project, I took an interventionist approach to explore the creative process of co-designing ludic urban installations. Through a form of online participatory process citizens got involved socially and materially to collaborate in speculating the configuration of their own environment. The following are the major reflection on the project outcomes and the process in reference to the guiding principles underpinning the participatory design approaches which are described in the literature review.

In accordance with the notion of equalizing power relations, the participatory workshops may have helped the participants to value lively cities that are able to evoke social cohesion. For example, learning about the notions of interactivity and the effort for its implementation to encourage people to engage with an installation, can change the way they formerly viewed ludic installations and in general all city's interventions. Additionally, by helping people to change the way they might interact with an installation, they can instantly realize its potential for delighting people and perhaps they remember what they learned during the workshops to analyze the interactivity components or how it can be improved. Consequently, in some cases, this awareness might lead them to behave more responsibly when interacting with a city installation. This standpoint reconciles with the current endeavour for transforming situations to make better futures.

Moreover, the situated action as another PD principle was exquisitely addressed through the creation of participatory tools and activities. Since there is no universal process in participatory practices that can be transferred from one project to another, the activities in this research were tailored to user research and empirical studies. Although due to the Covid situation I had to pivot and rethink some events, the users' inputs were studied and crafted to suit the project context. Furthermore, mutual learning as a specific consequence of PD was accomplished through the first session of the workshops, when I attempted to subtly educate users about the properties of existing urban installations and provided the opportunity for them to discuss them in a focus group.

Lastly, in terms of the concept of "design by doing", which pointed to a central fallacy that frequently used to occur in the field of HCI, stemming from how designers thought users might think. Whereas PD involves making something tangible and concrete. Although "design-by-doing" through extensive use of material mock-ups and prototypes in a physical setting might

probably have more to offer compared to the online environment, the mediums and conventions that were used for running these workshops proved to be useful. The graphic design, plugins and tools provided by Figjam were fun and interactive and in the end, users were completely familiar with this whiteboarding platform and some of them acknowledged that they would use it for their own projects in the future.

Nevertheless, there were some limitations associated with this project that I was skeptical about conducting participatory workshops since I wasn't able to recruit participants from the same neighbourhood, which made it impossible to co-design urban installations based on the properties of a single place. This limitation in the first session of the workshops resulted in hindering the desired sense of belonging among participants, whereby they should foster ownership and relate to the practice. Nevertheless, in the second session, their diverse living situations, different demographics and socio-cultural attributes led to exploring various ideas and enriched the developed concepts. This was followed by designing transferrable ludic interventions that are not customized for a single local culture, climate, and other specific urban needs. Additionally, the workshops provided context to reflect on envisioned co-designed concepts, the challenges, group dynamics and rightness of each activity based on the level of engagement and the outcomes.

Although some sort of hesitation was observed in participants' impressions about the effectiveness of their contribution; during the second session of the workshops, they became more confident when they understood that their inputs were appreciated and incorporated into domain cards. In this regard, during the crit session in April 2021, I received a comment about participants' gains from the workshops which as well needed further inspection. Therefore, at the end of the sessions, I asked users how do they feel about the workshops on the whole? What worked well and what can be improved? All the participants whose teammate was from another country, in the second and fourth group, stated valuing the intercultural side of the experience, that they could mutually provide feedback to each other, and share and learn about their perspectives. Furthermore, the majority of the participants mentioned that when they learned about the project's goals at the beginning of the workshop, we stressed out and we weren't sure if we could be helpful, as we didn't consider ourselves creative. However, in the end, they seemed accomplished and enjoyed earning recognition for their contribution and making their

perspectives understood by me and their teammate. Overall, they all appeared to have fun using playful Figjam tools, exploring ideas, seeing their concepts visualized by my friend, and discussing their point of view.

It worked!

During the fourth and last workshop in April 2021, when I found myself more comfortable facilitating the session, we co-designed the concept of Global Sphere, which directly aimed to facilitate people interaction who live far away. A couple of months later in June 2020, a group of designers developed an installation called the ‘Portal’ which is very similar to the Global Sphere connecting Lithuania to Poland (Figure 32). The only difference is that the Portal shape is like a 2D circle which is easier to execute. In a very short time, Portal became very popular and currently is constantly being relocated to different cities in Europe. This coincidence was very pleasing to us that despite all the shortcomings, the activities and facilitation proved to be leading in the right direction.



Figure 32: The Portal, Interactive urban installation

To conclude, the way I carried out this project is very specific to my perspective and how I reflected on different elements. Someone else would review the same design principles and end

up with completely different concepts and utilize other ways of involving users. As I mentioned earlier, the evaluation of the outcome is coupled with the process one might go through. As urban planners in terms of applying participatory practices tend to give users commentary roles on what has been already finalized, thus, I found very few studies in the literature to involve users in the scale of urban design and particularly in the very beginning stages of a project. I hope reading through this dissertation would help other practitioners realize the importance of the issue and its potential for improving social interaction through playful interventions in public spaces.

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