Supporting urban innovators in framing their capacity-building journey

Master thesis

**Supporting urban innovators
in framing their capacity-building journey**

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Author

Alberto Magni
MSc. Design for Interaction
Faculty of Industrial Design Engineering
Delft University of Technology

Graduation committee

Chair | Dr I.J. Mulder
Department of Human-Centered Design - Design Conceptualisation and Communication
Faculty of Industrial Design Engineering
Delft University of Technology

Mentor | Ir. A. Calderón González
Department of Human-Centered Design - Design Conceptualisation and Communication
Faculty of Industrial Design Engineering
Delft University of Technology

In collaboration with

Designscapes
Building Capacity for Design enabled Innovation in Urban Environments

Participatory City Making Lab (PCM)
Faculty of Industrial Design Engineering
Delft University of Technology

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Enjoy the read.

Executive summary

The current project started with the intention of exploring how design could support initiatives in their complex challenges trying to bring innovation in cities. The scale and complexity of such societal challenges, force urban innovators to constantly adapt and learn, developing new capabilities that can help them succeed in a multi-level process that forces them to create valuable propositions for several actors in the system. The opportunity for the current project was seen in exploring how design could be used to support these initiatives in developing their own capacity building process throughout their complex challenge of embedding innovation in cities. The goal of the project is, in particular, to investigate how to design a methodology that supports urban innovators in framing their capacity building steps, in order to foster their continuous development of capabilities for their innovation processes. After initial explorations through theories on transdisciplinary and reflective approaches, combined with designed interventions with master students, a clearer research direction has been identified to answer the following research question; How can a reflective tool enable urban innovators in developing their own Designscapes capacity building trajectory in order to facilitate continuous improvement and diffusion of capabilities? The project takes a research through design approach, articulated in five iterative design interventions. During the interventions, prototypes are designed and evaluated with urban innovators from Designscapes project, leading to the final proposal of a reflective tool for DEI initiatives. Through five iterations, insights are generated regarding how reflective processes can better facilitate the identification of capacity building needs in DEI projects. Simultaneously, each intervention informed as well the requirements for the design of the reflective tool as final outcome of this project. The final result of the project, a reflective tool in support of DEI initiatives' capacity building journeys, contributes to facilitate urban innovators in embracing a reflective approach in carrying out their projects and identifying new capabilities they need to develop to succeed in them. The final result still has opportunities for improvement and further research is seen as necessary for its implementation in real context constraints of initiatives projects.

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1. Introduction to the project

This chapter introduces the project providing an overview of the context from which it took shape and illustrates the main stakeholders involved in it. The chapter begins describing the overall context of Design Enabled Innovation (DEI) in cities, continuing with the European project Designscapes and DEI initiatives participating in it. It concludes introducing the project assignment, detailing the aim of the current design research.

We find ourselves in a complex reality in which society serves more and more as a laboratory for experimenting with new ways to tackle so-called wicked problems (Rittel and Webber, 1973). Social innovation initiatives are showing a way to embrace this complexity through hyperlocal projects, emerging especially in urban contexts. When capable of pushing their solutions outside of the boundaries of small niches, these initiatives can potentially bring innovation to a more systemic level, implementing it in a larger context of a city or even scaling beyond it, contributing to transitions towards sustainable futures. The development and embedment of an innovative solution at a systemic level may result however quite complex, as they require the creation of significant value for a multitude of different actors at multiple levels. From the direct users of a product or service to the authorities regulating norms and laws, to the broader market of stakeholders that may consider the adoption of the same innovation, valuable proposals must be in place for them to embrace and adopt an innovative solution.

Design capabilities are considered a fundamental enabler of innovation processes and especially useful in the complex process of adaptation and value creation that is required for the systemic embedment of an innovative solution.
The potential of Design enabled innovation (DEI) in tackling widespread global challenges has recently drawn more and more attention. At a European level, projects such as Designscapes were initiated to investigate more in-depth on how to effectively support the enhancement of innovation. Designscapes project supports a number of selected initiatives tackling societal issues in different cities around Europe and investigates what these initiatives are or must be capable of, to successfully embed their innovation. This to create a capacity building program for DEI initiatives at European level, fed by initiatives' self-reflection and self-evaluation of what they consider most meaningful capabilities required to succeed in such projects.

With the present graduation project, I take the opportunity to contribute to the aim of Designscapes and explore how to support DEI initiatives in identifying autonomously their capacity building needs. More precisely, I focus on researching a methodology that can facilitate urban innovators participating in Designscapes programme in actively reflecting, seeking and identifying the capabilities that they may need to develop to succeed in their projects.

The next section will detail the context of the project introducing the overall background topic of interest, Design Enabled Innovation in urban contexts, and afterwards presenting the relevant stakeholders involved in this project. The chapter will conclude presenting the assignment defined for this project and its main objectives.

1.1 Context

Defining a specific context for the setup and development of a design and research project is a fundamental aspect since it allows to narrow down the focus on specific situations and simultaneously link the research and design process to a more holistic overview. For the present project, the selected context is Design Enabled Innovation at a European level. The variety of initiatives within this context gives the possibility to balance the focus of the project between more peculiar aspects of innovators' contextual practices, with a more encompassing perspective of the general characteristics of DEI projects at European level. More specifically, the users for the current project are urban innovators running DEI initiatives that are selected within the European project Designscapes and its capacity building programme. The collaboration with Designscapes gives the possibility to enter in direct contact with a diverse array of practitioners and projects in the field of Design Enabled Innovation, giving the chance of gaining more empirical knowledge on what carrying out such projects means and entails. Moreover, the direct involvement of innovators in the research activities will give the chance to confront and enrich more theoretical notions, such as capabilities and reflection, with the practical experience of innovators and investigate more specifically how these factors play a role in the professional everyday practice of innovation.

This graduation project takes shape as a collaboration with the EU funded project Designscapes and addresses urban innovators and their DEI initiatives as users for this research. Moreover, this project is part of the Participatory City Making Lab, from Delft Design Labs in TU Delft. The following sections will elaborate more on describing the background context of this project, namely Design Enabled Innovation in urban contexts, and the involved stakeholders.

Design enabled innovation in the urban context

When talking about contexts where innovation can be generated, cities are considered one of the most promising ones. Cities are directly affected by most of the global crises, from sustainability issues to widespread societal problems. On the other hand, the challenges that cities have to face can be seen as great opportunities for innovation. Seeing it in this way, cities are in fact considered promising breeding grounds and laboratories for innovative solutions to experiment in response to such challenges, given to their rich and complex nature. Urban contexts indeed usually present a high density of resources, together with diverse actors and competences, which strongly contribute to their capacity to make innovation emerge. Moreover, cities' interconnected nature fosters continuous place-based interactions between the multitude of its different actors (Concilio & Tosoni, 2019), constituting an environment that is usually more responsive to innovation and capable of perpetually learning and adopting new solutions. These characteristics make cities, or urban environments, a dynamic context in which new ideas can be conceived and where processes towards systemic change and transition in local and global communities can be ignited (Concilio & Tosoni, 2019).

For an innovative solution to reach a systemic impact and generate positive transitions, the challenge is, however, to avoid that such a solution remains limited to small niches of users. This means being able to reach and create value for multiple actors at different levels of the system. In fact, "imagining, creating and developing these innovations requires the simultaneous consideration of different perspectives" (Concilio & Tosoni, 2019, p.4). These could be for example users adopting the service or product, but even organisations conveying the innovation to the market, which plays a role in linking it to the different stakeholders on a larger scale, and ultimately the society

as a whole. This means that innovators trying to bring change at a systemic level in an urban context will have to confront themselves with the different conditions that the city presents to them. These, be they political, infrastructural, organisational or societal, can make urban contexts more or less prone and capable of fostering and adopting change, either contrasting or facilitating the development of innovation processes (Puerari, De Koning, Mulder, Loorbach, 2017).

The responsiveness of cities to innovation processes and the need for engaging the different actors present in them force urban innovators to carry out increasingly complex processes when it comes to embedding their innovation in an urban context. Developing and implementing solutions in such complex contexts requires indeed a constant adaptation and evolution of the initial idea together with the context that needs to adopt it.
In this co-evolutive process, innovators' capability to sense the context and create value for a differentiated array of stakeholders plays then a crucial role in its adoption at a systemic level.

The role of design
in innovation processes

In this process of iterative value creation, negotiation and adaptation, design and design capabilities are seen as a fundamental enabler of innovation processes. Design has often been juxtaposed to innovation processes. Additionally, over time the focus of design has shifted from a mainly product-oriented perspective to an approach of interaction between service and consumers. In this new perspective, the value of the final design outputs is co-created with consumers, in an approach based on proposing possible valuable solutions that are shaped into final outputs through the interaction with consumers, usually through iterative processes of adjustment. Within the scenario of innovation processes in urban environments, design's role is seen

as one of "sensing the potentials for change and translating these into visions that can guide the innovative action" (Concilio, Cullen, Tosoni, 2019, p.93) throughout the different levels of complex systems such as cities.

In tackling complex societal challenges, design enabling function lies in its capability to identify opportunities and concretely propose valuable solutions according to different stakeholders, helping the innovation process reach different levels in the system. In this way it "represents a strategic resource for accelerating change processes by more effectively and more rapidly experimenting with responses to global challenges" (Concilio et al. 2019, p.94). In practice, design capabilities are then seen as a determinant ingredient when it comes to innovation processes, as "design and the use of design artefacts, sketches, visual representations or prototypes enable solutions to be embedded within specific urban contexts and is able to develop and work with them in order for them to be relevant in other contexts." (Concilio et al. 2019, p.92). As design capabilities represent a promising resource for radical change processes towards transition, more and more interest has been put on Design Enabled Innovation (DEI) projects and how to support them. This role is taken over by Designscapes project which was funded by the European Union, with the specific goal to better understand how to enhance and upscale such processes at a European level.

After describing the overall background context of the present project, the next sections will follow presenting the different stakeholders involved in it.

DESIGNSCAPES PROJECT
Investigating capabilities
required in DEI projects

As mentioned earlier, this project takes shape in collaboration with the European project Designscapes. Designscapes is a Horizon 2020 European action support project that aims at facilitating the enhancing, developing and upscaling of Design Enabled Innovation (DEI) in European cities. It was initiated with the intent of investigating the role of design in innovation processes addressing complex societal challenges and to understand what are the capabilities needed by DEI initiatives of urban innovators to develop and succeed in their challenge to bring innovations towards a systemic social and cultural change (https://designscapes.eu/ for more information).

Designscapes entails a capacity building programme that supports a number of selected DEI projects in three different stages of their maturity: 1) feasibility, when projects are validated as potential innovative ideas for their respective contexts, 2) development, where the initial project proposals are prototyped in the context to reach their embedment in an urban context, and 3) their scalability when projects are ready to expand to other cities.

At the same time, Designscapes works as a research project with the goal to understand how to effectively support the development of DEI initiatives and help them succeed in their innovation processes towards sustainable transitions.
Its research focuses then on investigating through these projects which are the capabilities that are meaningful for urban innovators in their challenges. Discovering what makes urban innovators more likely to succeed in embedding and scaling innovation, will inform Designscapes in the creation of what is the final outcomes of this research programme: a Training and guiding programme, developed and made openly accessible in support of future DEI initiatives in the form of Training Modules

and a Toolbox of Tools Instruments and Methodologies, based indeed on DEI capabilities. What Designscapes aims to achieve is to create learning journeys that initiators can self-define and undertake for the development of the capabilities that they think will support them in achieving their specific challenges. For the co-creation of Training modules and Toolbox, a self-reflection and evaluation of initiatives themselves are then fundamental on the side of initiatives and entail the evaluation and articulation of the capabilities that they require to carry out their DEI projects. Designscapes project represents a fundamental bridge for the current graduation assignment to have direct access to urban innovators and carry out with them the research activities for this project. Moreover, this graduation project represents an opportunity to contribute to Designscapes research goals by investigating how design can be applied to concretely support DEI in urban contexts.
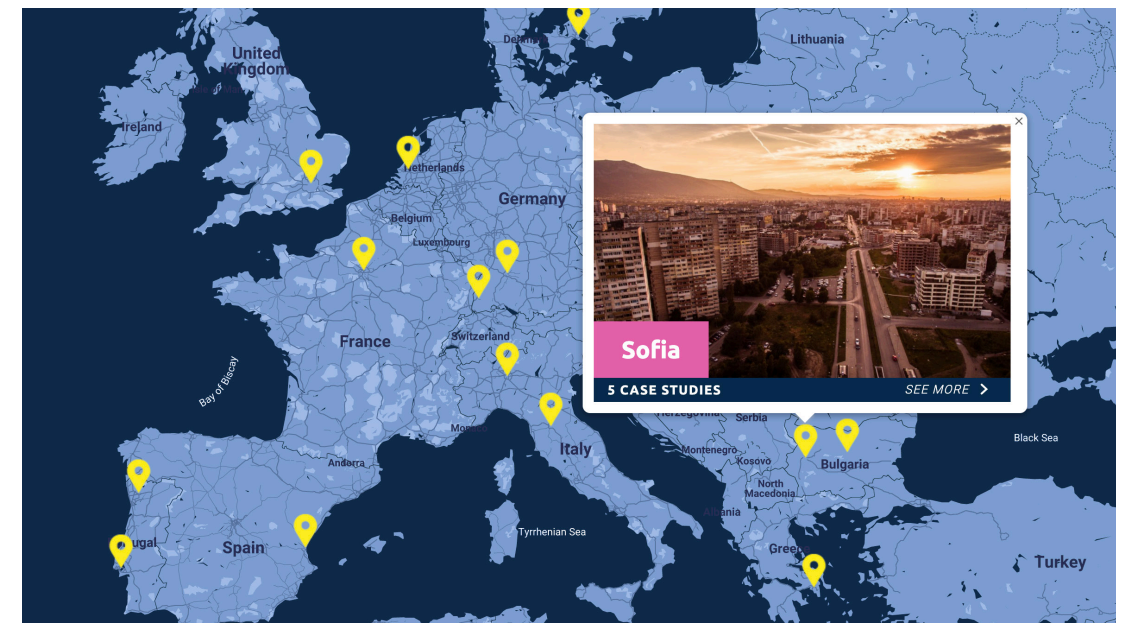

Fig. 1 - Screenshot from designscapes.eu showing the case studies of Designscapes project around Europe

DEI initiatives participating In designscapes

Designscapes project entails three open calls and selection rounds of a number of Design Enabled Innovation initiatives from cities all around Europe. The initiatives are all chosen as representative of innovative projects tackling complex societal challenges, that make use of a user-centred approach and of design capabilities (including design approaches, methods, tools) to carry out their projects. The urban innovators that run them are both professional designers and so-called diffuse designers (Manzini, 2015), individuals not formally trained in design but who show the adoption of design approaches and problem-solving capabilities in their approach to problems.

This graduation project takes place during the second call of Designscapes program, in which a number of initiatives were selected as promising in approaching the development phase of their innovation maturity process. The development phase entails the embedment of local innovations in the respective urban contexts. In the case of Designscapes selected initiatives, the urban contexts are medium and large European cities. In the development phase the interaction and relation with the actors, contextual factors and norms that regulate the respective urban contexts become the key to the success of these initial ideas. Prototyping and testing their innovative solutions, urban innovators are likely to find themselves learning about the context, stretching their initial ideas, adjusting and negotiating with different actors at different levels (eg. users, local authorities, other stakeholders etc.) in order to embed successfully their innovative products or services in the urban context. The successful embedment of innovative solutions in an urban context will for sure require the use of urban innovators' design capabilities, meaning particular skills, methods and tools, as well as other additional capabilities that might reveal crucial for the successful embedment of their innovations in the context.

By designing for and with urban innovators in DEI initiatives selected by Designscapes, the aim is to investigate how design can effectively support DEI projects in self-develop their own capacity building journeys to more successfully succeed in their complex challenge towards transitions. To do this, the collaboration with Designscapes consortium is fundamental in establishing direct contact with urban innovators.

Participatory City Making Lab

A third stakeholder in this project is the Participatory City Making Lab (PCM), one of the Delft Design Labs at Industrial Design Engineering Faculty at TU Delft. The Lab's focus lies in the value of Participatory Design within urban contexts, and its objective is to coordinate projects aimed at exploring connections between grassroots initiatives in urban environments and public administrations (visit https://delftdesignlabs.org/ for more information). Being part of PCM Lab for the duration of this graduation project allows benefiting from a network of students and researchers interested in participatory design and innovation in urban contexts, making it possible to have a participatory design perspective in the research of this project.

After providing an overview of the project context and the stakeholders involved, the following section introduces the assignment and the related aims and objectives of this graduation.

1.2 The project assignment

As mentioned in the previous context section, DEI initiatives are likely to face increasing complexity when it comes to the development stage of their innovation. In fact, urban innovators are likely to face what could be new challenges in operating at a bigger scale and interacting with a multitude of actors. This may require them to develop as well new needed capabilities to successfully establish their innovation in their respective urban contexts. Increasing importance is then on the ability of initiatives to identify what may be possible capabilities they need to stretch and develop, in order to be more prepared in facing this challenge. On Designscapes side, the development phase of DEI projects is especially interesting as it may provide precious insights on what are the crucial capabilities that innovators may need support with, informing the development of a meaningful capacity building program for such initiatives.

These circumstances open up the opportunity to explore a way to support Designscapes, but more importantly urban innovators, in continuously acquiring and diffusing capabilities useful in achieving DEI challenges.

The assignment for this project is then articulated as follows:

By focusing on a methodology that could help urban innovators more consciously frame the capacity-building steps necessary to succeed in their projects, the opportunity is to foster a more self-aware, proactive attitude of initiatives in learning capabilities, that is likely to help DEI projects self-develop even after and without the support of Designscapes program. A more conscious, reflective, and self-assessing attitude has indeed the potential of benefitting initiatives throughout their whole journey towards systemic change, by facilitating them in learning and adapting in the interaction with the increasingly complex context that they will need to face. Moreover, a design project focusing on identifying capabilities needed in DEI projects can eventually contribute in a significant way to Designscapes research and interest, providing useful insights on the needs of urban innovators and informing the capacity building offer they aim to create for DEI initiatives at European level.

Chapter 1 detailed the context of this project and presented its assignment. The second chapter will describe the selection of methods and activities that form the approach chosen for the execution of the project objectives.

Design a methodology that enables urban innovators in developing their own Designscapes capacity building trajectory, in order to facilitate continuous improvement and diffusion of capabilities.

2. Approach

In Chapter 1, the context, origins and goals of this project were described. The present chapter focuses on describing how the project will be approached. It will illustrate the methodologies that are selected to form the approach tailored to the project objectives previously articulated, to conclude providing the structure of the process that will be followed.

2.1 Research questions

The previous chapter detailed the project's background, describing the context in which this project is carried out, the stakeholders entailed and finally articulating its assignment. The main objective, as described in Section 1.2, is to design a methodology that could support DEI initiatives in defining the capabilities that urban innovators need to develop in order to be successful in their respective projects. The initial goal raises the need to investigate how to facilitate urban innovators in reflecting and identifying their capacity building steps.

The research question formulated in order to accomplish the project's objective stated above is:

How can urban innovators be facilitated in identifying the capabilities that they need to develop for their DEI projects?

As mentioned at the end of Section 1.2, the opportunity for this project is as well to contribute to Designscapes research interest in understanding which capabilities are required by urban innovators in their DEI projects, and in this way inform their elaboration of a tailored capacity-building programme. This opportunity derives from the aim of the interventions themselves, that in fact point at facilitating urban innovators in reflecting on, identifying and expressing capabilities they require in their project. With this chance, a second research topic is established for this project as the understanding of DEI processes and projects including, in line with Designscapes research interests, what these projects entail in terms of capabilities and which of these are likely to be stretched for urban innovators.

The second research question formulated for this project is then:

What are the capabilities that urban innovators need to develop to carry out their DEI projects?

2.2 Research approach

In order to answer the main research question formulated, methodologies were selected to constitute and structure the approach for the project, with the goal of investigating how urban innovators can better reflect and identify the capabilities necessary for their projects. Such a reflective process is not expected to be immediately observable and easy to grasp, raising the need for direct involvement of DEI initiatives given the specificity of their projects. Therefore, the main approach chosen for this project is a Research Through Design (RTD) approach (Stappers & Giaccardi, 2018) combined with an iterative approach, where iterations of prototyped interventions will be used as formative to the generation of knowledge.

RTD is a research approach that utilises artefacts to trigger participants' reactions, behaviours and other otherwise non-observable phenomena, enabling the researcher to capture insights and create new knowledge. In this project especially, taking an RTD approach results valuable in actively engage urban innovators and trigger them to reflect on their capacity building needs.

2.3 Project structure

The project is structured in three main phases. The first cycle is oriented towards the identification of a valuable research direction, whereas the second one aims at gaining a more contextual understanding through the first contact with initiatives. The third cycle focuses finally on the development of the methodology until the proposal and evaluation of the final design proposal for this project. The following paragraphs detail the three phases of the project, which are additionally visually represented in Fig.2 (p.30).

Phase 1
Identification of the research direction

The project begins with a first phase aimed at exploring potential opportunities on how to orient the reflection of urban innovators in identifying capabilities for their projects.
The first activity carried out is a literature review on Design enabled Innovation to obtain an overview of the background topic of the project. The research then follows with the exploration of research opportunities to investigate the main research question of this project How can urban innovators be facilitated in identifying the capabilities that they need to develop for their DEI projects? The opportunities found will be then confronted with the project assignment and goals, to evaluate whether they may fruitfully guide the next phase of research interventions with DEI initiatives. To investigate each research opportunity, a first literature review is selected as a methodology to navigate existing theory and identify a theoretical background that can be relevant to further investigate the research question.

The principles found in the literature will then inform a more concrete investigation through iterations of designerly interventions in line with an RTD approach described above

(Section 2.2). Each of these interventions will feature prototype settings to actively engage participants and generate knowledge. Master students from Industrial Design Engineering faculty, at TU Delft, will be involved in this initial exploratory phase, in the perspective of gaining initial insights for the following investigations with DEI initiatives from Designscapes programme. The first cycle will conclude with the identification of a relevant research direction for the development of the methodology in support of urban innovators' capacity building process.

Phase 2 - Getting to know urban innovators

Once a clear direction for the research is identified, the second step of the project will be to set the first contact with the actual users of this project, namely urban innovators participating in Designscapes. This will give a chance to better understand what activities and processes their projects entail and, in this way, understand what will be the general content of the reflections and activities that will further be carried out to develop the final methodology. Simultaneously, this first contact with initiatives will give the chance to experiment in a semi-structured way how to set up a suitable reflective setting with urban innovators and initially inform the basic requirements for the prototyped interventions to be carried out with them afterwards, in the third phase of the research. Qualitative research methods, such as semi-structured interviews, will be utilised as a more flexible, unstructured way to carry out interventions and initiate reflections with urban innovators, while also gathering useful data to answer the research question.
The insights from the interviews with urban innovators will then be gathered to inform the structuring of design interventions in the third cycle of this research.

Phase 3 - Development of the reflective tool

A third research phase will then focus on the actual experimentation of how reflective processes can be best structured to facilitate urban innovators in framing their capacity building needs, with the goal of reaching a final design proposal of a tool for initiatives. In this phase, an RTD approach will be used, as described in Section 2.2, combined with an iterative approach including a total of five iterations. Each iteration will involve the use of concept prototyping to create a designerly artefact that will be utilised during sessions with urban innovators and that will serve as a structure for the reflective process investigated in each intervention. A total of five iterations will be carried out.
From each intervention, valuable insights and data will be gathered through qualitative research methods (see Section 2.4) and inform knowledge of the main research question. Simultaneously, the iterative approach will be utilised as well to inform the design proposal of a tool for urban innovators. Along the process envisioned, in fact, each intervention will investigate as well a design question, in order to gain insights on the requirements of the design. The series of interventions will then be utilised incrementally so that each iteration will consequently inform the design of the next one, until the final design of a tool at the end of the fifth iteration.

To conclude the research, a content analysis of both the interviews and the interventions with urban innovators will be carried out to gather the main insights on DEI projects and capabilities to inform the research of Designscapes investigated with the second research question mentioned in this chapter *What are the capabilities that urban innovators need to develop to carry out their DEI projects?*. This analysis and its results will be described in Chapter 7 in the conclusions from this project.

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Fig. 2 - Overview of the project structure and research activities
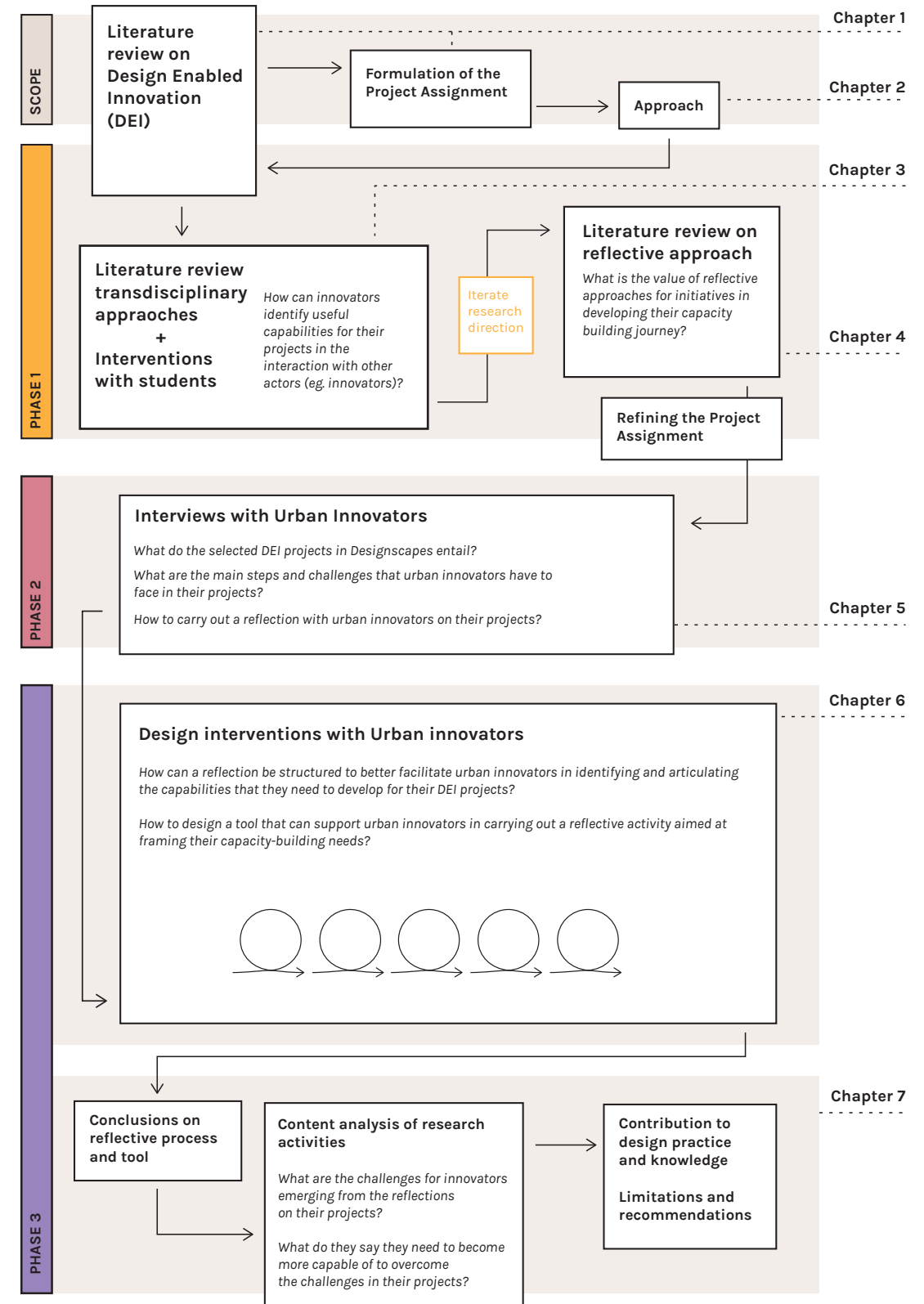
2.4 Methodology

After describing the overall approach and structure of the project, the present section follows with the main methodologies utilised for the project research activities as well as the ones dedicated to collect data from them.

Concept prototyping

Developing a prototype is a fundamental aspect of carrying out a Research Through Design approach in this project. As previously explained in Section 2.2, the interaction of participants with prototypes makes their behaviours observable by the researcher. In this project, the use of a prototype will be useful in triggering and structuring a reflection with urban innovators, providing learnings and insights to both the research and design question, and showing the knowledge gaps or limitations in the development of the methodology. Regarding this latter, in the iterative process entailed in this project, a prototype is as well essential for the evaluation of the concept and for the generation of requirements that lead to the development of a final design proposal.

Sessions

Reflective setups, in the form of sessions with participants, most of which will be held online, are used in this project as a method to host and carry out the research activities with urban innovators from Designscapes. Managing to have participants attention and intention on digging deeper into their capabilities they may require for their projects requires the setting of more reflective conversations, dialogues and activities. Moreover, within the context of an online session, participants will have the possibility to interact with the different interventions above mentioned

while giving the possibility to me as a researcher to gather data on their reactions through observations, recording and feedback interviews. The setup of sessions will also be informative of the possible contextual use of the methodology developed, as it is imagined that the final reflective tool will likely be utilised by initiatives in a workshop/session setting in their practice.

Semi-structured interviews

Semi-structured interviews are also utilised in this project as a research methodology. In the second cycle of this project, this methodology is particularly relevant given the aim of getting to know urban innovators from Designscapes and start experimenting with them how to facilitate them identify the needed capabilities for their projects. Semi-structured interviews give in fact the necessary flexibility to the conversations with initiatives members. As more implicit knowledge of participants may be valuable for the identification of their lacking capabilities, facilitating more open discussions with the possibility to free-ride in deeper conversations and prompting participants with questions outside a strict interviews guide becomes relevant to the objectives of this project.

Data collection methods

A series of data collection methods are also selected in order to have a holistic picture of the results from the different interventions carried out in the project.

Observation
During the interventions with participants, observations will be made and notes will be taken of what people do and how they interact with the provided tools and between each other. Observations will be led by the research and design questions formulated at the beginning of each iteration.

Recording
For every session, I will record video or audio with participants' consent. This material will give the chance to go back to specific points in the session that could not be captured through observations and might be relevant to learnings regarding each intervention.

Feedback interviews
The methodologies before mentioned complement the insights that derive as a direct expression from participants. At the end of each intervention, feedback interviews will be utilised to ask participants what they think about the interventions proposed.

The specific set-up of the interventions and of the interviews with participants are not mentioned in this chapter. They will be extensively described in correspondence of each activity throughout the report.

2.5 Structure of the report

The aim of this report is to present the mains steps, their rationale, intermediate results and insights that gradually were obtained to reach the final concept and results of this project. Figure 2 (page 31) shows the main activities of the project and the chapters where they can be found

Chapter 1 served to give an introduction to the project, describing the origins and goals of this project, detailing the context tackled as well as the stakeholders involved. It concluded articulating the main assignment for the project.

Chapter 2 just described the approach chosen to carry out this graduation project. It showed the research questions that guide the structuring and approach chosen for its execution to reach the desired objectives.

The third chapter will describe the exploration of the first research direction identified for this project, namely the opportunity for urban innovators to identify capabilities to acquire from the interaction with other innovators in the community or actors in their context. The chapter will illustrate the main activities carried out to investigate such research direction, concluding with insights and reflection that brought to the formulation of a second research direction., described in the following chapter.

Chapter 4, indeed, proceeds with the investigation of reflective approaches for urban innovators, identified as a second and more relevant research direction for the development of the final methodology. The chapter discusses the literature found on the topic and concludes with the discussion on the relevance of reflective attitude and approach for the users of this project.

The second cycle of this research is described in Chapter 5, where the first contact with urban innovators is made in order to learn from them about what DEI project entails and in the meanwhile experiment and investigate the requirements for setting up reflective sessions with them.

Chapter 6 illustrates the third cycle of this research. It contains and describes the five RTD interventions carried out with urban innovators that will lead to the development of a reflective methodology, concluding with the final proposal of a tool.

The tool proposed, together with the conclusions from this research, are discussed in Chapter 7. In this chapter, a reflection on the findings and the original research question and assignment is done, in order to evaluate the final outcomes of this project and propose recommendations for further research. Moreover, the content of the interventions carried out with urban innovators in the previous chapter will serve to gain important knowledge on DEI capabilities required by innovators. This knowledge, as a contribution to Designscapes research, will also be presented in the seventh chapter.

The last and eighth chapter of this report involves a personal reflection on the project, where personal ambitions will be discussed together with considerations on the experience of this graduation project.

This second chapter illustrated extensively the selected methodologies and approaches for the present graduation project, by articulating their relevance to the project and the motivation for choosing them. In the following four chapters, the report will describe the research phases of this project and the activities carried out. To start with, Chapter 3 will show the exploration of the first research direction for this project, together with the activities carried out to investigate and reglect on its relevance to the goals of the project.

3. Exploring a first research direction

As mentioned in the previous chapter the first research phase planned for this project entails the identification of a research direction upon which the further development of the final methodology for initiatives can be followed. The present chapter presents the exploration of the initial research direction identified for this project. Interventions with students are done to investigate its practical relevance for the project aims. These will conclude with a final reflection that will motivate the formulation of a second research direction and the refinement of the original assignment of the project

3.1 Framing useful capabilities to learn from others

To frame a first research direction for this project, the first step taken is a reflection on the original assignment described in Section 1.2. The assignment for this project has the goal of elaborating a methodology to support Designscapes participants in identifying useful capabilities for their projects. Moreover, the purpose of developing this methodology is to promote and facilitate the continuous learning and acquisition of new capabilities from urban innovators, in order to become more capable of carrying out their projects. Additionally, DEI processes as described in Chapter 1 of this report show how the process of embedding innovation in a complex context such as an urban environment usually entails a process of constant co-evolution, an iterative adaptation and learning process with and from the context (Concilio & Tosoni, 2019), in which new knowledge and new ways of doing are likely to be required in the interaction with different actors of the context.

Reflecting on these two aspects, the opportunity is seen to initially direct the research towards exploring ways to facilitate the initiatives in Designscapes in continuously learning new capabilities useful to their projects. More specifically, supporting urban innovators' continuous learning process through the interaction with the different actors present in the context in which they would find themselves working, hence continuously learning with the context. This is seen in line with the intention of triggering a self-development attitude discussed in the assignment of the project (Section 1.2), that would push urban innovators to continuously acquire new capabilities in their work in the context, even after the capacity building programme of Designscapes would be over. In fact, the rich community of Designscapes initiatives and the possibility of an online platform to put them in contact provided by the programme itself,

constitute a promising context for experimenting approaches in this direction of helping initiatives identify useful capabilities from each other's projects and experiences. Once the program would be over, these approaches and learning attitude developed would remain to urban innovators as useful tools to continuously seek and find learning opportunities in their respective contexts.

The following research questions are generated to lead the research activities in this phase:

How can innovators identify useful capabilities for their projects in the interaction with other actors (e.g. innovators)?

What approaches can best support urban innovators in doing this?

As mentioned, these research questions guided the research activities in this phase. The next sections of this chapter illustrate these latter, starting from a literature review and following with interventions with IDE Master students from TU Delft carried out to gain the first insights on a methodology that could help innovators identify relevant capabilities for their projects.

3.2 Transdisciplinary learning and mixing of practices

This initial research phase started with a literature review with the aim of finding approaches potentially helpful in identifying valuable learning opportunities from others, more specifically from other practices, as it was imagined that different actors in the urban contexts of initiatives would come in contact with their innovation processes.

When looking at unveiling the value of different practices and trigger learning processes among different practitioners, disciplines or expertise, transdisciplinary approaches were found particularly inspiring. In particular, as they promote the generation of new knowledge aimed at tackling real-world challenges, such as the ones urban innovators are dealing with in their projects, transdisciplinary approaches seemed valuable in regards to the context of the Designscapes initiatives' community. Moreover, such processes do so from the perspective of different disciplines and expertise, valuing both disciplinary perspectives and other knowledge types like local and practical knowledge (Sholz & Steiner, 2015 cited in Baumber et al, 2019), such as one that is likely to be relevant in the respective urban contexts of each initiative.

Additionally, to the theory behind transdisciplinary approaches, the literature research helped to discover an interesting design-based approach to facilitate transdisciplinary innovation, proposed by Kees Dorst (2018). The author describes a process similar to the framing process utilised by designers in identifying solutions to their problems but applying it as a way to facilitate the exchange of knowledge among different practitioners.

The findings from the literature bring then to carry out interventions with students, with the intent of evaluating the theoretical approach proposed by Dorst just described, as a way to facilitate students in identifying relevant learning opportunities from each other's practices.

3.3 Explorations with IDE Master students

In order to evaluate whether the theoretical model found in literature could be valuable for the project aims, interventions are set up involving Master students from the Industrial Design Engineering faculty of TU Delft. Master students are considered valuable substitutes of the actual users of this project since both they and urban innovators shared the aim of purposefully learning and acquiring new capabilities with the intent of accomplishing their design projects successfully. The opportunity of carrying out small design interventions with students would help experiment insights from the literature on one hand. On the other, it would function as a useful test-bed generating insight to inform further RTD interventions to carry out with initiatives from Designscapes program. The interventions with students are described below and summarized in Fig. 3. For a more detailed description and structure of these experiments, see Appendix B.

Applying Dorst's model of deconstructing practices

The theoretical model proposed by Dorst (2018) served as inspiration for the first design interventions done with master students to explore approaches and processes that could better help to identify new capabilities. Conceptually this model suggests a process of abstraction from concrete actions

and methods utilised in different practices, to help different practitioners in unveiling the useful purposes and value underlying them. This, in the perspective that unveiling those principles would make it easier for different practitioners to spot the value of others' capabilities and approaches, and in this way help them to frame their own 'list' of desired capabilities to acquire. This first approach and related experiment is visualised in Fig. 3 The research questions leading this experiment to investigate how a process abstraction can result useful for students to identify and unveil useful learning opportunities in others. The experiment was carried out with a group of Master students from different faculties at TU Delft, in line with the intention of exploring a 'mixing' of practices.

The findings from the experiments didn't give a necessarily positive response to the research questions. In fact, it was found that simply abstracting didn't push students to seek learning opportunities from others even if it showed potentially useful in reaching a 'common ground'. The students were not however motivated to explore other's practices, instead forcefully abstracting somehow distracted them from the purpose of learning from others.

Mapping how students identify what is relevant for them to learn from others

After these findings, two more experiments follow with a completely different intention. Given the failed attempt of imposing an abstraction process through the previous approach, the goal to set up two more experiments is to investigate how two innovators spontaneously identify relevant capabilities to learn from others, in a two-person interaction. With this intent, the two following interventions are set to let students more freely dialogue with each other, only utilising support for visualising their thoughts (pictures of the setting can be seen in Fig.3) This,

1) Abstraction to facilitate mixing of practices
(inspired by Dorst, 2018)

RESEARCH QUESTIONS

How does abstracting help students unveil the underlying purpose and value of their own practices and hence capabilities?

How does abstracting help students to understand the value of an unknown practice from someone else's project/practice?

MAIN INSIGHTS

Abstraction helps students from different backgrounds relate to each other, but it does not necessarily lead to finding something useful to learn.

The activity of finding something useful to learn needs to be purposeful, forcefully abstracting may distract from the real purpose of learning from others.

Deconstructing own project to learn from different backgrounds
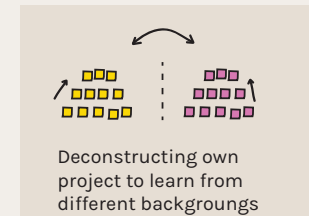
2) Investigate students' own process to identify relevant learning opportunities

1-1 dialogue on projects and experiences

1-1 dialogue on strategies used for a specific situation

RESEARCH QUESTIONS

How does abstracting help students unveil the underlying purpose and value of their own practices and hence capabilities?

How does abstracting help students to understand the value of an unknown practice from someone else's project/practice?
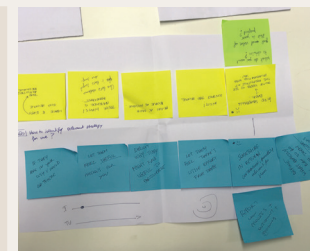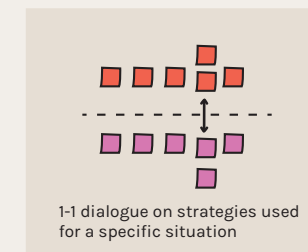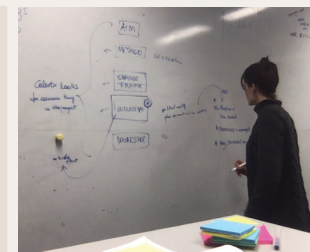
MAIN INSIGHTS

Comparison between the different small strategies to engage users helped to identify a 'matching'.

Steps with which one struggled with are seen as the main opportunity to learn from the other. Seek for common situations, problems, issues, desired effects. Then look for different approaches or solutions to them.

From abstract (effects) to concrete and specific (techniques) - How did you do that? Choosing something to learn (approach or technique) is mostly based on newness, but as well on previous negative experience with it.

Fig. 3 - Overview of the main explorations carried out with students

in order to subsequently map the process they followed and gain insights on what could be factors helping the process of identification of relevant capabilities to learn.

The two experiments are shown in Fig. 3 (previous page).

The figure shows the corresponding research questions of each experiment as well as the main approach that was evaluated.

A picture of each experiment shows the setting proposed to carry out the intervention and follows with the main insights gathered from each of them.

3.4 Main findings and takeaways

After carrying out the research activities with students, the insights drawn from the main experiments are gathered, clustered and presented here as follows:

Comparison and checklist
Comparing their experience with a task triggered the students to make a sort of checklist of the strategies used. Through this process, they identified more easily the similarities and differences between each other approaches and spotted new strategies that they could learn or remembering unsuccessful attempts.

Matching – "You managed, I didn't"
The students identified a learning opportunity when they found that the other student succeeded at a task they previously failed. This triggered a 'matching' between the two on a specific task, that then became the focus of the conversation and the path they followed to identify concrete relevant things to learn (e.g., potential capabilities).

Seeking for commonalities in situations, problems, goals. Then looking for different approaches or solutions to them.
Students first attempt was to look immediately for common ground (e.g., experience in a similar situation, or if they worked for similar goal etc). They 'clicked' when feeling that the other empathised or understood their specific struggle with something. From that moment on they sought for comparison to find differences in how those similar situations were approached in order to learn from them.

Abstraction brings commonalities and concreteness highlights differences.
The students usually started even from more abstract and broader effects that they were interested to achieve (e.g., community feeling, or mindset). The following question was always directed to make more specific and concrete the experience of the other student with the problem "How did you do that?", "What techniques did you use?", "Could you make an example?"

Takeaways for further activities

From the experiments with students, some key takeaways can be drawn that inform the research of a methodology to support the identifications of capabilities to learn. The need of identifying new capabilities to acquire seems strictly related to the identification of a challenging task, meaning something that was previously tried but not carried out successfully or something new that goes beyond what someone expects to be their capabilities. Moreover, what seems helping to identify something to learn is a comparison with others' past experiences, and how they concretely achieved successful effects that we also want for our projects. This process works similarly to a 'checklist' where one compares the strategies already known and utilised with the ones that the other person applied, to see which ones can be worth learning further.

Reflection on the findings from the interventions

The experiments carried out with students all showed, be this by the lacking of purposeful learning in the first attempt or in the more free dialogic setting experimented afterwards, that the stimulus to find a new capability to acquire came in students from the reflection on what they were not able to do yet, more than from just initially reflecting on what the others were capable of doing. In fact, students all mentioned that they chose to focus their reflection and exploration on the steps in their projects that they currently felt were beyond their current capabilities, and then seek in those a solution in the other's practice or experience. This suggests that in order to become more capable of identifying whether there is a need to acquire new capabilities then it may be necessary for innovators to confront the steps that they need to face in their project, with the capabilities that they currently have before even identifying relevant capabilities in others.

This section presented the main insights and findings from the experiments carried out with students to investigate the research direction oriented towards facilitating the identification of capabilities from others as a way to continuously learn in the context of practice. A reflection on those findings highlighted important aspects that suggest some weaknesses of the research direction explored. The next section follows with an iteration of this latter, concluding with the articulation of a second more fitting direction for this project.

3.5 Iteration of the initial research direction

After analysing the main takeaways from the interventions with students, a reflection on the latter brings to consider the reorientation of the initial research direction. This section articulates such reflection illustrating the iteration of the latter.

During the exploration of the initial research direction, it was realized that the chosen focus on investigating and reflecting on what innovators could find useful in others, was neglecting some important aspects that were instead relevant to the objective of this project and its main research question of

How can urban innovators be facilitated in identifying the capabilities that they need to develop for their DEI projects?

In this first phase of research, the experiments showed that the direction explored of stimulating awareness on what useful capabilities others have is only partially addressing the objective of this project. It can be said indeed, that this research direction focuses more towards the identification and seeking of "what's out there to learn", but neglecting that the real focus of the project was more oriented towards stimulating awareness on "what I need to learn". This was made explicit by the experiments' findings described in the previous section, as students were stimulated to find a new capability to acquire from reflecting on what they were not able to do yet, focusing on the steps in their projects that they considered most challenging.

New research direction

The findings from this first research activities suggest that in order to become more capable of identifying whether there is a need to acquire new capabilities it may be necessary to reflect on what the challenging steps in my project are, and to be aware at the same time of what my capabilities actually are to confront them with what is actually required from the tasks in a project. This realisation brings then to the need for reorienting and iterate the research done so far, which will be shown in the next and concluding section of this chapter.

It was recognised that the investigation so far was neglecting the process through which urban innovators could identify what they needed to do in their projects that required new capabilities. Stimulating a reflection to make needed capabilities emerge, means specifically for this project, facilitating urban innovators in reflecting on their DEI projects to identify in them what are challenging steps in their projects and which are the capabilities required in them. This brings then to a shift in the research direction and consequent reformulation of the sub research question guiding it, from being

How to support innovators in identifying useful capabilities for their projects, from others?

to

How to support innovators in reflecting on their projects to identify the capabilities that they need to develop to succeed in them?

This chapter described the exploration of a first research direction for this project. The reflections on this exploration culminated into a reorientation of the research and identification of a more valuable direction; an approach that would push urban innovators to reflect on their challenges and their own capabilities, rather than on seeking out capabilities of others. The next chapter starts then from this premise and describes the investigation of reflective approaches and their relevance to the current project aims in facilitating urban innovators in identifying their capacity building journeys.

4. The relevance of a reflective approach for initiatives

The previous chapter concluded with the reorientation of the first research direction into a new one, more focused on pushing urban innovators to reflect on their challenges and own capabilities. The present chapter will explore the relation of reflective approaches and design practice. From this exploration, the chapter will illustrate the relevance of a reflective approach in the practice of urban innovators in identifying the capabilities needed in their DEI challenges. A reflection will conclude this first research phase with the refinement of the initial assignment for this project.

4.1 Reflection and design practice

The previous chapter ended with a consideration on how the research could be reoriented towards ways that facilitate urban innovators to reflect on their projects, instead of identifying learning opportunities from others' practices. In line with this iteration reflective approaches are investigated in the present chapter with the goal of better understanding their value in supporting innovators to develop their capacity-building journey. To lead the research activities in this second phase, the following research question is formulated:

What is the relevance of a reflective approach in facilitating urban innovators in identifying their capacity building needs?

To investigate this research question, a literature review is carried out on reflective practices and approaches. This method is chosen to give the possibility of exploring the broad range of existing body of academic knowledge on the topic of reflection in order to first gain an overview on the topic and subsequently scope down its value in respect to the objectives of the present project.

An extensive body of research describes the usefulness and effects of reflection and reflective practice. Starting from the famous work of Donald Schon in his most popular work, "Educating the reflective practitioner" (1987), the attention to reflective practices and methods has expanded both in research and use, entering the spheres of education as well as the workplace. Reflection is defined by Grey (2007) as "an active and purposeful process of exploration and discovery, often leading to unexpected outcomes" (p. 496). Such process is specifically important, as "it allows us to critique our taken-for-granted assumptions so that we can become receptive to alternative ways

of reasoning and behaving" (Raelin, 2001 in Grey 2007, p. 496). Reflection then is a fundamental tool when it comes to learning and self-development (Helyer, 2015). It helps practitioners, to continuously learn in their everyday practice, as it "enables them to improve ongoing practice, by using the information and knowledge they are gaining from experience" (Helyer, 2015, p.16).

When it comes to design practice, reflective practice is described by Schon as fundamental for the work of the designer. The author describes this practice as taking the form of a reflective conversation with the situation (p.295). It is especially important for designers as they find themselves continuously facing problems to solve, but as the same author points out, as important as the problem-solving attitude, designers need to focus especially on a problem setting activity. Problem setting is "the process by which we define the decision to be made, the ends to be achieved, the means which may be chosen" (p.40). And as problems in real-world practice do not present themselves explicitly "they must be constructed from the materials of problem situations" through a process, says Schon, "in which we name the things to which we will attend and frame the context in which we will attend to them." (p.40)

The last process described by Schon is the process of Problem framing, a fundamental practice in design. Problem framing is the process that permits designers to understand a problem and creatively act upon it. Authors like Kees Dorst (2001, 2015) have extensively studied design practitioners in their everyday problem framing practice and have indeed recognised it as a fundamental aspect of designers' work. Dorst has described the process of framing in design as the result of an exploration of designers in which problems and solutions are constantly analysed and for this reason, evolve and change, until when the designer finds a temporary "bridge", a "problem-solution pairing", that gives the possibility to the designer to take action and further experiment solutions (2001, p.435).

4.2 The support of a reflective approach in urban innovators' capacity building process

The concept of reflection and the process of framing are then deeply interrelated in the practice of designers and in their capability of constructing problems and finding solutions. This is highlighted as well when it comes to tackling complex societal challenges. Authors like van der Bijl-Brouwer (2019) studied the importance of problem framing in such circumstances, and how this practice can become a capability of non-professional designers as well, or better said diffuse designers (Manzini 2015). In her study, van der Bijl-Brouwer highlights how in tackling complex societal challenges, problem framing becomes a continuously iterated process that brings (diffuse) designers in re-formulating the problem at stake, as their understanding of it improves through active experimentation and reflection. This brings us back to Schon, who links the act of experimentation and the act of knowing, as the designer experiment to "make new sense of the situations of uncertainty or uniqueness" (p.62).

Reflection is then the act that fundamentally contributes to an increasing understanding and learning, by exploring both problem and solution spaces. Being capable of reflecting means having the capability to easily jump from problem to solutions, from present challenges to 'past' approaches, in the attempt to better understand the situation, we find ourselves in and what's necessary to tackle it. When a co-evolution of both problems and solutions brings to innovative problem framing and solution opportunities, this means that reflection can be at the base of both the capability to learn from the context and creatively take action on it.

This clearly reflects the process described in the introduction, under which DEI processes advance in their challenge of embedding innovation into complex systems, such as urban environments. If those processes indeed require the capability to constantly adapt, co-evolve with the context through constant learning and action, then a reflective attitude as described previously is likely to be a fundamental capability for urban innovators involved in DEI projects.

From problem space to solution space in framing what to learn

The reflective process is a means for designers to learn and gain an understanding of a situation they need to tackle. Such understanding comes from comparing the situation at stake with past experiences, in a process that is described as a continuous jumping from the problem space, as the problem to solve, and the solution space being the array of possible known solutions to that problem. This is done with the intent to find out what can be considered 'the real problem' within the problem as initially perceived. As the designer gains a better understanding of both problems and solutions, these two spaces co-evolve and as a consequence, the identification or framing of the initial problem perceived changes. Once that problem is re-framed, the designer goes on with the same mechanism proposing solutions, e.g., prototyping and testing ideas, to solve the problem as framed but eventually to learn more about it, and possibly find out another, more interesting one and re-frame it once again. With this process designers manage eventually to identify a more significant and newer 'challenge within the challenge', that becomes then a new and more specific problem on which they can focus on. (See Dorst & Cross, 2001 for an in-depth description)

When imagining this process applicable to initiatives' aim to find the capabilities that they require to learn for their projects this could be seen as similar to the process identified previously after reflecting on the findings from students' experiments. From the experiment carried out exploring the initial research direction, it was found that the students identified of what was for them relevant to learn from the confrontation of what was required from a challenging task or a strategy used by another student, with what they already possessed as their 'solutions', in this case, capabilities. Confronting the available solutions with the problem at stake may help then framing better what is the real obstacle for us in achieving a task, which is not the whole initial task but probably lies in a more specific aspect of it that goes beyond our current capabilities or strategies known. Reflecting on the present project's goal of supporting urban innovators in identifying capabilities to learn, a similar process then is seen valuable for better framing what are capacity-building needs. As in the confrontation with new challenges, through this process of reflection urban innovators may be more capable to identify and articulate new problems, and from those elaborate new necessary capabilities to learn.

Problem-Space Dimension

P(t) —Evolution→ P(t+1)

Focus, Fitness

Focus, Fitness

Focus, Fitness

Solution-Space Dimension

S(t) —Evolution→ S(t+1)

Time
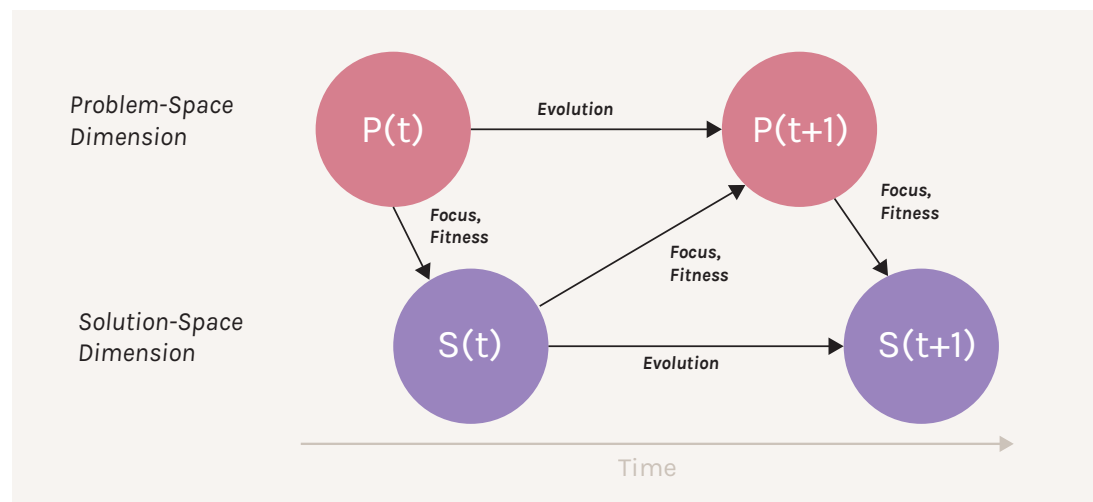
Fig. 4 -Co-evolution of problem and solution spaces, adapted from Dorst & Cross, 2001.

4.3 Refining the initial assignment

The exploration of a second research direction for the project led to investigate the potential of a reflective approach as a more promising backbone process to follow for the development of a methodology in support of urban innovators capacity-building journey. Insights from the literature review carried out showed the relevance of a reflective approach for urban innovators. In particular, it was highlighted its potential to facilitate urban innovators in continuously learn from their context and in this way act more effectively on it, advancing in their DEI processes. Based on these insights, the assignment as initially formulated is refined and a reflective approach is specified as guiding the development of a methodology supporting initiatives in their capacity building journey.

Design a reflective tool that enables urban innovators in developing their own Designscapes capacity building trajectory in order to facilitate continuous improvement and diffusion of capabilities.

The chapter explored the relevance of reflective approaches for the present project through a literature review, that leads to highlighting the importance of reflection as enabling factors of better problem framing capabilities of designers. Reflective approaches have been confirmed as a more fitting research direction for the development of the methodology assisting urban innovators in framing their capacity building process. The coming chapter will describe the second research phase, consisting in the first contact with urban innovators from Designscapes.

5. First reflections with urban innovators on their DEI projects

After the theoretical investigations, the second phase of the research will describe the first contact with the context and users of this project. The first contact with urban innovators from Designscapes will give the chance to experiment in a semi-structured way a series of initial reflections on their projects.
These activities will inform the general content of the reflective activities on one hand and generate insights on the initial requirements for a suitable reflective setting with urban innovators on the other, providing an essential base for the next interventions described in Chapter 6.

5.1 Interviews with initiatives

Once a clear direction for the research is identified, the second step of the project is to set the first contact with the actual users of this project, namely urban innovators participating in Designscapes. This gives a chance to better understand what activities and processes their projects entail and, in this way, understand what will be the general content of the reflections and activities that will further be carried out to develop the final methodology. Simultaneously, this first contact with initiatives gives the chance to experiment in a semi-structured way how to set up a suitable reflective setting with urban innovators and initially inform the basic requirements for the prototyped interventions to be carried out with them afterwards, in the third phase of the research. In this first contact with urban innovators, qualitative research methods, such as semi-structured interviews, will be utilised as a more flexible, unstructured way to carry out interventions and initiate reflections with urban innovators, while also gathering useful data to answer the research question. The insights from the interviews with urban innovators will then be gathered to inform the structuring of design interventions in the third cycle of this research.

To guide this research phase, the following research questions are then formulated:

What do the selected DEI projects in Designscapes entail?

What are the main steps and challenges that urban innovators have to face in their projects?

How to carry out a reflection with urban innovators on their DEI projects?

Methodology

In this first contact with urban innovators, a series of semi-structured interviews are conducted. As previously mentioned in Section 2.4, this research method is chosen as it is considered a more flexible, unstructured way to carry out interventions and initiate reflections with urban innovators on their projects. This would give in fact the possibility of experimenting with different questions to guide the discussion/reflection with them and subsequently evaluate what could be an interesting structure to follow for further interventions.

Set up

To set up the interviews, a series of Skype calls are organised with urban innovators. A total of eight interviews are set with members of eight initiatives from Designscapes programme, who are invited via email on behalf of Designscapes project. The interviews are set up as online calls of the average duration of 60 minutes each in which a semi-structured interview was used as the main methodology to discuss, discover and reflect with participants on their projects. To guide the interviews, an interview guide is prepared to contain the main topics and guiding questions.

Interviews structure

Semi-structured interviews are used as a way to engage initiators in a reflective setting that had the aim of gaining insights on their current project complexity, and in this way opening up the projects into their many tasks. This approach is carried out to simultaneously test how a reflection could be carried out by urban innovators on their projects, with the aim of identifying challenging steps in it and the capabilities that they require. The findings from the previous research phase regarding the

reflective process of comparing present challenges and past experiences are also taken into account and experimented within the interviews to validate its usefulness in reflecting on the DEI projects tasks.

The interviews would generally start by introducing the research activity to participants, and consequently asking them to briefly introduce their project. Urban innovators are then asked to list the future steps of their projects in the coming months, including mainly the current development phase of their project. Subsequently, these main steps would be split into smaller activities and each of them would be discussed further. For a description of the structure of the interviews see Appendix C.

After describing the goals, the research questions and the approach chosen for this second research phase, the following sections illustrate and discuss the findings that emerged. First, a summary will be described of the recurring steps of DEI projects identified through the interviews. Afterwards, the insights regarding the set up of a reflective activity on the same DEI projects will be illustrated.

5.2 Recurring steps in DEI projects

As mentioned at the beginning of this chapter, the semi-structured interviews carried out in this research phase would help to get a better understanding of what the DEI projects of urban innovators in Designscapes actually entail. In this way, the findings from the interviews would give important insights on what will be the content of the further reflective activities that will be carried out through design interventions in the third phase of the research. What resulted most evident from the interviews, is that urban innovators involved in DEI projects in urban

environments need to successfully involve a number of different stakeholders for their project to develop and sustain. Each of these stakeholders contributes to the project in a different way and is likely to have different needs and desires. Urban innovators need to be capable of grasping these different interests, empathising with and motivate each of these stakeholders to come on-board in their project. DEI projects seem to develop and sustain through the support and involvement of many actors, in a subtle but fundamental balance to be kept in this relationship and dependence from the context.

The following paragraphs describe the recurring steps and tasks found within DEI projects, hence what will likely be the steps and activities to be discussed during the series of interventions in the following third phase of the research.

Engaging and empathising with citizens and local communities
Citizens are usually the most explicit users targeted by these innovations. One of the first steps of every project is hence to engage local communities in the urban context and empathise with them, understand their specific needs and concerns. These actors could be citizens of a neighbourhood or a more specific group of users (e.g., citizens with hearing deficiencies in a project that targets noise pollution in cities, migrants and local artisans in a project aiming at recovering and mixing local and foreign artisanship traditions). Every project presents its own target communities of so-called users, and these are fundamental not only because they are the main target of the project, but because many times they become the means through which the same innovation can be spread and developed. As an example, a critical mass of users supporting the project is an important aspect to leverage on in the negotiation with other influential stakeholders, let's say companies that may invest in it or even local authorities.

Connect with local authorities

These are most of the time local authorities that have an influential power on the possibilities for this project to expand since they mainly manage laws, permits, and norms that regulate the possibilities to act in the context.

Additionally, local authorities are one of the most influential actors capable of contributing significantly to the embedment of the innovation. Successfully engaging and maintaining collaboration with local authorities means increasing the possibilities to change things systemically, spreading the idea to a larger, even to other cities. This means that urban innovators need to know and align with the local authorities' agendas and interests, "speak their language" in order to catch their attention and have them on board. This, depending on the context, can be easy or harder depending on local authorities' attitudes towards active collaboration with innovative projects and their trust in the value of the idea itself.

Design activities with citizens and other stakeholders to test and iterate design proposal

Most of the projects entail the use of participatory workshops or activities that may involve communities, local stakeholders and experts. These serve both as a way to actively engage people in the project, trigger and nurture the creation of local networks with an interest on the project and ultimately try out what are the actual prototyped ideas to test. Prototyping, as we know, is a way for designers to learn continuously from the context and grasp what can be the real needs and interests of the stakeholder affected by their idea, in order to be capable of making their innovation evolve to fit in the context.

Establishing networks of actors actively involved in the projects

Moreover, the goal of most of the projects is to build networks. These might be networks of local stakeholders that together contribute to the project either financing or supporting in other ways (e.g., promoting the project, hosting activities/

events, investing…). Establishing local networks of people might guarantee a stronger embedment of the project in the context and a solid point from which this network can be expanded further, reaching out to a broader public.

Identify different funding sources

Every project needs financial sustainability, and DEI projects make no difference. As financial support needs to be guaranteed to the projects, urban innovators need to identify viable business models for their projects to sustain. This means for many to identify the right funding options and resources, either through public or private funding, shared ownership of local communities or other viable business models depending on the project itself and of the network that they are able to establish.

5.3 Main insights on the reflective process

As mentioned at the beginning of this chapter, carrying out semi-structured interviews with urban innovators from Designscapes was planned to gather initial insights on the basic requirements for a reflective activity with initiatives. These requirements would, in fact, result fundamental in the next stages of the project when more structured interventions through design artefacts and prototypes will be carried out to investigate and develop a final methodology that supports them in framing their capacity building needs. The following paragraphs describe what are the main insights derived from these first activities with urban innovators, informing the requirements for the next reflective activities focused on their projects and capabilities.

Need for a support to guide the reflection

The semi-structured interviews carried out with urban innovators were useful in highlighting the need for a support in the reflection on the different steps, tasks and challenges in their processes. In fact, DEI projects are indeed complex, long-term projects that can easily open up into a myriad of smaller activities and tasks. Mapping these activities is not necessarily easy, especially when no support (e.g., visual) is provided. As a result, some of the interviews resulted hard to guide and follow in the attempt of navigating in the complexity of the projects. Noting this, attempts were made in the last interviews with the use of simple visualisation material (post-its and google slides), but the interviews showed, however, the need for a more structured tool or support. In this sense, the Skype calls settings, as could be imagined, showed as well the need to proceed with the logic choice of online tools. As both the possibility of visualising, writing and reading showed fundamental both for users and the researcher.

Need of focusing the reflection on one step of the project

The complexity and openness of the DEI challenges tackled by innovators make it also necessary to choose an explicit direction to follow when reflecting on them. The interviews showed in fact that trying to open up these projects with urban innovators and simultaneously attempting to in-depth in the steps entailed in them is a procedure that may take excessive time, with repercussions on the activity as the attention declines with time and no clear objective seems to be reached in the conversation. After initial, more explorative discussions, it was decided to focus on one main step of the project, selected by participants, and from that go more in-depth to explore what it entailed.
This showed to be a more valuable approach to take to structure and guide the reflection with urban innovators on their DEI projects, as a better level of detailed could be reached and more attention could be dedicated to reflecting on the smaller, more concrete challenges they need to overcome.

Time-consuming activity

These adjustments derive from another important finding from these activities is then the time factor. In fact, it showed as fundamental factors to take into consideration. Reflecting on such rich and complex projects may, in fact, take long and this may result in the worst case in a loss of attention or concentration from participants with consequences on the results of the activity.

Bringing up past experiences to compare

Finally, the attempt was made in the interviews of asking urban innovators to compare tasks of their projects with previous experiences, in order to start validating the insights and described at the end of Section 4.2, which recommended to follow a reflective process comparing problems and solutions spaces. This procedure was not yet explored in a structured way in the present setting, however, it showed useful in opening up a reflection with urban innovators on their activities. They were in fact triggered to highlight differences between current and past challenges, and this showed to be a valuable way to further unveil difficulties in the projects that require new capabilities.

The present chapter described the second phase of this research, in which a series of semi-structured interviews was carried out with urban innovators to reflect on their DEI projects. On one hand, these interviews inform on what will be the content of the further interventions with urban innovators, meaning the main steps, tasks and challenges for urban innovators. On the other, the same activities helped to gather important initial insights on the requirements to take into consideration when designing the next design interventions with initiatives. Informed by the findings from this second phase, the research follows in the next chapter with its third and concluding phase where series of interventions will bring to the development of a final reflective approach as a valuable tool for initiatives in their capacity building process.

6. Investigating reflective processes to frame innovators' capacity building needs

After investigating the relevance of a reflective approach for this project and exploring the initial requirements for a reflection with urban innovators on their challenges, this chapter describes the development of the reflective process that can support initiatives in framing their capacity building needs. A series of five iterations will be described, each featuring design interventions aimed at informing and developing the final proposal for this project. The chapter will present each iteration, detail each reasoning, methodology, procedure and resulting findings. Each iteration will feed the following one until the attainment of the final proposal of a reflective tool.

6.1 Goals and research questions

In the previous chapter, the series of semi-structured interviews conducted with urban innovators showed helpful in finding initial insights on the requirements for a reflective activity on DEI projects and in defining what is to be expected as the content of reflections with urban innovators on their projects. Additionally, Chapter 4 had previously helped to illustrate more theoretically how a process of reflection can be useful to urban innovators in better framing the capabilities that they require to learn for their projects, indicating a theoretical background process that could underlie the structure of the interventions.

Following the insights gained in the first two research phases, the research proceeds then with a third phase aimed at investigating more concretely how a reflective process can be structured and developed as a useful tool for urban innovators to frame their capacity building needs.

The main research question formulated to meet the objectives of this third phase is:

How can a reflection be structured to better facilitate urban innovators in identifying and articulating the capabilities that they need to develop for their DEI projects?

Moreover, as the goal of this research phase includes the one of informing the design of a final proposal of a tool for initiatives, an additional design question is formulated to guide the research of requirements for the design.

The design question formulated for this research phase is the following:

How to design a tool that can support urban innovators in carrying out a reflective activity aimed at framing their capacity-building needs?

6.2 Approach

After the articulation of the goals and research questions for this phase, the present section presents the approach and methodologies chosen for the coming research activities.

In order to investigate the research and design questions formulated above, a Research Through Design approach is selected to carry out this research phase, combined with an iterative approach for a total of five interventions. Being the goal of this phase to investigate how to structure a reflection to help urban innovators identify their capacity building needs, an RTD approach is chosen with the intention to utilise design interventions to trigger participants' reflections on their projects, observe their interaction with prototyped artefacts and their reaction to the reflective processes proposed.

Moreover, the iterative approach chosen for this phase will also give the possibility to gradually develop a proposal for a reflective tool for initiatives, answering both to the research question and to the design question formulated for this phase. Each iteration will, in fact, generate valuable insights through the reactions of participants both to the tool and to the reflective process, informing in this way the design of the next intervention until the final proposal for this project.

Methodology for the interventions

The main methodologies utilised for this research phase are concept prototyping and reflective online sessions.

Concept prototyping
Prototypes are designed in the form of online digital templates to structure the reflective process in each intervention, as well as to inform the design of a reflective tool to be utilised by initiatives. Utilising prototypes permits the participants to freely interact with them, and to more autonomously carry out a reflection on their projects. Simultaneously, their interaction with the digital tools proposed permits the researcher to observe their reactions and behaviours in the activity, informing both research and design questions of this phase.

Reflective online sessions
The different prototypes are used with and by participants in the setting of reflective online sessions. Each intervention will, in fact, be carried out through online sessions since urban innovators participating in Designscapes are engaged from different countries in Europe. The setting of an online session will give participants the possibility to interact with the different interventions in a context that can resemble a workshop/ session in their practice while giving the possibility to me as the researcher to gather data on their reactions through observations, recording and feedback interviews. Eventually, the setup of sessions will be informative of the possible contextual use of the methodology developed, for example in a workshop/session setting in urban innovators professional practice.

Data collection methods

Valuable data to answer both research and design questions will be collected during the activities through the following methods. Observations will be made during the sessions and notes will be taken regarding the behaviours and reactions of participants, guided by the research and design questions formulated for each intervention. The sessions will be also recorded with the consent of participants, giving the possibility to look back at relevant points in the sessions and enrich the data collected through observations. Finally, at the end of each session feedback interviews will be utilised to learn from participants about their direct experience with the interventions proposed.

Common set up for interventions

For each session, urban innovators of initiatives from Designscapes programme are contacted and invited to participate on behalf of the Designscapes TU Delft research team, as previously done for interviews. The sessions will make use of online communication tools such as Skype or Zoom, while to structure the prototypes and carry out the activity online collaborative tools such as Google Slides and Miro will be utilised.

6.3 Insights and research informing the design of interventions

Insights from previous research phases

Before introducing the series of interventions carried out in this third research phase, it is helpful to recall the insights emerged from the previous two research phases, as they will inform the following activities.

From the research in literature described in Section 4.2 it emerged that reflection is a fundamental process in support of designers as it significantly helps them to learn about a new situation to tackle, by confronting it with past experiences and in this way in a process that goes back and forth from the so-called 'problem space' to the 'solution space'. In this way the designers gains a better understanding of the actual challenges they need to face and can better frame a more specific problem to focus on. A similar process is seen valuable for a better framing of capacity building needs, assisting innovators to pass from problem space to solution space, for example from their current challenge to past experiences in the same or other projects, in order to better identify what now is new that they cannot yet solve.

The series of semi-structured interviews carried out with urban innovators (Section 5.3), generated additional insights in regards to the constraints to take into account in a reflective activity on DEI projects. The first insight referred to the need of a more structured support in guiding the interviews, which will be explored further through iterations of prototyped tools designed to accompany the reflective process of urban innovators. Another important insight deriving from the series of interviews was that given the amplitude of urban innovators' projects, the reflective activity may need to be limited to the focus on one main step of their projects to reflect on. This step is likely to be decided

at the beginning of the activity, in order to dedicate the following parts to a deeper reflection towards the identification of the capabilities required.

The combination of insights and requirements gathered in the previous two research phases then bring to the formulation of a backbone structure that will likely guide all the iterations. A reflective process helping innovators in identifying new capabilities to acquire for their DEI projects will start by selecting a challenging step in their projects. It will follow proposing different strategies for a reflection on this latter that will keep as a base the principle of exploring problem and solution spaces to find what the aspects or newer challenges that innovators are not yet capable of achieving with their current capabilities.

Gibbs' reflective cycle

In preparation of the interventions, further research is done on existing theory on reflective processes with the aim of investigating reflective methodologies or strategies that could result relevant to the objectives of the activities with urban innovators. In particular, desk research is carried out with the aim of finding reflective methods that could inform the design of reflective processes to test in the interventions with initiatives. Methodologies are explored that utilise reflective processes to facilitate learning processes as well as the development of new skills or capabilities. A specific framework, Gibbs reflective cycle, was found through this desk research and chosen to inform the structuring of the following interventions.

One of the most known frameworks when it comes to support and structure learning processes through reflection is the reflective cycle developed by Graham Gibbs (1988). Gibbs reflective cycle was created to give structure to a process to lead learning from experience. His framework is used in education,

as well as in the workplace, to stimulate learners to reflect on their past experiences, happenings or actions, in order to extrapolate from them learnings that they help them prepare for their future actions. Gibbs' framework encourages learners to systematically think about the phases of an experience or activity through six steps that encourage the learners to "make sense of a situation, and its outcomes, including what else could have been done, what could be done differently/better next time and so on" (p.19).

Six steps of Gibbs' reflective cycle
The six steps according to Gibbs are:

Description: the past situation is described, usually with the use of prompting questions such as: *What happened? When did it happen? Where did it happen? Who was involved? What did you do yourself? What did other people do? What was the result of these actions?*

Feelings: the learner is asked to recall impressions and feelings, this to create awareness on that situation. They are asked what they felt as well as what others in the same situation may have felt.

Evaluation: people are then asked whether the experience of that situation was good or bad. *Which approach worked well and in what way? Which approach didn't work as well?* And reflect on why that happened.

Analysis: the results recalled, good and bad ones are analysed individually in order to draw conclusions from the past experience

Conclusion: participants then step back to look from distance at the situation reflecting on what experience, positive or negative, derived from their actions and that event. They extrapolate learnings from that and reflect on which skills they may need to develop if they faced a similar situation again in the future

Action plan: in this final step, participants make a plan for themselves to bring forward for future actions or events, for example developing the skills that they found important for the situation just analysed.
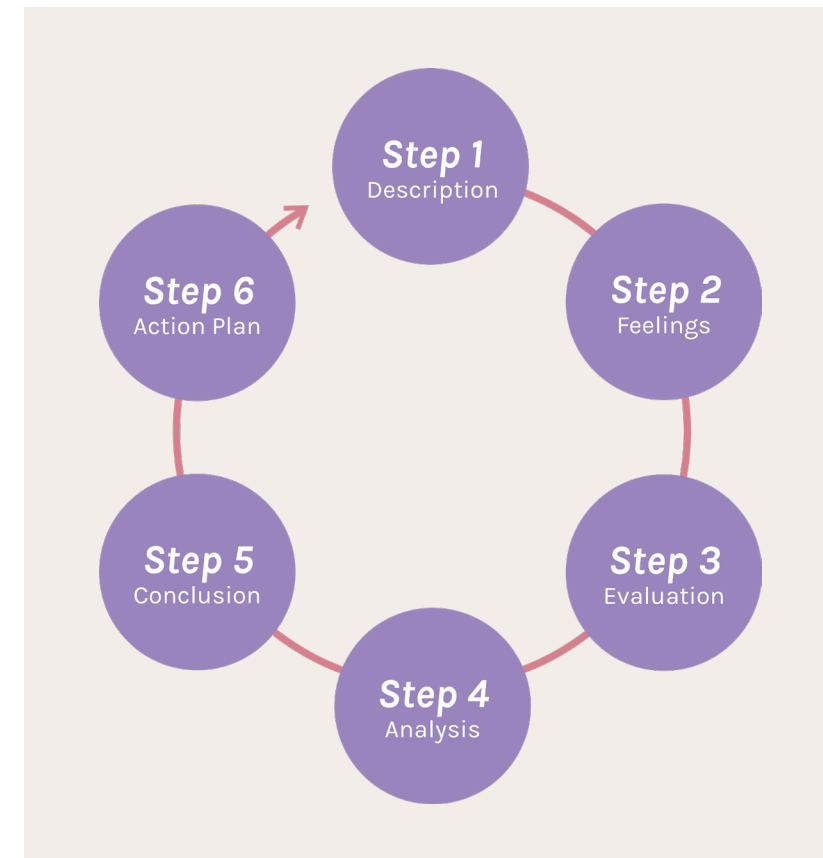
Fig. 5 - Visualisation of Gibbs' reflective cycle

Gibbs reflective cycle is found inspiring for the design of the reflective processes for urban innovators since it structures a way that could be followed, if not entirely at least partially, to accompany participants in recalling and analysing past experiences. Increased awareness of those past situations and strategies used could then help participants better compare them to the current situation, in order to spot differences and recognise lackings. Moreover, reflecting on past experiences using Gibbs' cycle, could help participants to evaluate the past situations, already finding learnings in for example, recognising what didn't work so well and why. For these reasons the reflective cycle of Gibbs will be taken as inspiration for most of the interventions, in each section will be indicated more precisely which parts of the interventions refer to this model.

Five sections describing the design interventions

The different design interventions are described in five respective sections in this chapter. Each section explains and details the goals of each intervention, as well as the reasoning behind the choices of its structuring. Research questions will be formulated at the beginning of each intervention in order to help focus on its relevant aspects. The choices regarding the structuring of the reflective process will follow, explained in the text and illustrated through a visual representation, detailing the relevant steps in the process proposed with the detail of all the questions included in the reflective activity. The design of each prototype will be also described in detail to show the actual set up of each activity and show the development of the tool.

In each section, the insights gathered during the activities will be described and discussed according to both the research and design questions of each intervention. This will help to inform and set the requirements for the following iteration, and progressively define the final proposal for this project.

After introducing the activities carried out in this third and concluding research phase, the next section starts with describing the first of a series of five interventions that will bring to the elaboration of the final proposal for this project.

6.4 Intervention 1

As mentioned in Section 6.3, the main principle identified for a reflection aimed at framing new necessary capabilities to acquire is one of reflecting on a challenging step that urban innovators need to face in their projects, comparing that one to past experiences with similar tasks to better define what could be newer, more specific challenges that now stretch urban innovator's capabilities. In order to do so, the first intervention has the goal of investigating how, in practice, a reflection can be structured to help urban innovators better identify the challenges they may face in the activities of their projects. From those, the goal is as well to explore how recalling strategies utilised in past similar experiences, may contribute to the framing of innovators' capacity-building needs, or in case previous experiences may not be present, to also explore how the reflection on a challenging task can be assisted anyway.

Research and design questions

To guide this intervention, here are recalled the main research and design questions formulated at the beginning of this research phase (Section 6.1). Additionally, sub-research questions are specifically generated to investigate the main aspects of the reflective process of this intervention.

Main RQ

How can a reflection be structured to better facilitate urban innovators in articulating the capabilities that they need to develop to carry out their projects?

Sub-RQs investigating this reflective process

Can urban innovators be facilitated in articulating the capabilities they need to develop through reflecting on the challenging steps found in their activities?

How does reflecting on strategies used in previous similar experiences help in framing capacity-building needs?

How to guide a reflection on a task when this has never been experienced before?

Main DQ

How to design a tool that can support urban innovators in carrying out a reflective activity aimed at framing their capacity-building needs?

Structure of the process explored

The following paragraphs describe the structure of the reflective activity that was designed for the first intervention. The process is structured in two main sections described here with their main steps and details of the reasoning behind the decisions made for the different tasks and questions. A visual representation of the same structure can be seen in Fig. 6, in the following pages. There the main structure and questions of the activity are represented in light brown colour, while in purple boxes can be found descriptions regarding each of the main steps in the activity.

Section 1

The first part of the activity is designed to guide the participants in better identifying what could be new, more specific challenges in the coming activities that they will need to carry out in their projects.
First of all, participants are asked to think of the coming phases of their projects and the activities that they entailed. This to initially open up their DEI projects and trigger them to choose one relevant step to reflect on during the rest of the session. They would then pick one activity from their project that they consider challenging and describe it through the use of prompting questions. This descriptive step has the aim of pushing participants to contextualise the activity at stake, making it concrete and sensitising them for the following question. The participants are then asked to compare this activity to previous experiences they had and to draw from this comparison what they think are new aspects, to subsequently reflect on how these could represent new challenges for them to face. Once these new challenges are formulated, participants are asked to pick one and follow with the second part of the activity.

Section 2

The second section of the activity pushes participants to reflect on the challenge they picked with the aim of reaching at the end of the activity the formulation of what participants think they need to learn to accomplish the challenge at stake.
To begin this second part, participants are then asked to think if they have any experience that they can relate to the challenge they selected and depending on the answer, they proceed to two different parts of the activity. One section is followed if they indeed have a past experience with the task as it guides them in reflecting on it. Through a series of questions, participants are asked to recall that experience and the strategies that they used to accomplish the task. This is done to extrapolate learnings and reflect on what they would now be capable of doing compared to their past experience. The participants choose the other section in case they have no prior experience with the challenge at stake. In this case, the questions guide the participants in splitting the challenge into steps and reflect on how these would actually result in concrete, pushing them to think whether they would feel in control of carrying those steps out or not, and what they would need to learn to manage them.

The following pages show in Fig. 6 the structure of the reflective process just described. The main steps and questions are visualised and described.

Design Intervention 1

WHAT CHALLENGES ARISE DUE TO THE NEW ASPECTS IN THE ACTIVITY?

It was asked then to choose one aspect to reflect on, as a reflection on multiple aspects at once was considered too much.
It was then asked to participants to think how this would affect their activity and what challenge might create for them.

REFLECTION ON PREVIOUS EXPERIENCES WITH SAME CHALLENGE

A series of 4 pairs of questions was made to trigger a reflection on how the same challenge had been approached in the past. The aim of this reflection phase is to let the participant reflect on the strategies (hence capabilities) previously used in a similar situation. Reflecting on which of these were successful and which not is thought to help acknowledging what capabilities could help in the same situation, and showing which are still lacking in facing this kind of situation.

Slide 1

Think of coming phases in your project and the activities that they entail.

Describe a challenging activity in the project phase

What is the activity?

Who is involved and why?

Where and when will it take place?

What's the purpose of the activity?

What does it entail?

What will you do in it?

What will the people you mentioned do in it?

Compare the activity with previous experiences in order to find NEW ASPECTS

New aspect

New aspect

New aspect

Slide 2

Choose one aspect. What will you need to take into account due to this? **What challenges arise?**

- New Challenge

- New Challenge

- New Challenge

Choose one of these challenges.

Do you have any experience with this?

Yes →

No →

Slide 3

1)
What was your experience?
What happened in that situation?

2)
What did you do?
What strategies did you use in that situation?

3)
Which strategies helped, which ones didn't help?

4)
What did you learn from that experience?

Slide 4

1)
Looking back at your activity, how do you think you can apply what you learnt to your current situation?

2)
- What can you solve concretely?
- How will you do it?

3)
- What do you feel you can't solve yet?
- What would still be a problem?

Slide 5, 6, 7

1)
Think what is entailed in the problem/challenge of (copy paste the challenge from previous slide) From your experience, what steps could this task/activity generally entail?

2)
Try to make a list of what you think will be the steps in your current situation.

3)
Which of these you feel most in control of?
What makes you sure you will be able to manage them?

4)
Which of these you feel less in control of?
What makes you feel not in control?

5)
What do you think you can learn to become in control of these aspects?

PROMPTING QUESTIONS TO DESCRIBE THE ACTIVITY

A series of prompting questions were done here to trigger a reflection that could sensitise on the main aspects of the overall activity. This is thought functional in view of the comparison with previous experiences in the next question.

COMPARISON WITH PREVIOUS EXPERIENCES TO FIND WHAT ARE NEW ASPECTS IN THIS ACTIVITY

A comparison with previous experiences was asked here with the aim of finding aspects in the coming activity that could be new to the participant.

ASKING FOR PREVIOUS EXPERIENCES WITH ONE OF THE CHALLENGES EMERGED

Another question referred to the past is made, asking for previous experiences, but this time with the goal to direct the activity either on a reflection on such experiences or on a series of questions to 'open up' the challenge at stake

OPENING UP CHALLENGE INTO STEPS

A pair of questions is made to open up the challenge into smaller steps. This to help picture the challenge more concretely in the real situation. Expressing what are the actual difficult things.

FEELING IN CONTROL OR NOT IN CONTROL, WHAT TO LEARN

The last questions want to make the innovator reflect on which of these steps he/she feels in control of, and more importantly what is that makes it so. The aim is to help externalise capabilities or lackings, concluding with a last more direct question formulating a learning objective.

Fig. 6 - Visualisation of the structure designed for Intervention 1

Set up and data collection method

To carry out this intervention, two initiatives were contacted in order to test the process twice. In each activity, one member of an initiative took part. The activity was held online and carried out communicating via Skype call, while the reflective process was organised using Google Slides as support. In this way, the activity could be easily structured in a template looking form and be carried out by participants with as little facilitation as possible from my side. The use of a collaborative tool is chosen to give the chance for participants to write down their answers to the questions in the activity and in this way carry out the reflection autonomously. At the same time, the possibility to intervene as a researcher in the activity would make it possible to tweak or slightly adjust the template and its questions if needed. As data collection methods, observations, video recording and feedback interviews were used in this test.

Prototype

As a support to the reflective process, a prototype in the form of a digital template was designed utilising Google slides. The template was structured in a series of seven slides each containing two main questions or instructions (see Fig.7 in the following page). The participants are asked to reflect on the questions and then write down their answers on the template. To proceed in the activities some of these answers (e.g., the challenging activity they picked) can be copy-pasted by participants in the following slides as a way to help keep the focus on it in the following questions, in a step by step process. The first two slides contain questions of Section1 and five more slides containing Section 2 of the activity. The complete set of slides used can be seen in Appendix D.

Think of coming phases in your project and the activities that they entail.

What would you say could be a challenging activity? Describe it here
- *What is the activity?*
- *Who is involved and why?*
- *Where and when will it take place?*
- *What's the purpose of the activity?*
- *What does it entail?*
- *What will you do in it?*
- *What will the people you mentioned do in it?*

- Identifying the funding and implementing partners for the urban interventions
- Our communications team, media outlets, local businesses
- Sofia, Bulgaria in April-June
- Identify the best partners to support urban interventions in the future
- Building a strong case for local businesses and communities to support those interventions
- Build a strong success story showcase of how urban transformations benefit positively both citizens and representatives of the private sector. The latter also implies the improved quality of life for the stakeholders involved in the businesses in emerging economical and technological hub like Sofia
- Provide input on what kind of incentives are expected to provide any kind of support for running the urban interventions.

Comparing this activity to previous experiences you had, what do you think are new aspects?
- The activity is implemented with stakeholders from the perspective of financial support and a different value proposition is to be foreseen
- The activities so far served people directly interested in the problem (local communities and local authorities). The involvement of local businesses requires a different selling point.

Reflect on the steps

Steps in your current situation.
1. Creating a stronger case for online outreach that will boost the company visibility as an incentive for their support
2. Identifying the best implementing partners based on their general willingness to support the projects, rather than a case-by-case approach with each intervention
3. approval from local authorities
4. implementation

Think of which of these you feel not in control of.
What makes you feel not in control?

1 and 4:

For 1: Due to the COVID19 outbreak we can't know what budget cuts the private sector entities will be going for.

For 4: Due to the lock down in the city, interventions might be in fact difficult to implement

What do you think you can learn to become in control of these aspects?

More about the strategies enterprises apply in times of crisis.

Fig. 7 - Example of two slides design for the prototype in Intervention 1

Answering the research questions

The session was successful in providing insights regarding the research questions described in the introduction of this intervention, although not all answers to them were necessarily positive. Here the insights are presented correspondingly to each sub-research question for this intervention.

Can urban innovators be facilitated in articulating the capabilities they need to develop through reflecting on the challenges found in their activities?

Participants initially showed uncertainty in choosing a challenging activity. It was not clear to them what exactly was intended as an activity in their project and in that case, it was necessary for me to intervene for clarification. Subsequently, when asked to compare the chosen activity with previous experiences, it resulted easier for a participant to describe first the previous activities carried out in his project. This, in fact, resulted as a way for him to more easily compare them, suggesting that this might be an important aspect to take into account to facilitate finding differences among the current project activities and previous ones. Both participants showed that there is indeed a chance that participants don't have any previous experiences relatable to the challenges they found. This highlighted the importance of possibly carry out this activity with multiple members of a team to have multiple experiences available. In general, the feeling was that too much time was dedicated to the formulation of a challenge to reflect upon, while too little space was left in the intervention for the actual reflection on it.

How does reflecting on strategies used in previous experiences with a task help urban innovators in articulating the capabilities they need to develop for that task in the future?

When it came to reflect on past experiences with similar challenges, recalling the strategies used and what is applicable now seemed a good first step in articulating necessary approaches for the current activity, but way more articulation was needed to actually be able to reflect on the capabilities important in that case. Moreover, the following question "What can you solve now?" pushed participants to think of concrete solutions that were not necessarily easy to articulate and took their attention away from thinking what approach the challenge required and what capabilities could turn out useful. In this sense, an insight is that it is important to gradually accompany participants in elaborating on what is important to succeed in a challenging step, but without forcing them to find a solution because that might not be possible to find and more importantly it deviates from thinking on the capabilities that are necessary.

How to guide a reflection on a task when this has never been experienced before?

In the reflection on a totally new challenge, splitting it into steps seemed quite helpful, but even more important was to ask to confront these steps with the actual situation. Asking literally to think of the current situation triggered the participant to think and mention important constraints that affect the steps of the activity. When it came to asking a participant, which steps he felt in control of (or not) and why, it was not sufficient to articulate at all what he needed to learn to manage those steps. An important learning is that a more articulated description of the situation in which the activity happens might help in defining more precise and concrete constraints for which it could be easier to think of what someone needs to be capable of to succeed.

Main takeaways on the reflective process

Carrying out the activity in a group might benefit as multiple experiences and perspectives can enrich the reflection.

The questions should guide participants to reflect on the challenging steps, and what is required by them, without falling in the trap of asking immediately for solutions. These solutions might be indeed hard to know as the steps are still unknown, moreover, they might deviate from thinking on the capabilities that are necessary.

The reflection must focus more on the description and reflection on the circumstances in which the activity happens, as these might hide the constraints that stretch the capabilities of urban innovators.

Answering the design questions

How to design a tool that can support urban innovators in carrying out a reflective activity aimed at framing their capacity-building needs?

Reflecting on the activity as structured in the prototype utilised, important limitations are found. Organising the reflective activity on a linear sequence of slides each containing few questions in it, made it hard for participants to gain an overview of the activity itself and of the information they were putting in. This, for example, makes it difficult to explicitly show the link between different sections. The simple need for copy-pasting content from one section to the other, or to go back one slide to check what the previous content was, contributes to making it a quite scattered and time-consuming activity. In this sense, a more open and visual structure could maybe help in giving a necessary overview

of the activity to participants. Additionally, it emerges from the intervention that time is definitely an important aspect to take into consideration for this kind of activity to be carried out by urban innovators in their practice.

Main takeaways on the tool

The tool must give participants the possibility to have an overview of the content of the reflection

The tool might need to give a chance to go back and forth in different sections

Reflection towards the next iteration

Reflecting on the main takeaways emerged from this first intervention, some aspects are important to take into consideration looking forward to the next iteration. One aspect is that more attention must be given on reflecting and articulating the challenges faced in the projects' activities and attention must be given to avoid that the questions in the activity lead participants to get stuck on finding solutions to difficult tasks. Rather, the reflection must help them articulate and frame what makes that task difficult for them, and not how they can solve it. Additionally, the activity showed that more interesting and detailed challenges emerged when asking participants to confront smaller steps with the actual circumstances of their current projects. In the activity in fact, participants showed to find more relevant challenges to their concrete achievement when asked to reflect on the concrete circumstances in which they would carry out their tasks. This suggests that focussing on describing and

reflecting on smaller steps in the projects activities may lead to a more detailed elaboration of challenges for urban innovators and hence capabilities that they need to acquire. The next iteration needs then to keep this aspect into consideration, by triggering for example a more detailed description and comparison of the situation in which a task is carried out. Regarding the articulation of capabilities, a negative remark that must be made on this intervention is that it didn't explicitly ask participants to elaborate on them, but rather asked to think of learning gaps that would make them feel more in control. For the next iteration it is necessary instead to address more directly participants regarding the capabilities that they think they need to acquire. A last recommendation emerged from this first intervention concerns the tool utilised. The template in google slides showed limitation due to its scattered and linear composition, that prevented participants from having an overview of the content and copy-pasting activities from one section to another. For what concerns the structure of the activity then, a more open setting in which participants can keep an overview of the activity is worth experimenting.

6. Intervention 2

The first investigation highlighted the need for further articulating a reflection on previous experiences in order to facilitate participants in identifying the capabilities that they might require in the coming activities of their current DEI project.
An insight was that the comparison between current and previous activities in the attempt of finding what now requires stretching capabilities could benefit from a more detailed description of the situation in which smaller steps are carried out.
Moreover, it was noticed how a deeper reflection on the strategies entailed might be necessary to investigate further what are the capabilities that are now required.

The goals of this second intervention becomes then to investigate how a more detailed description of the challenge at stake and of the previous experiences made, could facilitate the emergence of more defined challenges and subsequently help in articulating capabilities needed. Moreover, based on the insights gained in the previous intervention, the present intervention would as well experiment how a more open setting could be shaped to guide the reflection of participants.

Research questions for this intervention

The main research questions guiding this intervention are the same that previously guided the first intervention. Different sub-research questions are additionally generated to investigate the main aspects of the reflective process designed. Reflecting on the recommendations from the prototype structure of the previous activity, a design question is also formulated to investigate the usefulness of a more open-ended structure for the activity.

Sub-RQs investigating this reflective process

Does reflecting on smaller steps of an activity help in a more specific articulation of capabilities?

How does the reflection benefit from a more detailed description and comparison of the situation in which steps are carried out, with previous related experiences?

How to further sustain a reflection to articulate capabilities, starting from the descriptions of and differences among the two situations?

How can urban innovators better articulate capabilities from the challenges identified in their activities?

Sub-DQs investigating this reflective activity

How does a more open and visual setting affect the reflective activity?

How does answering/writing on post-its on a template change the activity?

Structure of the reflective process

Based on the insights emerged from the previous activity and the research questions formulated, this time the reflective process is structured as follows. The process is structured in three main sections that will be described illustrating the reasoning behind the decisions made for its composition.

Section 1
Again the activity begins asking participants to list the coming phases of their projects and the main activities entailed in them. Once these are listed down, the participants are asked to choose one activity on which they would like to reflect upon and to split this one into the steps that it entails. From these latter participants choose one to reflect on further.

Section 2
The activity follows with the description of the step chosen for which participants answer to the following prompting questions What's the goal of this step? Where will this take place? When? Duration? Who's involved? What will the people involved do? What will you do? Through these prompting questions, the step is described by participants. In line with the recommendations from the previous intervention, more attention is dedicated in this iteration to the contextualisation of the activity. Subsequently, the participant is asked to think about a previous experience that can relate to the activity carried out in the step just described. This experience is also described through the same prompting questions, in order to facilitate a more accurate comparison of the two activities on their different aspects and a more precise identification of new aspects.

Section 3
After the two are described the participant is indeed asked to list on one hand differences, on the other similarities that they identify between the two situations described. From each difference identified, the participant is then asked to think of which aspects are then now to take into account, what could be challenging and to conclude, what capabilities might be useful to acquire. A reflection on the similarities found is also set for participants to evaluate their experience with aspects that are likely to be found again in their coming activity. In this subsection, they are guided to think of what worked and didn't work and the reasons for that, concluding with stating what they think they are then capable or not yet capable of in a similar situation.

A second prototyped process was designed to investigate a slightly different strategy. While the first process would proceed to articulate on capabilities starting from each difference found between the two situations compared, this second version would instead try to generate a series of constraints deriving from the description and comparison of the activities. This happens at two different stages: in Section 2, after the description of the step chosen, and in Section 3, after listing the differences between the current step to carry out and the previous experience related to it (see yellow post-its icons in Figure 8). The constraints emerged are then collected at the end of the reflection. Reflecting on them, the participant is asked to think of the challenges that derive from them and the capabilities that she/he thinks will be necessary to develop.

Fig. 8 and 9 (in the following pages) show the structures just described, visualising the main steps and questions that build up the reflective process designed for this intervention.

Design Intervention 2 a)

What are the next stages of your project?

Stage

Stage

Stage

What are the main activities that they entail?

Activity

Activity

Activity

Activity

Activity

Pick one activity you think it might be important to reflect on.

- Why is this activity important?

- What do you want to obtain as an outcome from it?

What are the steps entailed in it?

Step

Step

Step

Step

Pick one step and describe it

What's the goal of this step?

Where will this take place?

When? Duration?

Who's involved? What will the people involved do?

What will you do?

Can you think of experiences you had that you can relate to this activity?

Try to describe it.

Same prompting questions but referred to the past.

FIND DIFFERENCES AND SIMILARITIES
Think of what is now different from the previous situation and what is similar.

Differences
Differences would be used to subsequently reflect on what new aspects were needed to take into consideration in the activity now, and what challenges they represented so to finally ask for which capabilities would be useful to learn now.
Similarities
Similar aspects were also picked and a series of reflective questions (Inspired by Gibbs reflective cycle's phase of 'Evaluation') was used to evaluate what participants did already. From this they would reflect on what they would be able to do in the current situation, and what they felt they would need to learn making emerge possible new constraints.

What is different now, compared to your previous experience?

What is similar now, compared to your previous experience?

Reflect from new aspects, on the capabilities they might require

1) Thinking of these differences, what is an aspect you need to take into account in your activity?

2) A challenge then could be…

3) A capability that would be useful for us to learn would be…

Reflect on a similar aspect that you already experienced

1) A positive thing was that…

2) What did you do that helped reach your goal?

3) From my previous experience I learned is important to…..

4) Looking at the future situation, I feel I will be capable of..

1) A negative thing was that…

2) What did you do that didn't work?

3) From my previous experience I learned is important to…..

4) Looking at the future situation, I need to be more capable of …

OPEN UP PROJECT

The first part of the activity asked to name and list the coming stages of the project and the main activities entailed so to open up the project and let participants choose one activity to reflect on.

SPLIT INTO STEPS

This time it was asked to split the activity into smaller steps so to reflect on a step of the activity and possibly make challenges more concrete

DESCRIBE (PROMPTING QUESTIONS)

Similar prompting questions were then asked in order to describe the step, as done in 'Intervention 1' with bigger activities

COMPARISON WITH ONE PREVIOUS EXPERIENCE, DESCRIBED THROUGH PROMPTING QUESTION

Participants are asked to recall a previous experience with a similar task to the step they just described. Promting questions are used. Aim is to reach a more detailed comparisons for more refined differences and hence challenges.

Fig. 8 - Visualisation of the structure designed for Intervention 2a

Design Intervention 2 b)

What are the next stages of your project?

Stage

Stage

Stage

What are the main activities that they entail?

Activity

Activity

Activity

Activity

Pick one activity you think it might be important to reflect on.

- Why is this activity important?

- What do you want to obtain as an outcome from it?

Activity

What are the steps entailed in it?

Step

Step

Step

Step

Pick one step and describe it

What's the goal of this step?

Where will this take place?

When? Duration?

Who's involved? What will the people involved do?

What will you do?

Can you think of constraints that might emerge in this situation?

Constraint

Constraint

Can you think of experiences you had that you can relate to this activity?

Try to describe it.

Same prompting questions but referred to the past.

What is different now, compared to your previous experience?

Thinking of these differences what constraints may emerge for the current situation?

Constraint   Constraint

CONSTRAINTS EMERGING FROM DIFFERENCES
The new aspects emerging as differences would then be used to subsequently ask for new constraints.

What is similar now, compared to your previous experience?

Reflect on a similar aspect that you already experienced

1)
A positive thing was that...

2)
What did you do that helped reach your goal?

3)
From my previous experience I learned is important to.....

4)
Looking at the future situation, I feel I will be capable of..

1)
A negative thing was that...

2)
What did you do that didn't work?

3)
From my previous experience I learned is important to.....

4)
Looking at the future situation, I need to be more capable of ...

1)
Collect all the constraints that emerged for your future activities

Constraint   Constraint

2)
What are the challenges that arise due to these constraints?

3)
Considering these challenges, what capabilities do you think you nee to acquire?

COLLECT CONSTRAINTS FOR FUTURE ACTIVITIES

Once some steps would be covered with the procedure described above, all the constraints emerged would be grouped together.

CHALLENGES ARISING FROM CONSTRAINTS

From the constraints collected, the participants were asked to think of challenges for them that might arise from them.

CAPABILITIES USEFUL TO SOLVE THESE CHALLENGES

From the challenges it was then asked to participants to articulate what they thought could be consequent useful capabilities to acquire to solve these challenges
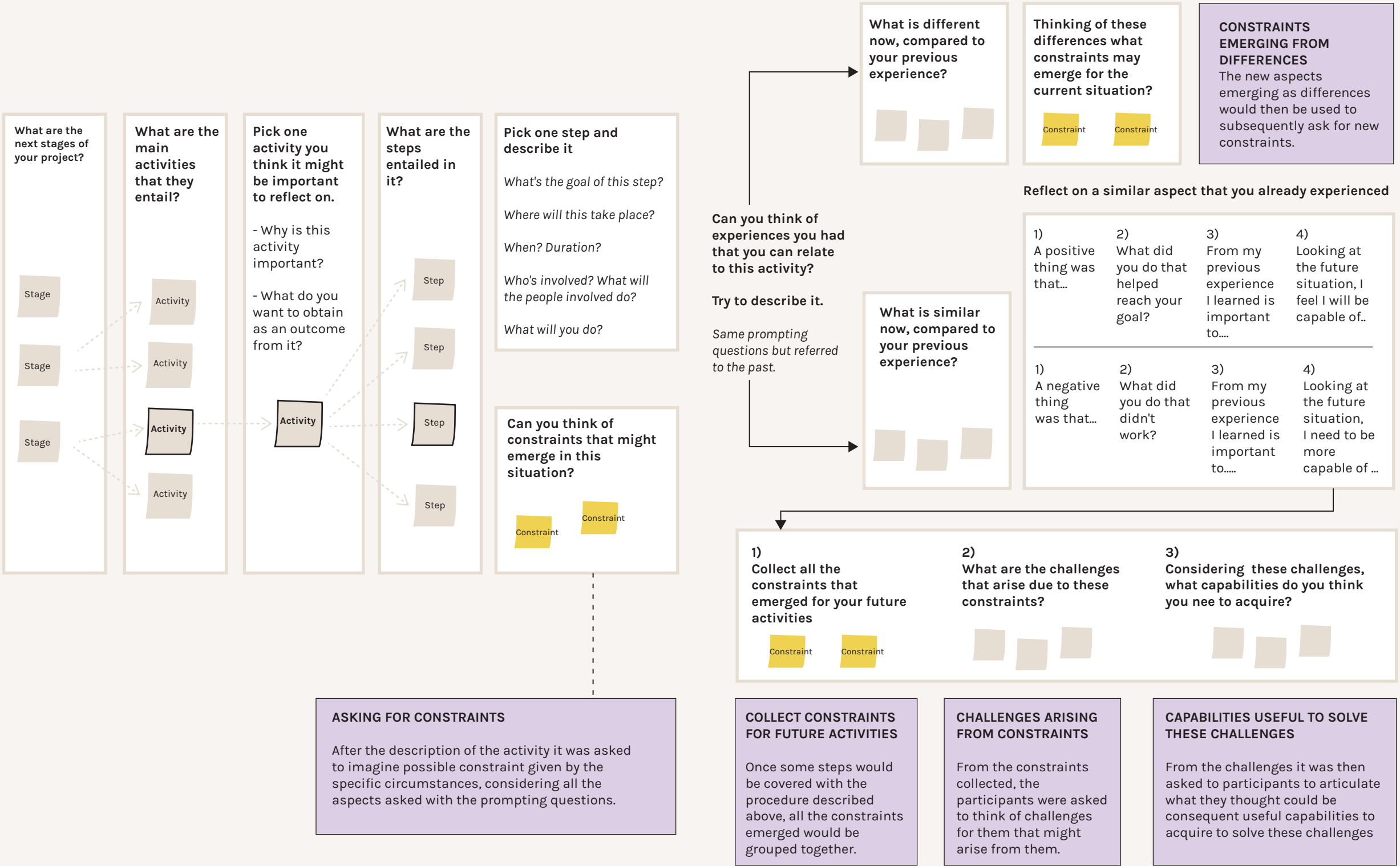
Fig. 9 - Visualisation of the structure designed for Intervention 2b

Set up and data collection method

To carry out this intervention, two initiatives are again contacted, this time to test the two different prototyped versions of the process. Each activity engages one member of an initiative as a participant. The activity is held online and carried out communicating via Skype call, while the online platform used to host it changes based on the insights from the previous intervention (See 'Main takeaways for the tool' in Section 6.1). The activity is now organised utilising a different online collaborative tool called Miro. The tool gives the chance for participants to obtain a complete overview of the activity they are carrying out. Moreover, the free use of the whiteboard space provides the flexibility necessary in case of small changes.
As done previously, observations, video recording and feedback interviews with participants were used for data collection.

MIRO – Online collaborative whiteboard platform
Miro tool is an online board that permits to collaborative work in groups on a digital whiteboard, reproducing the tools and uses of a physical whiteboard plus giving the chance of an infinite space to operate simultaneously in a team. This online platform gives the possibility to carry out collaborative activities remotely, providing a digital whiteboard and tools that perfectly replicate sticky notes and canvases. Participants have the possibility to create templates, to draw, write and utilise sticky notes similarly to a real life situation. Fig. 10 shows a screenshot of the collaborative whiteboard platform.
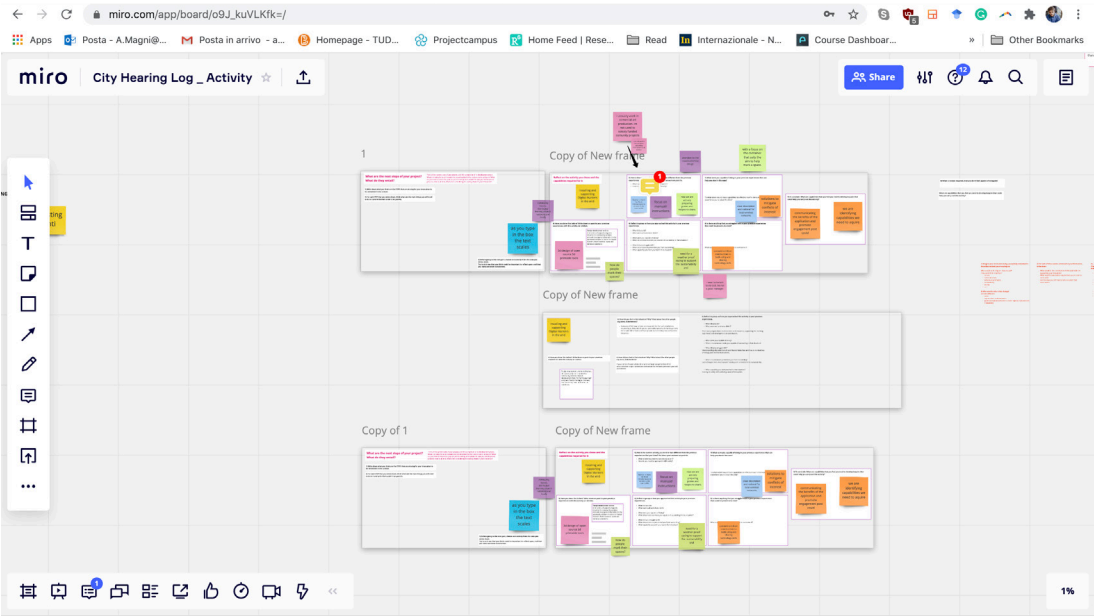

Fig. 10 - Screenshot of the online Miro board

Prototype

The activity is then held on this digital whiteboard using the collaborative tool Miro. On this whiteboard, questions and instructions are written to guide the activity in its different sections (see questions in red in Fig.11). The main sections of the activity are delineated on the whiteboard with squares. The open structure and the newness of the tool for both participants and researcher made it necessary to facilitate the whole activity. In this case, participants' answers to questions were written by me as a researcher/facilitator in dedicated boxes as sticky notes. The methods entailed for the collection of data include again video recording, observation and feedback interviews at the end of the activity. In Fig. 11 shows a screenshot of the activity and one of its sections as prototyped for the intervention on the collaborative online tool Miro. For a full description of the prototype see Appendix E.
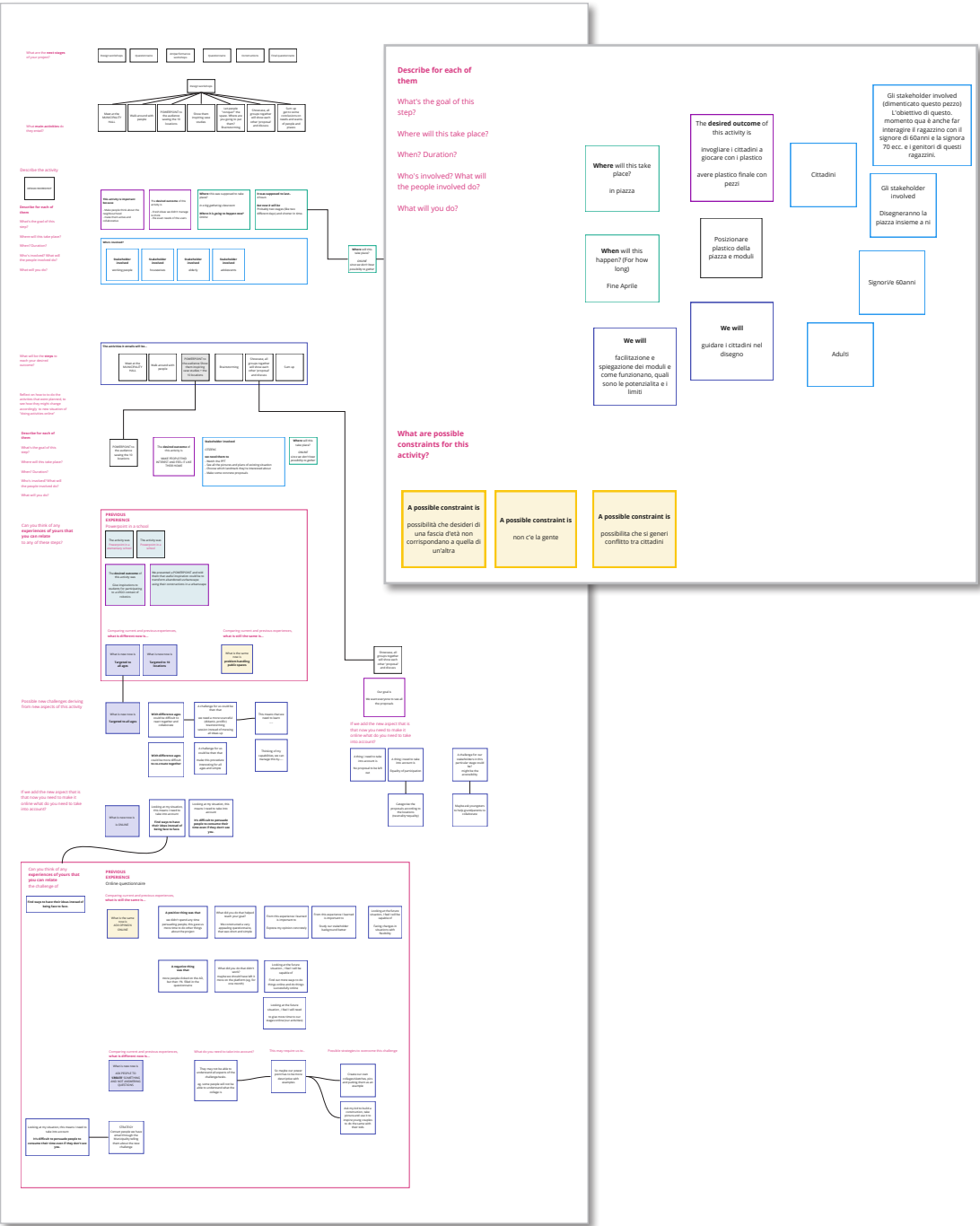

Fig. 11 - Screenshots of the overall activity developed on Miro for Intervention 2b, and a detail of a section of the activity

Answering the research questions

The activity showed fruitful in answering the research questions formulated at the beginning of this section. Here the insights are presented correspondingly to each sub-research question for this intervention.

Does reflecting on smaller steps of an activity help in a more specific articulation of capabilities?

How does the reflection benefit from a more detailed description and comparison of the situation in which steps are carried out, with previous related experiences?

For what concerns the attempt of describing both the coming step and the previous experience related to it as a way to facilitate a more elaborate reflection, it was found that following this process to then compare the two situations is really time-consuming and makes the process quite scattered. When asked to describe the previous experience the participant immediately named some differences and the process of description got in the way of her reasoning. An insight, in this case, is that for participants might be more natural to immediately compare the previous experience with the current situation without first describing entirely the previous experience. Asking for differences and similarities felt slightly long, and scattered. Moreover, the question "What is different now?" resulted a bit too broad. More details were then extrapolated by asking more specific questions, for example, "What is different in terms of stakeholders?" .

How to further sustain a reflection to articulate capabilities, starting from the descriptions of and differences among the two situations?

How can urban innovators better articulate capabilities from the challenges identified in their activities?

Also regarding the articulation of capabilities, useful insights were generated through the activity. In the first prototype, it was found useful to ask, after articulating differences, "What do you need to take into account into your activity?" as it generated both specific challenges (e.g., "It's difficult to persuade people to consume their time even if they don't see you.") and new approaches to take (e.g., "Find ways to have their ideas instead of being face to face.").
This insight is representative of the limitations, instead, of the second version of the prototype, which focussed much more on extrapolating on constraints and not on accompanying a reflection useful to articulate the capabilities. The limitations, in that case, were found in the process of gathering all the constraints first, to then formulate challenges and capabilities needed from them. In this way, the two questions resulted too disconnected from the specific aspects of the situations that generated the constraints and this made the formulation of capabilities more difficult and abstract for participants.

Main takeaways on the reflective process

- *The comparison between the future activity which is the object of reflection, and previous experiences with it, must happen in a faster, possibly more organic way, facilitating participants to come up with differences and challenges more quickly.*

- *When asking for differences the questions should make reflect and address contextual aspects of the situations (e.g., differences in terms of stakeholders, location..)*

- *The articulation of capabilities needed for a task can be more easily facilitated if, from differences identified in the future activities, the participants are brought to consider immediately how these aspects affect the activity and more importantly their actions, making it easier to reflect then on what is required to complete those activities and which are the capabilities necessary to carry them out.*

Answering the design questions

How does a more open and visual setting affect the reflective activity?

How does answering/writing on post-its on a template change the activity?

The fact of writing answers on post-its showed limitations in the activity as too many post-its ended up written with little information in them. This resulted in a really scattered process that in some occasions prevented a fluent reflection making the overall activity scattered and too time-consuming.
Moreover, the task of writing everything on post-its can be limiting

when reflecting, as sometimes much of the details expressed by participants by reflecting on the questions actually go lost when writing. It is advisable for the next interventions to include more discursive or discussed parts in the activity, and using post-its mainly to note down conclusions. This would benefit the activity in keeping it more fluent and leave room for the stream of thoughts of participants, while still writing down what is really important.

For what concerns the openness of the structure, that was found helpful by participants as it helped to have an overview of the elements discussed. The absence of a clear template, however, made it still necessary to zoom in and out too much. In this sense, the format of a digital whiteboard, in fact, positively permits to have both a bird view on content as well as a precise zoom in on each part. This may, however, require too much effort when carrying out an activity without facilitation on my side, for these reasons a template must be structured for the next iterations to better guide participants in the reflection.

Main takeaways for the tool

- *The tool must facilitate as much as possible participants to keep a "flow" in the reflection, and not result in a scattered, over-structured process.*

- *Post-it notes must not be overused, as writing to many notes actually interrupts the reflective process. It is preferable that participants have the possibility to discuss the questions and only then write down their thoughts.*

- *A more clear and self-explanatory structure is fundamental to let initiatives' members carry out the activity fluently. A guiding template is necessary for the activity to be effortless for participants.*

Additional considerations on the activity

Compared to the previous intervention, reaching the starting point for the reflection with the selection of a step took way less time. Listing the coming phases, the activities entailed in them and choosing one step to reflect on went smoothly, possibly due as well to the facilitation in the activity. An additional observation was that, compared to the previous activity in which participants were left more autonomous, this time my presence as facilitator may have constituted a bias for participants as sometimes it was felt as if they were answering to me as a Designscapes researcher and not necessarily as they would answer if carrying out the activity autonomously. This makes even more important for the next interventions to provide a more structured and self-explanatory tool that participants can utilise autonomously without the need for my intervention in the activity.

Reflection towards the next iteration

This second intervention provided insights regarding the structuring of the reflective process for participants and some indications for the prototyped tool that must support it.
The choice to shorten the initial phase of picking a step to reflect upon showed the advantage of having more time for the rest of the reflection, and this must be taken into account as well for next iterations. The descriptive phases of this activity, however, showed to require too much time and to actually impede a more naturally flowing comparison between past and present. This part may be considered to be shorter in the next iteration, to rather focus more on the capabilities needed to accomplish a task. Regarding the formulation of capabilities, it was noticed how this final task in the activity could be facilitated if, from the differences identified in the future challenging activity, participants are asked to think of the consequences these differences have on their activity and actions. Posing this question, in fact, makes it easier to then guide them to think of what they need to be capable of doing to carry them out. This latter insight represents an important aspect to develop further in the following iteration as more focus needs to be put in facilitating participants in the elaboration of what the future task requires so to more easily help participants in the articulation of the capabilities needed.

6.5 Intervention 3

Based on learnings from the second intervention, a third session is set up with the aim to further look into the insights that derived so far and additionally investigate some aspects yet unexplored. The previous intervention showed how the articulation of capabilities could be facilitated starting from finding differences in the new challenge at stake, and subsequently asking participants what aspects are then necessary to take into account in their activity. As the previous prototype gave hints on how to accompany a better formulation of capabilities, this intervention has the aim to further investigate a more structured way to lead urban innovators in the formulation of concrete learning needs. The aim is to dedicate more explicit focus on the articulation of capabilities related to the task chosen, be they capabilities emerged in previous activities that can now be stretched or ones emerging from the new aspects of the challenge at stake. Learnings regarding the design of the tool and session will be explored in this session as well. The previous activity showed the need for a more structured and self-guiding template as a base for the reflection, plus the need to reduce the writing tasks and induce more fluent discussions. Regarding this last point, this third session will also investigate an important aspect still unexplored which is the way the reflective process would work when done as a team activity by members of an initiative. Imagining this activity to be carried out by initiatives in their practice, it is fundamental to take the chance to investigate this aspect.

Research questions for this intervention

The main encompassing research question guiding this intervention are the same as the previous two. Also this time, specific sub-research questions are generated to investigate the main aspects of the reflective process designed. The sub-research questions are the following:

Sub-research questions

How does the activity change if a deeper reflection is triggered as well on the capabilities used or lacked in the past?

How to better structure the articulation of learning needs from the identification of new aspects in their future activity?

How is the reflective process affected when carried out as by multiple members of a team?

Sub-design questions

How does the structuring on templates help urban innovators in carrying out the reflection autonomously?

How is the activity affected when carried out as by multiple members of a team?

Structure of the process

As done with the previous two interventions, the structure of the process organised for the reflective activity is described here. It now presents three main sections, each supported and organised in a respective template that will be shown later when discussing the set up of the activity. Again a visualisation is shown in the following pages, as a support to the explanation in these paragraphs.

Section 1

The process starts similarly to the second intervention. In the first template, the participants are asked to think of the coming phases of their projects and to then write down the activities that they entail and what they need to do in each of these activities. This in order to formulate tasks from which one would be picked up to go ahead with the reflection.

Section 2

The second template is structured to guide participants through a reflection on previous experience in which they already had to face a similar task. The template is structured partially following Gibbs reflective cycle (1988), mostly referring to the first three steps of his framework: description, feelings, and evaluation of the activity. The questions guide the participants in recalling the situation of their previous experience, describing the strategies used that time and evaluating the results of those actions in order to reflect on what they were able or not to do tackling that task. In doing so, the questions push participants to formulate more explicitly the skills, methods, techniques that were found useful that time, as well as the ones that they felt lacking. Finally, it subsequently asks them to articulate which capabilities of them emerged in that situation and which capabilities they instead felt missing. The aim of this second section is to recall approaches, skills and more importantly capabilities used or lacked in an activity similar to the one previously picked, in order to then go and reflect

with these in mind on the differences that the current situation presents.

Section 3

The third template aims at guiding participants to articulate the capabilities that they need to acquire for the task that they picked in the first part of the activity. It does so starting to ask participants to think of how the current situation is different from their previous experience. Participants are then asked to reflect on what is now required for the success of the activity and how these requirements change the approach and tasks they need to carry out now, and finally, the skills that they think these tasks require. The template concludes with some actionable takeaways in the form of training needs, by asking the participants three questions: What skills that you already possess can be useful in this situation? Which of these would you need to "stretch" or improve? What are instead important skills for this activity that you need to develop?

The structure just described is visually represented in the next pages in Fig. 12.
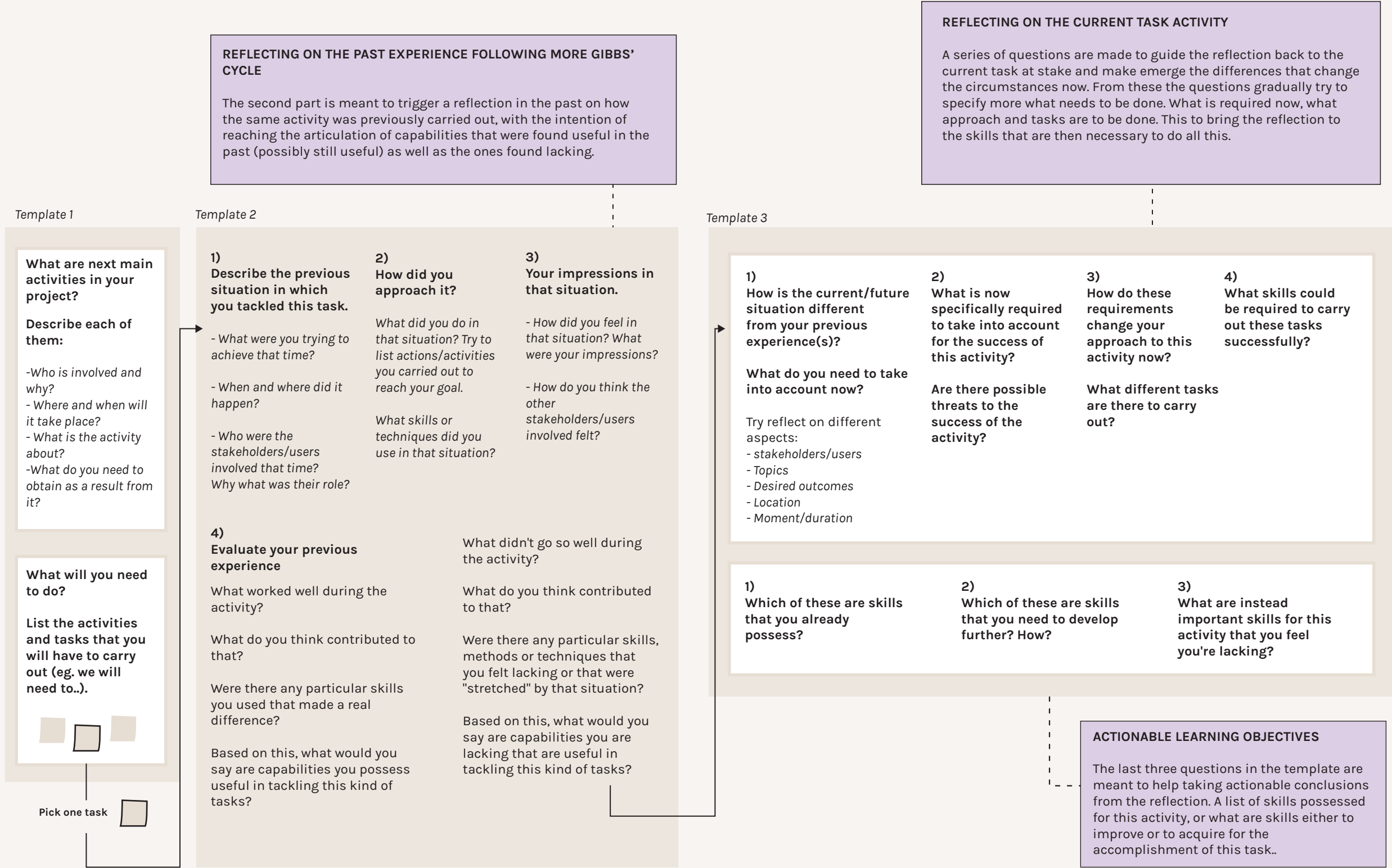
Design Intervention 3

REFLECTING ON THE PAST EXPERIENCE FOLLOWING MORE GIBBS' CYCLE

The second part is meant to trigger a reflection in the past on how the same activity was previously carried out, with the intention of reaching the articulation of capabilities that were found useful in the past (possibly still useful) as well as the ones found lacking.

REFLECTING ON THE CURRENT TASK ACTIVITY

A series of questions are made to guide the reflection back to the current task at stake and make emerge the differences that change the circumstances now. From these the questions gradually try to specify more what needs to be done. What is required now, what approach and tasks are to be done. This to bring the reflection to the skills that are then necessary to do all this.

Template 1

What are next main activities in your project?

Describe each of them:

-Who is involved and why?
- Where and when will it take place?
- What is the activity about?
-What do you need to obtain as a result from it?

What will you need to do?

List the activities and tasks that you will have to carry out (eg. we will need to..).

Pick one task

Template 2

1)
Describe the previous situation in which you tackled this task.

- What were you trying to achieve that time?

- When and where did it happen?

- Who were the stakeholders/users involved that time? Why what was their role?

2)
How did you approach it?

What did you do in that situation? Try to list actions/activities you carried out to reach your goal.

What skills or techniques did you use in that situation?

3)
Your impressions in that situation.

- How did you feel in that situation? What were your impressions?

- How do you think the other stakeholders/users involved felt?

4)
Evaluate your previous experience

What worked well during the activity?

What do you think contributed to that?

Based on this, what would you say are capabilities you possess useful in tackling this kind of tasks?

What didn't go so well during the activity?

What do you think contributed to that?

Were there any particular skills you used that made a real difference?

Were there any particular skills, methods or techniques that you felt lacking or that were "stretched" by that situation?

Based on this, what would you say are capabilities you are lacking that are useful in tackling this kind of tasks?

Template 3

1)
How is the current/future situation different from your previous experience(s)?

What do you need to take into account now?

Try reflect on different aspects:
- stakeholders/users
- Topics
- Desired outcomes
- Location
- Moment/duration

2)
What is now specifically required to take into account for the success of this activity?

Are there possible threats to the success of the activity?

3)
How do these requirements change your approach to this activity now?

What different tasks are there to carry out?

4)
What skills could be required to carry out these tasks successfully?

1)
Which of these are skills that you already possess?

2)
Which of these are skills that you need to develop further? How?

3)
What are instead important skills for this activity that you feel you're lacking?

ACTIONABLE LEARNING OBJECTIVES

The last three questions in the template are meant to help taking actionable conclusions from the reflection. A list of skills possessed for this activity, or what are skills either to improve or to acquire for the accomplishment of this task..

Fig. 12 - Visualisation of the structure designed for Intervention 3

Set up and data collection method

Two initiatives are contacted to participate in this activity, to test the prototyped process twice. This time multiple members of each participated in the activity. The activity is held online, a Skype call is used to communicate with the participants while the online collaborative tool Miro is used to structure the process.

Prototype

This time three digital templates are prepared to guide participants in the activity, as explained in the structure of the process, to test how they would carry it out autonomously as a team. The templates are structured as canvases, one for each section of the activity, and contain each different boxes with questions and space for participants to answer using sticky notes. The participants are invited to discuss the questions and write down only the important conclusions, as it was learnt from the previous intervention. To collect the data, video recording, observation and feedback interviews at the end of the activity are chosen as a methodology.

Fig 13 shows the templates designed for the intervention, with sticky notes from participants. For a more detailed description of the templates utilised for this intervention, see Appendix F.

Template 1
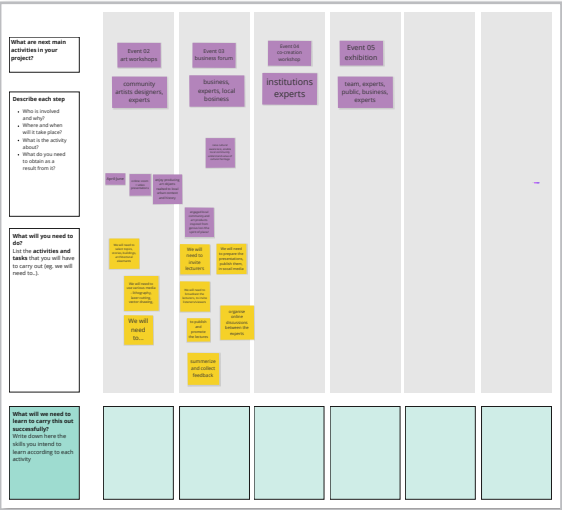
Template 2
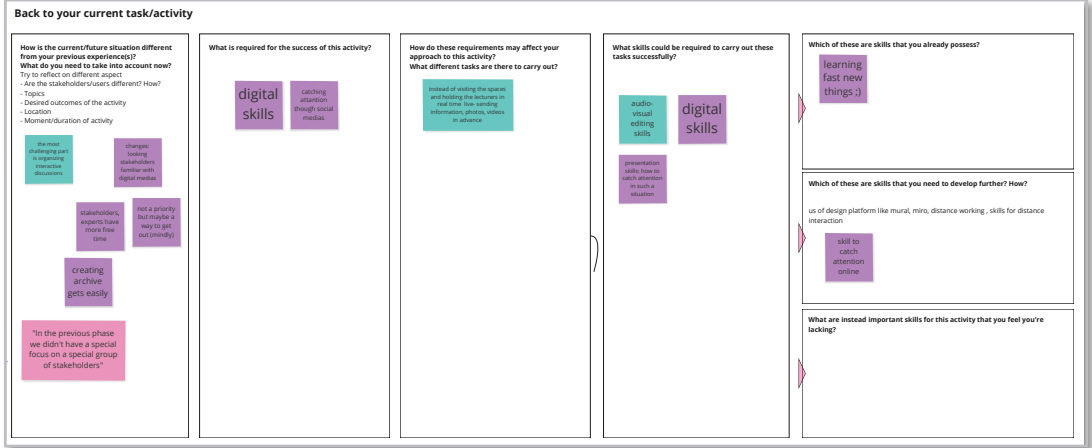
Template 3

Fig. 13 - Templates utilised to structure and carry out Intervention 3

Answering the research questions

How does the activity change if a deeper reflection is triggered as well on the capabilities used or lacked in the past?

Reflecting on the structure proposed for the reflective approach in this activity, one of the first things noticed was that the second and third part of the activity felt a bit disconnected. Probably organising the reflection in what could be seen as two separate reflective cycles made it so that little of what had been elaborated on the past experience was actually brought into the reflection on the current activity.

Interestingly, when answering descriptive questions regarding the previous experience with the task, in multiple occasions participants answered the question and immediately compared the situation to the one of the current activities. An example from a participant's quote: "Owners were difficult to find but we had positive reactions from the institutions and experts, now institutions and experts are closed (covid19)." This may suggest that the tool must facilitate more easily jumping from past situation to the present one, and also this time this process may have been slightly interrupted.

It was felt that this time the comparison between the two activities resulted less effective, too little room was indeed given to compare and reflect on the differences between the current situation and the previous experiences of the team. This comparison might be indeed differently structured not with one question only but with multiple ones on different aspects of the situation (e.g., stakeholders, goals..)

How to guide urban innovators in articulating learning needs starting from the identification of new aspects in their future activity?

Interesting insights were gathered as well regarding the process for the articulation of capabilities for the current task, structured in the third template. Starting from the first question "How is the situation different from previous experiences?" it was noticed how question didn't specify enough that it referred to the activity. Moreover, adding aspects to reflect upon such as stakeholders, location etc. initially misguided the participants in reflecting on the whole project situation. A learning, in this case, was that questions in the template may need to explicitly refer to the activity at stake in order to not mislead the participants in reflecting too much on something else.

For what concerns the second question "What is specifically required for the success of this activity?" The answers of participants were referring both to requirements e.g., "catching the attention of stakeholders online", and to skills e.g., "digital skills". A participant also commented afterwards, that the question was actually quite difficult to answer, and that different members might have different answers to it. This may mean that the question was not specific enough. For sure the question leads more to think of solutions rather than pushing to explore the challenge. A question phrased like "What do you want/need to obtain from this activity now?" could maybe help more in reflecting towards requirements rather than solutions, maybe helping participants to decide which approaches are most necessary.

It was noticed how some questions tended to 'abstract' capabilities or skills from the situation in use. Questions like "Based on this, which capabilities do you think you possess?" or "Which of these are capabilities you possess?" triggered answers that were felt slightly vague and the feeling was that

they didn't make participants think of to what extent those capabilities would be effective in such situation. Asking whether one possesses a capability may not necessarily be a good ending question, as it detaches the capability from its use in the specific circumstances. A question like "What would you be confident/capable to do in that situation?" might, for example, make participants think more to what extent they would be able to do something.

An interesting aspect noticed at the end of one of the two activities was that it is important to conclude the activity with some possible actionable steps to take, in addition to the formulation of learning needs. This was found at a moment in which I intervened at the end of the activity after participants answered the last questions on template three. Questions like "Where would you go to learn this? Who could you ask? Where could you find the resources to do this?" were posed and the participants' answers resulted in really concrete actionable steps like "we could look for seminars, there's one in our city on 'Branding' that could be useful to us.." This interesting finding suggests that the formulation of actionable steps to take may benefit the activity in more concretely defining what is needed to learn and how, making the reflection an enabler of or innovators to take further actions for their development.

How is the reflective process affected when carried out by multiple members of a team?

Overall, carrying out the activity as a team showed multiple benefits to the reflection. First, as not all the members might be completely updated or aware of what every activity entails, being in the group makes sure that other members can fill in these knowledge gaps. Moreover, participants could build on top of each other; in the reflection on previous experiences, discussing different aspects that helped or not in those situations, as well as in the articulation of requirements, or on strategies and skills in the third template. As a consequence of a more autonomous group discussion, however, the participants didn't always come to clear conclusions in the different sections. In this way, sometimes it was not always clear whether the steps of the template were strictly followed in order or not. A remark is to indicate for each section the task to write down conclusions so to give freedom for discussion as well as forcing to make decisions before going on in the activity.

Main takeaways for the reflective process

- The tool must facilitate jumping from a past situation to the present to compare different aspects of both while doing the reflection.

- Before asking to formulate requirements for the current activity, might be helpful to push participants to elaborate on what they want to obtain from it so that that information can lead their decisions afterwards

- The group discussions that emerge in the process are helpful as participants can build on top of each other both in reflecting back on events and articulating future steps. The discussions, however, can affect the process by getting stuck or losing the grip with the activity. The activity then must make sure, through the tool instructions, to anchor participants' discussions so to use that valuable information in the process of the reflection.

- Questions regarding capabilities should try not to abstract them from circumstances but instead push participants to reflect on how a capability might be applied in the circumstances of the current situation, in order to understand if and how this would be stretched.

- The past and the present must be more linked, so to reflect whether the results that one was able to do in the past are still possible to achieve with the same capabilities or not.

- The comparison and reflection between different situations might need to be structured on multiple questions rather than only one, considering different aspects of the situation (e.g., stakeholders, goals..)

- The reflection may be even more beneficial for participants if it concludes triggering them to formulate actionable steps to acquire the capabilities that they found lacking.

Answering the design questions

How does the structuring on templates help urban innovators in carrying out the reflection autonomously?

It was noticed that instructions were not always clear and self-explanatory, especially when it came to bridge two different sections of the activity. Closer attention must be put in structuring and guiding the activity, both visually and verbally, so that participants can better carry out the reflection.

An insight that reinforces the need for an autonomous activity was a comment received by a participant during the feedback interviews. He stated "Maybe when someone is interviewing it's not really easy to say there's something we miss. But what we did it's a good starting point that a group can further develop." My presence as an interviewer from Designscapes (and sometimes as a facilitator), might have slightly biased the participants in not articulating completely their lacking or insecurities. It is hard to say how much this may have influenced the activity, but it is definitely an aspect to take into account.

How is the activity affected when carried out as by multiple members of a team?

The discussions of the groups might make participants get lost in talking without noting down any information. Sticky notes could work in supporting participants to write conclusions from each discussion on a question. The tool itself may need to provide more explicit instructions to participants, indicating them, for example, to discuss in a group and then write down conclusions.

Main takeaways for the tool

- More room must be given to discussion (for this reason the tool might work best in a group) and note-taking could be most useful in writing conclusions in the different sections of the reflective process.

- Instructions must be clear and simple, trying to use direct and concrete questions rather than not abstract terms.

- Every main part of the activity must be bridged with precise indications on what to do next.

- Questions in the tool must explicitly refer to the activity participants are reflecting on in order to not mislead the participants in reflecting on something else.

- The use of the tool in the presence of a facilitator/interviewer might bias the participants in not fully articulating their thoughts.

Recommendations for next iteration

The third intervention made emerge interesting insights that can be used to inform the next steps of this iterative research phase. This third process was structured to extrapolate existing capabilities of participants, by asking them to reflect on their past experience with a task. Even if this process resulted interesting in making emerge what they were able or not do achieve in the experience with a similar task, the following comparison with the present resulted less useful to the articulation of lacking capabilities in regards to the current activity of their project. This happened probably because a reflection on the past was done before asking the participants to reflect on what the new task required.

One important requirement that emerged for the coming iteration is then that the structure of the reflective process must accompany urban innovators to first describe and better articulate what they suppose is needed to be capable of achieving a task, and from those conclusions try to reflect by comparing previous situations to the current one to understand what they are actually capable of doing. Regarding this aspect, more attention may be explicitly given to reflecting on capabilities and their link to the circumstances of different situations. A stronger and more explicit focus must be given to the reflection on its goal of reflecting on the capabilities possessed (or not) by participants. Another important takeaway worth exploring in the next activity is an actionable conclusion for the activity. Participants may benefit in elaborating concrete steps to take to develop the capabilities found lacking, so to be more triggered and enabled to take further action. Concluding, the last remark concerns the dynamics of a group reflection, a recommendation for the next iteration of the tool is to ameliorate the explicit link between different sections of the activities, this could be done through headings or more articulated instructions, so to make participants more able to carry out the reflection without any need of intervention.

6.7 Intervention 4

The previous iteration came closer to the objective of supporting participants in articulating skills and capabilities that are useful for an activity that they need to carry out. However, articulating skills and capabilities in itself did not necessarily bring participants to reflect more in-depth on which of these they would lack or to what extent their capabilities would be stretched in the circumstances of the new challenge. Another finding from the previous iteration is that the structure of the reflective process as designed in the third intervention brought participants to recall and reflect on how they previously tackled an upcoming challenging task, but before even articulating what this task is about and what it requires. In this way, attention and focus were put into remembering a previous experience without having in mind the purpose of reflecting on which capabilities emerged as useful or lacking in a similar task before in order to see which learnings could emerge from the current conditions.

The process of the reflection itself was then adjusted by focusing first on articulating the challenging task selected by participants, then recalling past experiences in which those capabilities had already been used to see whether these, confronted with the present challenge, would still be enough or instead would need to be stretched.

Moreover, this additional iteration was used to ameliorate the functioning of the tool in the situation of autonomous use by participants. This includes adjustments responding to the need of a better bridging between different sections of the tool, of more clear instructions that try to ask articulated more directly and concretely trying to avoid or overuse abstract terms, and finally the need of testing if the tool would enable participants to carry out a reflection autonomously without the need of external facilitation.

Research questions for this intervention

To guide and investigate this fourth intervention, additional research and design questions are formulated. The questions are the following:

Sub-research questions

How to facilitate participants in reflecting more in-depth on whether they possess or not the capabilities required from the task they need to achieve?

How does asking for concrete actions to take for developing the capabilities, help participants to gain more actionable results out of the activity?

Design questions

How can the tool be utilised autonomously by participants in a group reflection session?

Structure of the process

In line with the changes needed, the reflection was rearranged in a way that would lead participants first in articulating of the challenging task they selected, until elaborating on which capabilities they think it requires, to then reflect more closely on such capabilities recalling previous experiences in which they've been used and in this way, by comparing them with the current task, extrapolate which learnings would be there for the team in tackling the current task. The process is divided into three main sections, that are detailed below.

Section 1

In the first section, participants are asked, similarly to previous interventions, to think of the coming steps of their projects and select a challenging activity from them to reflect on.

Section 2

After picking a challenging activity, participants pass to the second section, in which are asked to reflect and articulate the desired outcome of such activity, and afterwards list down what would be the tasks that they would need to carry out in it. After articulating these tasks, participants are asked "What do you need to be good at to achieve this task?". This question is chosen to substitute a question such as "What are the capabilities necessary for this task?" as it is was noticed in the previous iteration that this questions sometimes may have lead to articulating capabilities as abstract skills or competencies. Moreover sometimes capabilities were found hard to articulate as such, leading to abstract terminology that felt less effective in conveying what participants actually meant. This time the aim is to see how to facilitate participants to reflect on them while keeping them more strongly linked to the activity itself.

Section 3

Once the capabilities necessary for the task are articulated by participants, they are used as a starting point for the third section of the activity. In this section, participants would find a series of questions aimed at guiding them to reflect on a previous similar experience in which they already used this capability and compare this previous experience with the current task in order to find differences that possibly make it necessary for them to develop additional skills or knowledge. The first of these questions asks to think in which situation they previously used this capability. Participants are asked to think of that situation, and in particular to think of what may have helped them to succeed in that specific situation. After this, participants are then asked to think back of their current task they need to achieve and to think of differences in the current situation, that may make it more difficult for them to succeed. Once these differences are found and articulated, participants are then triggered to better express what they need to be more capable of now, and finally how they would develop such capabilities by taking concrete actions.

Section 4

The activity ends with a wrap-up section that asks participants to summarise the takeaways from the activity: more precisely recalling the challenging task they wanted to be more successful to achieve, what they need to become more capable of to achieve it and how they think they could do it. This concluding part was added to the structure as a concluding template that participants could use on one hand as a reminder of their reflection, on the other as a starting point for them to further carry out (e.g., brainstorm activities) to actually plan their actions to develop such capabilities.

Fig. 14 in the following pages shows the structure of the reflective process, visualising its main steps and questions.
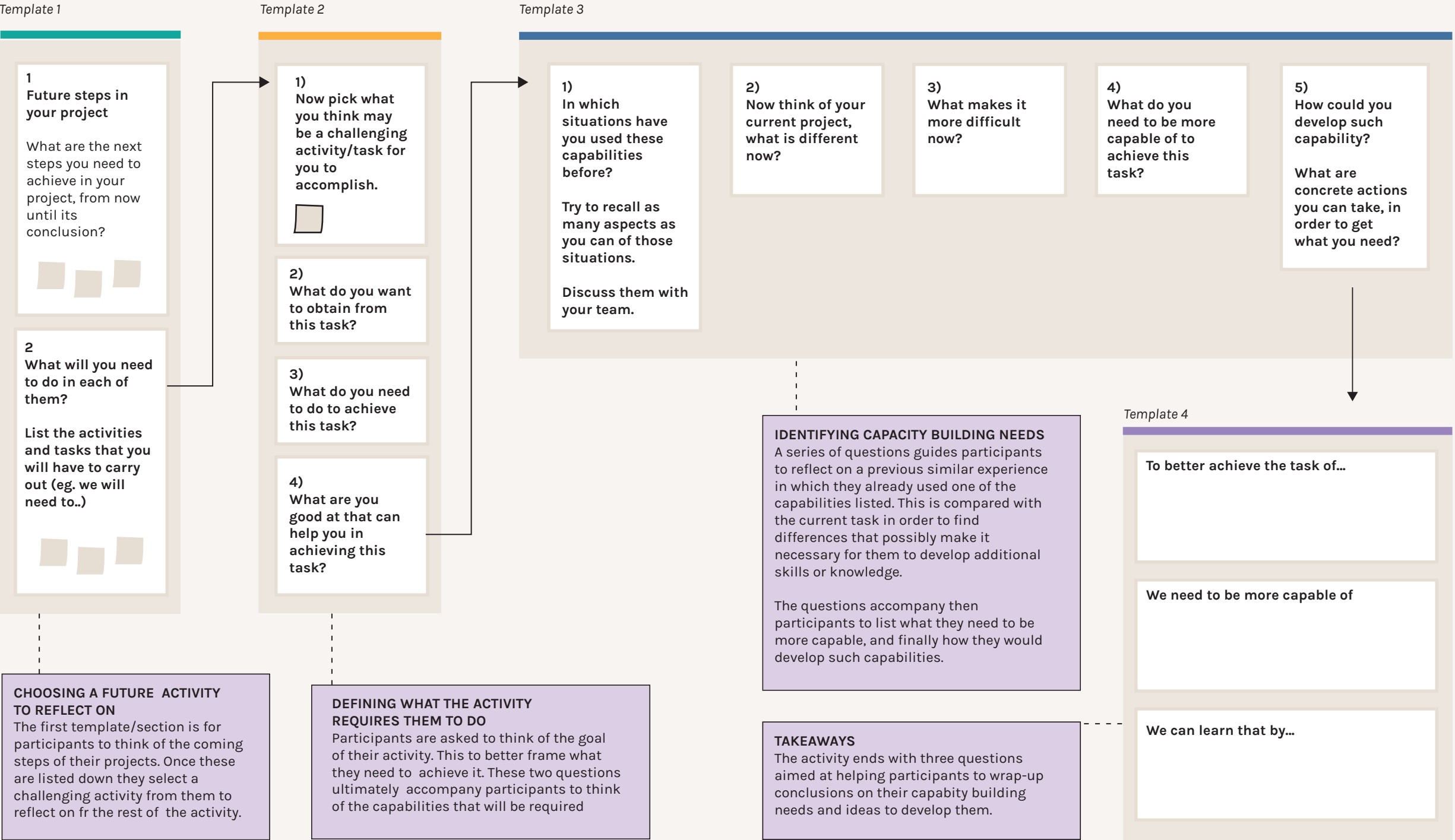
Design Intervention 4

1

Future steps in your project

What are the next steps you need to achieve in your project, from now until its conclusion?

2

What will you need to do in each of them?

List the activities and tasks that you will have to carry out (eg. we will need to..)

1)

Now pick what you think may be a challenging activity/task for you to accomplish.

2)

What do you want to obtain from this task?

3)

What do you need to do to achieve this task?

4)

What are you good at that can help you in achieving this task?

1)

In which situations have you used these capabilities before?

Try to recall as many aspects as you can of those situations.

Discuss them with your team.

2)

Now think of your current project, what is different now?

3)

What makes it more difficult now?

4)

What do you need to be more capable of to achieve this task?

5)

How could you develop such capability?

What are concrete actions you can take, in order to get what you need?

IDENTIFYING CAPACITY BUILDING NEEDS
A series of questions guides participants to reflect on a previous similar experience in which they already used one of the capabilities listed. This is compared with the current task in order to find differences that possibly make it necessary for them to develop additional skills or knowledge.

The questions accompany then participants to list what they need to be more capable, and finally how they would develop such capabilities.

To better achieve the task of...

We need to be more capable of

We can learn that by...

CHOOSING A FUTURE ACTIVITY TO REFLECT ON
The first template/section is for participants to think of the coming steps of their projects. Once these are listed down they select a challenging activity from them to reflect on fr the rest of the activity.

DEFINING WHAT THE ACTIVITY REQUIRES THEM TO DO
Participants are asked to think of the goal of their activity. This to better frame what they need to achieve it. These two questions ultimately accompany participants to think of the capabilities that will be required

TAKEAWAYS
The activity ends with three questions aimed at helping participants to wrap-up conclusions on their capability building needs and ideas to develop them.

Fig. 14 - Visualisation of the structure designed for Intervention 4

Set up and data collection method

For this test, initiatives members were asked to participate in the activity in team, meaning with at least more than one member from the initiative. One initiative from Designscapes program took part in the activity with two members. As previous interventions, an online session was set up communicating with participants through a Skype call, while the activity would be carried out with the support of Miro online tool.

Prototype

To support the reflective activity, four templates were created by utilising the online collaborative tool, Miro. For each section of the reflective process, a template is designed displaying the questions and including boxes for participants to answer utilising sticky notes. The templates can bee seen in Fig. 15.
The first template, containing the two initial questions was sent in advance to participants via email separately, with instructions. In the previous sessions, it was indeed noticed that elaborating and listing coming activities in the project subtracts useful time for the rest of the reflection. In the limited time span of a skype call as the one available with initiatives, this would make the whole activity less focused on the section regarding the articulation and reflection on capabilities. Participants can again use sticky notes during the activity to write down their answers as well as typing directly on the templates. In order to investigate the autonomous use of the tool, this time more attention is paid in not intervening at all during the activity unless participants would find themselves stuck and in need of clarifications.
To collect the data, methods previously utilised such as video recording, observation and feedback interviews are used.
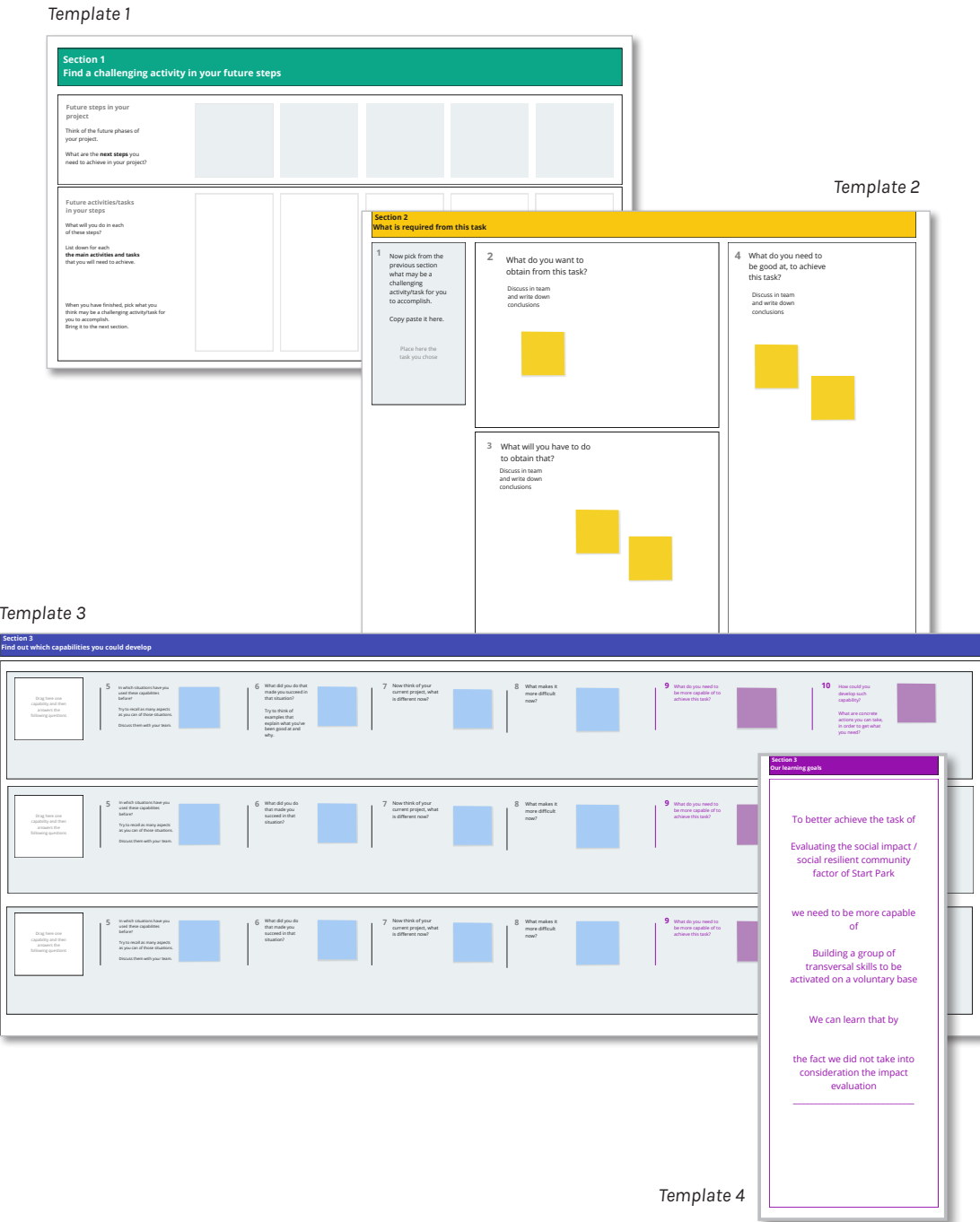
Fig. 15 - Templates designed for Iteration 4

Answering the research questions

How to facilitate participants in reflecting more in-depth on whether they possess or not the capabilities required from the task they need to achieve?

How does asking for concrete actions to take for developing the capabilities, help participants to gain more actionable results out of the activity?

How does the last Takeaway moment affect the activity?

Moreover, elaborating steps/tasks was not that easy for participants. This may be due to the fact that this is clearly a more difficult question to answer than the goal of the activity. however, maybe initial prompting questions sensitising participants on e.g., "What is the task about?" may, for example, facilitate more elaborating what will be the necessary steps to achieve it.

The step to start the third template felt slightly unguided, in fact, the instructions at the beginning of the third template were not so evident. Participants scanned through the capabilities articulated and chose what they thought might be the hardest one for them. In this case, participants felt that they did not possess at all the capability required for this task, but interestingly the question asking them for previous experiences triggered them to recall other projects in which they, in fact, had someone in their team that possessed those capabilities.

How to facilitate participants in reflecting more in-depth on whether they possess or not the capabilities required from the task they need to achieve?

Asking "What you need to be good at?" was answered by participants in different ways. Some answers were directly referring to a specific competence (e.g., "Scientific competencies")

while others were more tasks (e.g., "Engaging experts in impact evaluation, adapting/fitting methodologies to the community"). Participants appreciated the question as it kept more open answers available, making it easier to answer and inclusive of things that may have been excluded if only expressed through specific competencies (e.g., "It may be hard to express immediately as capability the fact of being able to engage experts").

The example of capability chosen by participants in this case is peculiar in the sense that is a really specific competence of scientific research, that they both do not possess. This brought them to think back of projects in which they had professionals in their teams who possessed these capabilities. The next questions in the reflection felt slightly off until participants came to the question "What is different now that makes it more difficult?", which triggered participants to reflect on the causes for which they currently do not possess the capability mentioned, as compared to the previous projects that they mentioned. This interestingly worked in a different way than expected (e.g., possessing a capability and figuring out what stretches it now) and made participants reflect on past choices that made a positive impact, and mistakes made in the current project that brought to lack these specific capabilities (e.g., "We did not plan in advance to evaluate the project in this way and we did not include these experts upfront").

The following questions of the reflection actually triggered them to think of how they could find a way to act in the current project to be as prepared as in the past, hence to involve those professionals that they need. In this case, it was hard for them to express a capability necessary to compensate the lacking of experts, and they answered the question "What do you need to be more capable of?" with "Budget". More interesting answers, however, emerged from the following question of "What are concrete actions you can take?" to which the participants articulated more concrete

approaches such as involving researchers proposing them a collaboration for a publication. Additionally, participants felt that questions 5-6 were quite overlapping. They indeed felt that the two may be incorporated and kept less orderly structured so to facilitate them to answer them in their own way and order.

How does asking for concrete actions to take for developing the capabilities, help participants to gain more actionable results out of the activity?

It was noticed how asking participants to think of concrete actions that could help them develop the capabilities resulted in this case in a quite concrete and propositive action such as proposing to researchers to make publications by collaborating with the project.

How does the last Takeaway moment affect the activity?

Asking participants to summarise the takeaways somehow proved to be a quite useful wrap-up in condensing the learnings from the activity and summing up the capabilities needed and the actions to be taken in the future. In this specific case, participants did not have time to go on and complete more capabilities in the template, but it is imagined that especially when the reflection goes on and more aspects and capabilities needed emerge, having to do a summary at the end of the activity can help participants in concluding and taking with them the most meaningful insights gained through the activity.

Overall considerations are that this time participants reflected only on one capability. This definitely reduced the time of the overall activity that lasted way less than previous interventions. However, it must be investigated how long it would take to reflect on the multiple capabilities required by the chosen activity.

Main takeaways on the reflective process

- *Asking participants what they need to be good at for the present task can be an open question that helps including as well capabilities that are not that easy to express. This may be considered better than asking directly for capabilities as compared to the previous test, in which these were abstracted from the situation and in this way less contextualised as concrete actions to take.*

- *Reflecting in the past may even suggest solutions that now are not taken into consideration by participants in their current projects. This is equally interesting as confronting the present with the past makes emerge not only new requirements but as well lackings compared to past experiences.*

- *It may happen that participants don't possess the capability required and formulated at the beginning of the activity. However, a reflection on this missing capability might bring participants to extrapolate useful learnings and strategies on how to acquire it.*

- *Asking participants for concrete actions to develop capabilities may positively trigger quite concrete solutions or strategies that can further motivate them to develop or acquire what they need.*

- *Having a final takeaway in the activity can help participants summarise the main findings of the activity to take them with them to further plan how to act on them concretely*

Answering the design questions

How can the tool be utilised autonomously by participants in a group reflection session?

Overall participants managed to carry out the activity way more autonomously compared to the previous intervention. Simplifying the overall structure compared to the previous version worked in that sense, as well as making the overall flow more fluent and not so interrupted and scattered between templates. The connection among templates could still be improved, as it was felt, for example, that the disconnection between template 2 and 3 was not completely necessary and the instructions in the squares were not so evident at the beginning. A stronger connection can be created between these two parts. For what concerns the last step of the activity, this one was perceived more separated from the rest and participants needed to be directed to it. The link with the last takeaway template must be made more explicit and for example, indicated at the end of the previous template.

When asked regarding doing the activity autonomously in the group, a participant mentioned that it may be necessary or helpful to have a facilitator to avoid that eg. in a group of 5-6 people discussions proceed for too long.

It was noticed how participants took a bit of time elaborating the tasks of the activity. This may indicate that reflecting a bit more on the task itself before articulating them could be helpful. Even adding some simple prompting questions to 'sensitize' participants could help. Overall considerations are that this time participants reflected only on one capability. This definitely reduced the time of the overall activity that lasted way less than previous interventions. However, it must investigate how a complete activity could take, meaning the investigation of a complete activity chosen from the project.

Main takeaways for the tool

- The link with the takeaway template was not immediately explicit, as participants needed to be directed towards that last activity.

- The leap to start the third template felt slightly unguided, in fact, the instructions at the beginning of the third template were clear but not so evident.

- For bigger groups, a facilitator may help in keeping time and group discussions scoped down.

Recommendations for next iteration

For the next iteration, a few adjustments can be made to make the activity slightly more fluent and compact. Moreover, an important aspect that is not yet testes is how the activity could work with a more numerous team and overall, how this would make it fit or not the actual practice of an initiative considering time constraints. To have an entirely autonomous activity, some adjustments can be made as well on instructions and links between each section of the activity. Another incognita is to still experiment with a larger team that in fact possesses a number of previous experiences. This can help gain important insights regarding the effectiveness of the reflection in making emerge new gaps and in facilitating participants to explore solution space and problem space more in-depth. Morever, it would give additional indications on how the activity could be carried out in a group reflection in initiatives everyday practice. These recommendations and adjustments will then inform and guide the design of the next iteration that will be tested in a fifth and final session with initiatives in the next section.

6.8 Intervention 5

In the fourth iteration, a few aspects emerged as possible improvements, especially regarding the tool. Through the reflective process in the previous iteration, participants stated that they learnt about a missing capability that they require for this task and also identified possible quite concrete ways to achieve it (involve/engage researchers and experts through invitations for publications). However, the activity showed that the tool could be improved in its design, especially shortening a bit the activity so to reflect on more than one capability, by compacting more the different sections (eg. separation among template 2 and 3 was not felt necessarily contributing to the tool). An aspect that remains to investigate from the previous intervention is the time needed to complete more reflections than just on one capability and possibly to experiment this with a more numerous team, making the activity a bit closer to a reflective session that an initiative may have in the group and in this way providing additional insights to the ones found previously regarding its possible implementation in the initiatives' practice.

Additional details worth exploring for the tool are for example more clear instructions or the introduction of the tool that in this way can eliminate completely the need of an external facilitator. The activity could as well benefit from a clearer and more compact design of the layout itself, to strengthen the connection between the project activity chosen at the beginning and the capabilities articulated through the reflection. More aspects regarding the design of the tool itself were that the template could be better organised to not overcrowd with questions the boxes and spaces for the answers on post-its, arranging in this way more space to insert post-its encouraging multiple answers when needed (e.g., as in the case of recalling multiple experiences that could relate to the current challenge).

Research questions for this intervention

For this fifth and last intervention, new research and design question are formulated to investigate the aspects mentioned above and guide the design of the prototype.
The questions are the following:

Research questions

How to facilitate participants in reflecting more in-depth on whether they possess or not the capabilities required from the task they need to achieve?

Does compacting the whole activity in one template benefit the reflection?

How to make sure to keep explicit the link between the outcomes articulated throughout the reflection and the initial activity chosen?

Design questions

How to make the whole activity more fitting in a reflective session for participants in their practice?

Structure of the process

The process is structured in three main sections.

Section 1
In the first section, participants are asked, in the same way to the previous prototype, to think of the coming steps of their projects and select a challenging activity to reflect on in the rest of the session. Once this activity is chosen, participants drag it to the second section that starts with a second template.

Section 2
After picking a future activity to reflect on, participants start the second section. This section is composed by nine steps in total. Participants start by dragging the activity they want to reflect on on the template. Afterwards, participants are asked to contextualise the activity through triggering questions like "What is the activity aboout?", "Who is involved?", "Where/when will this take place?". The third question asks them, as in the previous iteration, to articulate what they want to obtain from the task. The question slightly changed to make its formulation slightly easier and it's now "If the task is successful, what do you obtain?". Participants are then asked to discuss and write down what they will need to do to achieve their objectives for the activity, listing the main tasks that will be entailed in it. From the fifth question the focus shifts gradually to capabilities. Participants are asked to reflect on what they will need to be good at, to achieve the chosen task and answer listing maximum four capabilities, so to choose the most important ones for their activity. When answering this question, participants are asked to utilise verbs, as it is assumed this would help them to make the answers more action-oriented and contextualised, avoiding abstract competences. From here on the activity is developed in four columns, each starting from one of the coloured squares just mentioned. In this way, a series of five questions will accompany participants to reflect on one capability at a time, of the ones they listed answering to question 5.

The reflection on the capability useful for the activity starts then with question 6 "For what have you used this capability before?" Here participants are asked to recall experiences from the past, either as a team or as individuals, in which they applied already the capability they answered with before. To give an example, in case participants' answer to question 5 was "We need to be good at mediating among citizens" then in the sixth question they would need to think of previous experiences in which they did something similar. To answer to this question, a quadrant with four dotted empty squares is designed to let participants describe up to four experiences (as it is imagined that they may be multiple ones). Moreover, learning from the previous intervention the follow-up questions "What did you do back then?" and "What were you capable of doing in that situation?" and "Why?" are included as follow-up questions. The answers are this time organised differently. Post-its are placed in every dotted square, each square having a different colour of post-its. A big post-it is provided to write down the experience or episode that participants recall, while smaller post-its are around it to write down answers to the follow-up questions if participants need to.
After recalling and describing previous experiences in which they applied the capability at stake, participants are asked to compare those situations with the one of their current project, with the aim of finding the differences that will make the task now more difficult to them. The answers can now be put in an empty box. After naming and writing down the difficulties found in the current situation as compared to previous experiences, participants are asked to think of which new capabilities they will likely require to still succeed in the task. Finally, once these are articulated, the reflection concludes with a question aimed at triggering participants to think of how they can develop such new capabilities. In this case, questions are made more specifically regarding the resources they think may help them, or even professionals that may possess these capabilities and whom they could learn from.

Once one column is complete, participants can go on with the other ones reflecting on the other three capabilities they chose.

Section 3
The third and last section involves the Takeaway template that, as in the previous iteration, aims at helping participants wrap up conclusions from what they learned and reflected on in the activity. In the template they write first the activity they picked at the beginning, in order to link the capabilities needed to a concrete and tangible step in the project. Afterwards, they are asked to sum up what is that they need to be more capable of and how they can go and develop such new capabilities.
The template ends with a suggestion to carry out a second activity (eg. brainstorming) to elaborate a more concrete action plan that will lead them to learn what they need.

The following pages show in Fig. 16 the structure of the process designed for this intervention.

Design Intervention 5

1)
Future steps in your project

What are the next steps you need to achieve in your project, from now until its conclusion?

2)
What will you need to do in each of them?

List the activities and tasks that you will have to carry out (eg. we will need to..).

CHOOSING A FUTURE ACTIVITY TO REFLECT ON
The first template is the same as the previous intervention and is aimed for participants to pick a future activity in their project, to reflect on.

IDENTIFY CAPABILITIES TO DEVELOP TO SUCCEED IN THE ACTIVITY
This template of the tool compacts together what were before separated sections (see Intervention 4). A series of questions guides participants to define what they need to to and to be good at to achieve the task at hand. From there they reflect on one capability at the time of the ones formulated (max. 4) recalling past experiences to compare with the present situation, in order to articulate what now makes the task mre difficult for them. From this reflection new capabilities are formulated and with them, the possible actions to take for their development.

1)
Now pick what you think may be a challenging activity/task for you to accomplish.

2)
Contextualise the activity

What is it about? Who is involved? Where/when is it happening?

3)
What do you obtain if this task is successful?

4)
What do you need to do?

5)
What do you need to be goood at to achieve this task?

6)
For what have you used this capability before?

7)
Compared to your previous experiences, what's new in the current task?

What aspects make it more difficult for you?

8)
What new capabilities you need to develop to succeed in this task?

9)
What steps can you take to develop these new capabilities?

TAKEAWAYS
The activity ends with three questions aimed at helping participants to wrap-up conclusions on their capabity building needs and ideas to develop them.

To be more successful at...

We need to be more capable of...

To do so, we can...

Fig. 16 - Visualisation of the structure designed for Intervention 5

Set up and data collection method

For this test, one initiative from Designscapes took part in the test with four members of the design team actively participating in the activity. Similarly to all the previous interventions, an online session is set up communicating with participants through a Skype call, while the activity is carried utilising Miro online tool as support. To collect the data, video recording, observation and feedback interviews are done.

Prototype

To support the reflective activity, three templates are created on Miro. For each section of the reflective process, a template is designed displaying the questions and including boxes for participants to answer utilising sticky notes. The templates can bee seen in fig. 17. The first template remained the same as the previous intervention. It contained the two initial questions prompting participants to think of the future steps of their projects and the activities that they entail. Participants filled in this template as a warm-up activity before the session, in order to give time to the actual reflection.

The main activity is carried out on a single template, that includes all the reflective questions addressing the activity chosen by participants. This template, as mentioned in the description of the activity structure, includes a first part with three questions to be answered in white boxes with post-its. From the fifth step, the template is divided into columns, each related to a capability formulated by participants. The columns follow the final five questions with respective boxes that host participants answers on post-its. The sixth question, as mentioned earlier, involves answering with different experiences from the past, for this reason, a quadrant divided into four dotted squares is provided to describe up to four different experiences. The other boxes that

follow are free and participants are not restricted in any way either in the number of answers or in the positioning of the post-its. The third template is the Takeaway template, that differently from the previous intervention now does not imply typing instead participants can answer again, utilising post-its.

Template 1

Template 2
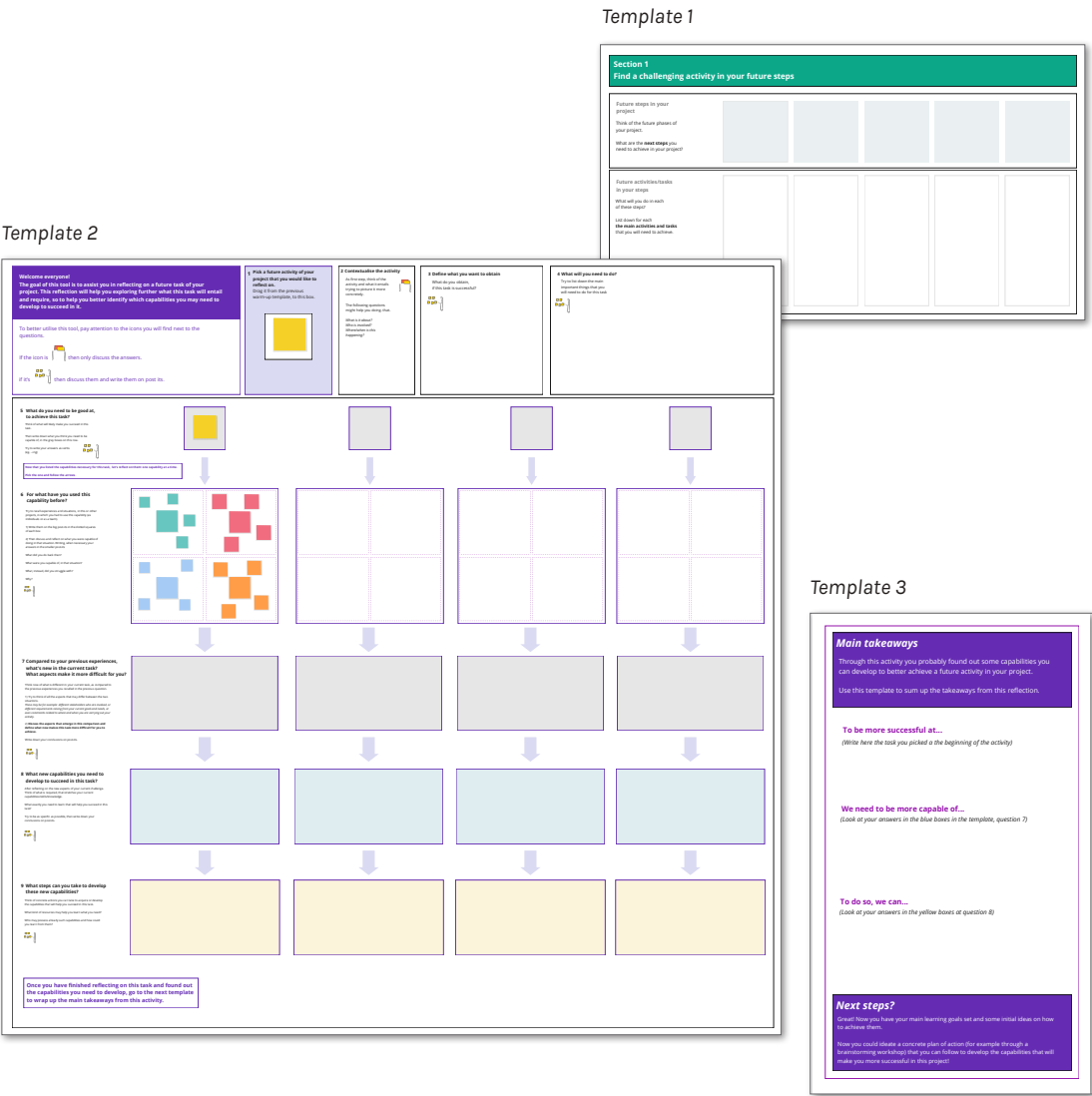
Template 3

Fig. 17 - Templates designed for Iteration 5

Answering the research questions

How to facilitate participants in reflecting more in-depth on whether they possess or not the capabilities required from the task they need to achieve?

This last iteration provided some more useful insights regarding the articulation of capabilities. To analyse them, we can start looking at the results that came out from the fifth question onwards in the activity. Asking to express in verbs wanted to bring the capabilities to be actions and in doing so making the answers 'more contextualised or action-oriented'. It was noticed, however, how this actually worked against that intention as participants wrote down only verbs and, in fact, abstracted from the capability for its context after their initial formulation (eg. when it came to reflect on the third column of the activity someone asked "What did we mean exactly by 'building'?"). This may suggest actually to leave this question as it is, open to participants to choose how specific they want to be or can be (eg. as done in the previous prototype). In the case of the ability of 'engaging', they afterwards specified "We need to engage passers-by, not people that come there intentionally". Specifying this small but important detail, which did not emerge in the initial articulation of what they needed to be good at, helped to make the objectives and the examples found for comparison more specific.

Restricting participants to give only four answers of what they think they need to be good at for the success of a task made them discuss and reflect more than once on the priorities and important requirements of the task that they chose for the session. One participant said, "Let's choose them well because then we're bringing them with us in the next sections all the way". An insight was that confining more the choices of participants may indeed help them reflect on which capabilities may be most important in a situation, giving more quality to the reflection as more meaningful skills are selected for the task at hand.

Following the activity, Question 6 asked participants for what they had previously used the capability they named in the previous question. Answering to this question showed slower than expected. This due not to the lacking of examples, but rather on the amount of them. On one hand, showing participants four quadrants all filled with post-its triggered them to find four examples. This created a bit of confusion initially as they felt the need to fill in the quadrants with examples, but felt that this was not necessarily helpful for the reflection itself. A learning, in this case, is to leave empty spaces to avoid misunderstandings such as the one described and complete freedom to participants to choose the number of answers they want to give. The smaller prompting questions that were added helped participants describe those situations. They mentioned later that this was helpful in making more specific and precise comparisons with the current task situation.

When it came to answering question 7, in which participants needed to recall and list past experiences for which they utilised the capability chosen, comparing with multiple examples described gave participants a way to compare different aspects of their current task with previous experiences. Examples are "At Fioridicampo, people came on their own choice. At Sorgane (current location) we're dropping there out of nowhere". These comparisons were actively made by all participants who built upon each other or even started debating on them. This made the activity slightly longer than expected but definitely helped them make more specific examples of differences between current and past situations articulating better answers for the reflection. Unfortunately, at times these comparisons lost their specificity when it came to elaborate what new capabilities were required. Here more general answers sometimes were given such as "communication skills". When asked "What capabilities you need to develop?" participants sometimes replied more as they were answering with new tasks or requirements (e.g.,"to mediate now is fundamental to share the knowledge with the people

there"). What was important to do was articulated sometimes in nice detail expressing purposes and with examples such as "we need to interpret quickly the inputs we will get, without waiting too much we need to concretise what they tell us somehow". What is felt is that this nice information was then hard to express as a capability, and it was consequently lost in the reflection. Probably these examples may have benefitted from questions that asked them more 'how' they would need to do these things more concretely in order to articulate more concrete tasks and actions.

When trying to articulate how to develop the capabilities (Question 9), the answers from participants were again not always so specific. They actually told later that they felt that some of the solutions found sounded to them a bit generic and that right after finding a new capability one may struggle in knowing already how to develop it. The questions regarding resources and people who may possess the capabilities in some cases helped to formulate more concrete answers. Some professionals from their area or even design studios were mentioned as valuable contacts to approach and ask for their work and experience in the context of work. On the other hand, some really generic answers were also given such as 'study on textbooks', 'search online' etc. Unluckily, the lacking of specificity of some new capabilities as formulated may have contributed as well in making this last task more difficult for participants.

How to make sure that findings at the end are more clearly connected to the initial activity chosen (that this link remains stronger throughout the activity making it more explicit that one is reflecting to be more capable of doing that task in particular)?

Throughout the activity, the main task chosen at the beginning of the activity was mentioned several times by participants in the reflection. Even when they came to reflect on the third column,

participants referred to it specifying more their answers. This is a positive sign that compacting the activity may have contributed, in fact, in relating more the thoughts and answers of participants to the main task given. This was an improvement as compared to previous versions in which templates and questions were not always so connected together.

Main takeaways for the reflection

Expressing 'requirements' such as "Now we need to be capable of.." was easier for participants than articulating capabilities. Additional work is required to articulate those requirements in terms of capabilities.

Asking for multiple examples and describing them facilitate a more detailed comparison with the current task. That helped participants to find some specific important differences in the current task situation.

Finding ways to acquire or develop capabilities can be difficult for participants, especially if these capabilities are new to them they may not know already a strategy to acquire them. This question can play a role of action starter, but if too generic answers arise it can as well lose its meaning to participants that can consider it too banal.

Asking for professional figures from whom to learn from seemed a more interesting question, which probably made participants think more of known people that they could concretely engage.

Compacting the activity made it easier for participants to keep in mind the task they were reflecting for throughout the whole activity, better the capabilities found and the task they are ultimately useful for.

Answering to the design questions

How can the activity work in more real practice?

How to make the whole activity more fitting as a reflective session for participants in their practice?

In this iteration the activity was carried out for the first time with an active group of four participants, all discussing and actively participating in the reflection. What may have helped, in this case, was that the initiative was an Italian initiative and this stimulated participants to freely discuss and think out loud, giving me the possibility to understand everything they were saying and give them the chance to do it without feeling awkward. The group autonomously carried out the activity, confirming that the template was clear enough for a group to utilise it in a session. An additional aspect confirmed by this test was that in carrying out the activity it the presence of a facilitator is required. In the case of this test, a group member naturally took the role of facilitator of the session from the beginning. She, in particular, kept her group focused when they were going slightly off track, as well as writing most of the answers down on post-its while discussing in the group. The figure of a facilitator showed to be important, as mentioned in the previous activity, but as shown in this case, this figure can as well be a group member of the initiative itself without necessarily the need of any external help if the group is enough self-disciplined.

Participants liked the overall methodology and type of activity, they found it useful, as mentioned, in highlighting important aspects of their project that require adjustments from them or new skills. An important suggestion from them was, however, the fact that the activity should be more streamlined and avoid some redundancy especially when it comes to finding previous examples. A suggestion from a participant was to for example leave more flexibility and agency to the user in choosing the

number of columns (capabilities) to reflect on, advising that maybe two instead of four could be fine and actually make possible to reflect on more than one activity in one session of two hours. The time factor is in fact still a limitation of the current proposal. Even though compared to previous versions this prototype helped participants to reflect on three capabilities in two hours instead of one in one hour. The tool can be definitely improved in such direction, probably also benefiting the overall flow by simplifying, for example, the step of recalling past experiences by giving participants a free amount of examples to choose and not suggesting they need to put four. Overall, the tool can be a bit more flexible and, as mentioned, give participants the chance to duplicate parts such as columns, to decide on how many capabilities they want to reflect on and let them own the tool and the activity itself more than now. In fact, this was defined by participants as slightly overstructured as compared to other activities that they carried out on Miro, let's say brainstorming activities. The tool might have been, in fact, over-structured considering the flexibility and openness that Miro guarantees.

Participants stated that the tool was useful to realise the presence of some lackings and to give proof of something they are lacking for their project now, namely the communication part. One participant stated, "At the end, it makes reflect on the fact that I need to put more attention on this or that aspect". Participants stated that the tool could be useful in their projects, in particular at the beginning of a project. For example, it could turn particularly helpful in the phase of writing the application, as the team could use this reflective activity to figure out better what capabilities they expect to need and in this way decide if they need different professionals on board. A quote from a participant in regards to this was, "If we did that when we started the project we may have realised before that we could involve a person dedicated to the communication part for the project, or even figured and started to study upfront the theory that we studied during the quarantine period."

Main takeaways for the tool

The procedure must be more streamlined to reduce timing and avoid slowing down the reflection in some specific points (eg. recalling examples from the past).

The tool must give more flexibility to participants and give them the chance to reflect on more than one activity in their project in the time span of two hours. This can be done by reducing the capabilities to reflect on for each activity (eg. from four to two) so that participants will focus on just fundamental ones reducing redundancy or overlapping, and making the overall reflection more efficient.

The tool can be used by the initiatives autonomously. A facilitator, however, is needed to make sure the group sticks to the questions in the template and does not drift too much in discussions. The facilitator role can easily be taken over by a member of the group itself making the activity easier to set up in the initiatives' everyday practice.

The activity may result useful in a project in the starting phases of the project, for example in the stage of setting up the project team understanding which competencies will be important is a fundamental step that also helps to allocate resources for the project.

Overall, it can be said that participants found the activity useful and potentially valuable in their practice as a way to support them in anticipating which competences they will need. In order to be implemented, however, the activity should become more streamlined so to better fit the needs of time constraints and more flexible so to let them the freedom to adapt it accordingly to what they want to reflect on in their project.

This last intervention again provided useful insights informing both the design and the implementation of a reflective tool and activity for urban innovators. These insights were discussed and illustrated here. The series of iteration comes to its end, concluding as well the research and design activities for this project. The main insights, limitations and recommendations for this project will be further articulated in the following chapter dedicated to discussing the final conclusions of the project.

7.Conclusions

The present chapter is the final chapter of the report in which conclusions are drawn regarding the project. The chapter illustrates a reflection on the overall insights drawn from this project, regarding both the research and the final design proposal.
Afterwards, the limitations of this project and recommendations for further research are discussed. A final research activity is described, aimed at contributing to Designscapes research on DEI capabilities, illustrating the insights on capabilities and challenges for innovators emerged throughout this research project. The chapter will finally conclude discussing the contribution of the current project to the design practice, and to Designscapes with a personal reflection on the experience of this graduation project.

7.1 Project recap

Before presenting the final considerations on this project, this section presents an overview of the process carried out recalling its original intention as well as the journey that gradually brought to the final proposal for a reflective tool for DEI initiatives. The present project started with the intention of exploring how design could be utilised to support urban innovators, expert and diffuse designers, in building the capacity needed for running DEI initiatives. More specifically, the focus of this exploration was to develop a methodology that could support these initiatives to identify the capacity building needs that emerge as relevant for the accomplishment of their challenges. The exploration started by gaining a general overview of the context of Design Enabled Innovation, which is illustrated in the introduction of the project, in Chapter 1. The second step was to better identify a research direction that could serve as a backbone for the further development of the methodology and tool for initiatives. Finding a research direction, as illustrated through Chapters 3 and 4, brought to a refinement of the initial assignment and design goal in *Design a reflective tool that enables urban innovators in developing their own Designscapes capacity building trajectory in order to facilitate continuous improvement and diffusion of capabilities.*

The project proceeded then investigating how a reflective process could be developed to help urban innovators in framing the capabilities they need to develop for their projects. Qualitative research activities helped to initiate reflection moments with urban innovators from Designscapes project, providing useful insights that informed the next and last series of research activities, namely a series of iterative design interventions aimed at developing a reflective method and tool useful for initiatives' teams in framing the capabilities they need to acquire for their projects.

Through five iterative interventions, both a reflective process and tool were gradually developed, resulting in the final design proposal of a reflective tool for online activities for DEI initiatives in their capacity building process, described in the last iteration. The design proposal shows opportunities for improvement that will be discussed in the following sections together with recommendations for future work. Additionally, the research carried out in this project generated a series of insights regarding the structuring of a reflection for the capacity building process of a DEI initiative. These insights represent the knowledge generated through this research on how to design reflective processes in support of DEI initiatives self-development and will also be discussed in the next sections.

7.2 An online reflective tool for urban innovators

The final proposal for this project is an online reflective tool that urban innovators in DEI initiatives can utilise to reflect on the future steps of their projects, with the intention to explore and identify new capabilities that they will need to develop to succeed in them. The tool is structured as an online reflective activity that can be carried out by initiatives in a team, as well as individually, with the support of an online collaborative platform such as Miro. The reflective tool is structured on three main templates and corresponding sections. The first section of the activity is dedicated to list and choose a future activity in the project that the team wants to reflect on. Once one activity is chosen, participants pass to the second section of the tool, which is focused on exploring and identify the capacity building needs that the team has regarding the chosen activity. The participants are accompanied in articulating first what the project activity entails, what they want to obtain from it and what they expect

they will need to do. After this description, the tool invites participants to think of what they will need to be capable of to succeed in the activity they selected. Participants elaborate then what they think they will need to be good at to achieve the task, listing the main capabilities that in their opinion are crucial. Once the main capabilities are listed (maximum four), participants are then pushed to reflect on each of them separately, with the aim of confronting their actual capabilities with the current task requirements and characteristics. They are asked first to recall previous experiences in which they used a capability before, to then compare those situations with the current task and identify what are new challenging aspects that make it now more difficult for them. Subsequently, innovators are asked to articulate what they think are new capabilities they need to develop to succeed in the task, given these new aspects, and what steps they could take to develop them.

Insights on the tool

The final design proposal of a reflective tool for initiatives demonstrates to be helpful for urban innovators in reflecting on future steps in their projects and identify in them what could be relevant new capabilities to develop. The tool has been said potentially useful by initiatives members especially in initial stages of a project when it is crucial for them to understand how to build a team for their project and figure out which competencies are needed. The activity shows in this way to be relevant and valuable for an initiative to gain awareness regarding their needs of capacity-building when facing a DEI challenge. In terms of usability, the tool showed to be self-explanatory in terms of instructions and overall structure, as the team could carry out the activity in complete autonomy without the need for external help or facilitation from the side of the researcher.

Limitations of the tool

Limitations highlighted by initiatives for the implementation of the tool in their practice concern two main aspects. The first one is the fact that the activity is still quite time-consuming in proportion to the number of activities that it helps in reflecting on. For a more ideal fitting into the practice of initiatives, the activity should indeed take maximum between 1.5 and 2 hours. Moreover, the tool should give the chance to reflect, within that time frame, on multiple future activities of the project in order to make the overall session more fruitful for initiatives.

A second aspect highlighted in the last test by initiatives' members concerns the flexibility and ownership of users in the use of the tool. This translates for example in having a more flexible structure of the activity rather than a fixed, blocked template. This would give the possibility for participants to adapt the reflective activity to their time and needs, choosing a number of activities to reflect on, as well as the proper amount of capabilities for each of them that they would like to analyse better. In this way, innovators would own more the tool and decide themselves what is most important to spend their time reflecting on, without having to be too forced by the constraints of a fixed, all-encompassing template as in the current version.

Additional limitations that were noticed again in this final version concerned the gap between the richness of information generated by the discussions in the teams and the summarised information that derives from writing on post-it notes during the activity. This gap, highlighted in more than one intervention, is not yet solved by the current tool.

The last limitation is regarding the difficulties in articulating capabilities as such. In fact, the tool proved to be supportive in identifying new requirements and tasks that are important for the new task, but less effective for what concerns the articulation

Template 1 - *CHOOSE A CHALLENGING FUTURE ACTIVITY*

1. Future steps in your project

What are the next steps you need to achieve in your project, from now until its conclusion?

2. What will you need to do in each of them?

List the activities and tasks that you will have to carry out (eg. we will need to..).

Template 2 - *IDENTIFY NEW CAPABILITIES TO DEVELOP TO SUCCEED IN THE ACTIVITY*

1. Now pick what you think may be a challenging activity/task for you to accomplish.

2. Contextualise the activity

What is it about?
Who is involved?
Where/when is it happening?

3. What do you obtain if this task is successful?

4. What do you need to do?

5. What do you need to be goood at to achieve this task?

6. For what have you used this capability before?

7. Compared to your previous experiences, what's new in the current task?

What aspects make it more difficul for you?

8. What new capabilities you need to develop to succeed in this task?

9. What steps can you take to develop these new capabilities?

Template 3 - *TAKEAWAYS AND NEXT STEPS*

1. To be more successful at...

2. We need to be more capable of...

3. To do so, we can...

Template 1

Template 2

1   2   3   4

5

6

7

8

9

Template 3

1

2

3

Fig. 18 - Final tool overview

of what are the exact capabilities themselves. As shown in the findings from the last iteration in Section 6.8, participants managed to frame successfully what now they need to do better, but this still is not always expressed in a form of an ability to develop. Participants raised the struggle in articulating a capability that is new to them, as the reflection brings out challenging tasks that participants may have never experienced before. The present version necessitates a further step consisting of interpretation and matching of new tasks/requirements with the corresponding capabilities as such. This part could be for example carried out by Designscapes researcher when analysing the outcomes of the initiatives' reflective activities.

Recommendations for further research and implementation

In line with the limitations found, some recommendations are also given for further research on the tool and reflective process for initiatives. The research done for this project took place mostly online. On one hand, this has permitted to investigate how a reflective activity could be carried out in a particular and somewhat unusual setting that permitted group reflection from remote. On the other hand, another investigation can, in my opinion, be interesting for what concerns the real-life context of initiatives and the possibilities of having an off-line reflective activity as part of their practice. Changing the context may bring to new insights and considerations that would inform and require changes in the current design proposal.

Moreover, as noted before in the limitations of this tool, a more specific recommendation would be to investigate methods that go beyond or complement the use of writing as the only method to collect and store the insights and information generated in the discussions in the activity. As it was mentioned before, the act of writing, especially on post-its, pushed participants to simplify

their answers and sometimes this caused interesting information to get lost, making the outcomes on the tool be less specific and rich that they could be. This factor is important to take into account as questions may build on each other answers, and also because the information written in the activity may be left for a while after its conclusion to be picked up later a point. In that case, more precise information would be helpful for participants to remember exactly what they meant with their answers.

7.3 Guidelines for reflective activities in autonomous capacity building processes.

The present project investigated how a reflective process and activity could be structured to facilitate urban innovators in identifying capabilities they should develop to succeed in their projects. Throughout the project, several insights and takeaways were gained and described correspondingly to each research activity in the report. The present section summarizes these insights and provides an overview of the main learnings regarding the structuring of a reflective process for the identification of capacity building needs. These learnings are considered useful guidelines for practitioners interested in supporting and designing for the self-development of innovators such as DEI initiatives.

Guide innovators to articulate what is required from a task, to then compare it with previous experiences
When structuring a reflection to identify new capabilities to acquire it results useful to guide participants to reflect first on the present challenge and then reflect on how they previously tackled similar tasks in their experiences. By doing so participants should be guided in reflecting on what they are already capable of doing,

emerging from past experiences they had, compared to what is required from them now. By recalling previous similar experiences with a task can, in fact, help them to compare previous situations to the present requirements and in this way make emerge what are new challenges. When doing so, it is useful to articulate first what is required from a task. This facilitates participants in acknowledging and imagining what they will need to do, sensitising them before comparing their capabilities with the requests of the task at hand. First articulating the requirements of the present task makes sure that the reflection of participants revolves around the relevant aspects that will determine the success of the activity at hand.

Utilising multiple examples can help define more precisely a picture of the current task's new characteristics

A comparison is effective in making new aspects emerge especially if it stimulates a reflection on multiple examples (eg. multiple previous experiences that can be related to the present one) and aspects of these situations (e.g., recalling who was involved, what was the intention). Situational descriptions help a lot in articulating better what are the differences that may emerge in a future circumstance as they make think of less obvious aspects affecting past and present circumstances.
 In this sense, asking participants to provide examples, episodes, or even anecdotes contributes to a more effective comparison and reflection on concrete aspects.

Help innovators to reflect on the aspects that make them more or less capable

Being capable of doing something is related to the circumstances in which that something is carried out. Depending on the circumstances the same person could, in fact, be more or less capable of achieving a task. It is important, then, to push innovators to take into account these circumstances rather than abstracting what they generally possess as abstract capabilities. One can possess the capability of 'empathising', but

being capable of empathising depends on who someone needs to empathise with (e.g., it might be really different to be good at empathising with kids as compared with elderlies, or to be used to work with similar age groups than yours rather than different ones). Reflecting on these aspects can help participants better framing to what extent they are capable of achieving a task.

Involve a group of people who possibly shares previous experiences

A reflection aimed at framing the capabilities of a team definitely benefits from being carried out in a group. In fact, multiple perspectives of participants can add on top of each other when discussing the coming challenges as well as previous experiences that can be related to them. It needs to be taken into account, though, that a team is likely to benefit from this especially if the members share previous experiences together. The fact that the team shares experiences together turns out to be fundamental in this process of comparison and reflection. Having the possibility to discuss shared experiences pushes each of the team members to contribute more to the refinement of both problem and solution spaces, improving significantly the framing of new challenges resulting from it. This represents a huge advantage in the process of framing more specifically the coming challenges as well as the learnings from the past.

Balance a clear structure and natural flow

It was observed throughout the series of activities how important is to create a process that is structured enough to guide an effective reflection and help participants to not get lost into discussions and diverging topics. On the other hand, it simultaneously emerged that it is equally important to not structure the reflective process with too many steps and instructions. This may, in fact, hinder the reflective and discursive part of the activity that usually generates when participants gain a more naturally a 'flow' in their reflection.

The importance of collecting information

Part of the reflection and discussion ends up being not recorded on the tool supporting it, as it happens mostly either through talking or thinking. It is important to take this into consideration when designing for a reflective activity that writing down conclusions, as found out through this research, may not in itself be sufficient to collect the richness of information that can be generated through a reflection and a group discussion. The necessity of noting down conclusions to proceed in the steps of the reflection, can at times work against keeping the richness of it. Inevitably information gets lost and writing down answers necessarily erases information. The explicit role of note-taker could be for example necessary to reduce the loss of information generated through the discussion.

Provide facilitation

It was understood how the activity, especially if carried out in groups, necessitates facilitation. The role of facilitator could be taken from an external professional so that all the team members can focus and contribute fully to the reflection. In the absence of an external figure, this role can be taken as well by a team member, as it happened in the last activity. On top of facilitating the same person should as well consider the aspect of note-taking or collecting information during the discussions, to avoid the information loss described previously.

Articulating what you need to be capable of,
rather than capabilities themselves

Articulating lacking capabilities was found complex. It somehow requires, in fact, to dig into less explicit competencies and skills crucial for the achievement of a task that in itself can be unknown to an innovator. It resulted easier for innovators to articulate what are new things that they needed to be capable of rather than the capability itself (e.g., "to mediate now is fundamental to share the knowledge with the people there"). In this sense, asking what do you need to be good at or capable of, might be a

better alternative to asking for capabilities themselves. In this way, more concrete answers and possibilities come up. This may help as the goal is to make the results of this reflection concrete, actionable for innovators, meaning that they must be facilitated in understanding what they need to learn, but together with it, in which way they could go and learn it.

To suggest next steps, help articulating a 'learning network'

To turn the new capacity-building needs into capacity-building steps, the need is to accompany participants in imagining how they can develop the capabilities needed. For identifying actionable strategies participants could be helped to identify first who possesses such capabilities and could help them acquire them. Identifying a 'learning network', together with possible resources (eg. courses, material) is seen as a promising starting point for participants to further plan and develop autonomously their own capacity-building process.

Limitations on the research approach

Limitations on the research approach
The present project was carried out starting with a literature review that served as a theoretical backbone and base to orient following Research Through Design interventions. Looking back, the research may have benefitted from more literature or desk research focused pragmatically on the topic of reflection and its practice, exploring, for example, a more in-depth a state of the art of the existing methods and tools, not only from the perspective of their theoretical functioning and process but looking at their application constraints and benefits. Such exploration could have helped listing common characteristics and requirements that would have informed from the start the development of the methodology for initiatives.

Another limitation emerged reflecting on the series of RTD interventions carried out in the third phase of the project. The series of interventions in this phase consisted in a number of iterative design prototypes aimed at exploring how to structure a reflective process and simultaneously to find out the constraints and requirements to inform the development of a tool to support such process. Looking back at this approach, it could have been interesting and beneficial for the development of the tool to try a more explorative, varied and confident approach aimed at investigating a more diverse range of aspects regarding how the practice of reflection could be facilitated for urban innovators in their practice. A limitation found in the approach followed, in fact, is that the research activities were focused and developed on the theoretical application and functioning of a reflective approach more than on exploring its possible versions in the real everyday practice of innovators. The research would have probably benefitted from investigating more the constraints of reflection as a practice in the work of urban innovators, before framing reflection in the form of a tool for them to utilise in their projects. The second phase of research, for example, could have been dedicated more to find out what it means in practice for urban innovators to reflect on their projects and what constraints are there to overcome with the intention to make it a more suitable practice. This step could have generated more precise contextual constraints regarding the difficulties of reflection as a practice for urban innovators, as well as the difficulties of reflecting on a DEI project to articulate capabilities.

7. 4 Contribution to design practice

This project explored how design could be utilised to support DEI initiatives in developing their own capacity building process in the complex challenge of embedding innovation in urban contexts. The research carried out resulted in a methodology in the form of a reflective tool, that contributes to the capacity building of DEI initiatives in their processes of embedding innovation. Additionally, a series of guidelines are formulated to inform the structuring of reflective activities for autonomous capacity building processes. The limitations and recommendations discussed suggest that the outcome still has opportunities for improvements. Nevertheless, the reflective tool and findings resulted from this research represent a contribution to designers directly involved in social innovation processes and practitioners interested in supporting them. The series of guidelines can inform the work of practitioners interested in designing activities for teams and initiatives' self-development. The tool itself can be utilised as a research tool by researchers interested in supporting DEI initiatives or as a reflective activity by initiatives in their practice. Concluding, the reflective tool and guidelines together provide examples of how design can be applied to contribute a more aware and autonomous self-development of innovators, in their challenges towards systemic transitions.

7. 5 Contribution to Designscapes project

A deliverable for initiatives in the programme

As part of the opportunities for further use of the tool developed, there is the opportunity to contribute to the training offers currently provided by Designscapes capacity building program to initiatives taking part in it. The current tool, taking into consideration the necessary adjustments mentioned before, can represent in fact a valuable deliverable from Designscapes programme to the initiatives taking part in their capacity building programme. A dedicated webinar could be set-up on the Facebook page hosted by the Designscape consortium, in this way reaching the entire community of DEI initiatives participating in the programme. This would give the chance to describe the tool to initiatives as a valuable support in their practices, encouraging them to download it and utilise it. The possibility of making the outcome of this project a deliverable from Designscapes for initiatives would eventually contribute to its further development too, as further research and knowledge would be generated by the initiatives' use of the tool in context.

Challenges and capacity-building needs emerged from the research activities with initiatives

As mentioned at the beginning of Chapter 2, Section 2.1, the present project takes also the opportunity to contribute to Designscapes research interest in understanding what challenges are there for urban innovators in their DEI projects and what they need to become more capable of, in order to overcome them.

More precisely, this project aimed at answering to a second research question being:

What are the capabilities that urban innovators need to develop to carry out their DEI projects?.

The activities carried out for the investigation and development of a reflective tool to frame capacity building needs can give the chance to find some answers to that research question. Even though only partially, the activities made in fact emerge the challenges and needed capabilities as perceived from the initiatives involved in the research activities.
To investigate these activities from a content perspective, the research question above mentioned is reformulated in two sub-research questions as follows:

What are the challenges for innovators emerging from the reflections on their projects?

What do they say they need to become more capable of to overcome the challenges in their projects?

As an approach to answer these research questions, a content analysis was carried out looking into the answers of participants collected throughout the research activities executed with urban innovators during the current project. In particular, this content analysis includes both the semi-structured interviews from Phase 2 (Chapter 5) and the series of iterative interventions described previously in Chapter 6. The activities were first analysed separately. Afterwards, all the findings were gathered together and clustered, to be presented and discussed in the following sections.

Findings from the content analysis

The present section describes the findings from the content analysis of the research activities carried out with urban innvators participating in Designscapes. Looking at the content emerging through the interviews and interventions with initiatives, four main clusters summarise the challenges and capacity needs of the initiatives that took part in the research activities. These clusters are Engagement, Business, Evaluation and Adaptation of design approaches and methods. The four clusters are described below, and summarised in Fig. 19 (p.180)

Engagement
The aspect of Engagement was the most frequent concern among all these four clusters. The challenges and lacking capabilities expressed by initiatives regarding the theme of Engagement were gathered in three sub-clusters: networking, online engagement and community engagement. Initiatives highlighted, in fact, the challenge of *creating and maintaining a network of stakeholders*, especially difficult when these are decision-makers and authorities. In regard to this, the active presence in seminars, fairs, and other sector events was recognised as a capability to improve. More in general, networking skills such as creating and maintaining relationships and relevant links with stakeholders, especially when it comes to local authorities, were also noted as abilities that are somewhat to improve.

A second concern for initiatives was the fact of having to *engage stakeholders online*. This resulted in the challenges for innovators of being able to catch the attention of people through the web and to reach a broader number of users or stakeholders, in some cases needed to attract the attention of bigger actors, such as local authorities or companies. Knowledge and capabilities that emerged as necessary to initiatives to the online engagement of stakeholders were the ones of digital content creation, as well as marketing strategies and dissemination skills. These were also

complemented by the expertise of use of social media and forums as channels for successful engagement and project promotion, which was reported by most of the initiatives as a lacking ability.

Last but certainly not least of the challenges for innovators regarding engagement was the *engagement of local communities*. The engagement of local communities was highlighted by many as a tricky step in their project. One main constraint that emerged regarding this step is the communities' distrust towards participatory processes (or other forms of interventions), especially if these come externally from the community context. This brings along the need for innovators to establish prolonged relationships and engagement with community members, even when they lack the possibility of keeping a constant presence in the area. These challenges raise the need for innovators to develop capabilities to empathise and understand communities through methods that go beyond the usual formal interviews and are instead less invasive and boring for community members (among these may be probably included methods of context-mapping or other generative activities that some initiatives may not know or possess yet). A fundamental capability is one of keeping transparency regarding the project process, goals and development. This means for innovators to improve their communication skills, as well as their capability of sharing relevant and strategic knowledge with communities, ultimately building trust and share with them ownership throughout projects. In the perspective of scalability, initiatives highlighted as well the importance of emphasising even more with a different context and community, this may require not only the already mentioned skills of networking and engagement of relevant stakeholders in the area but as well methods, skills and

knowledge that could come for example from professionals such as sociologists to get to know the relationships and dynamics within communities.

Business
An additional cluster found concerns the business and financial aspects of projects. Challenges discussed by a couple of initiatives concerned, in fact, the difficulty in engaging funding stakeholders. This step makes necessary the identification of relevant incentives for funding stakeholders, that in the period of COVID 19 crisis might result ever more challenging due to budget cuts of private companies.
This challenge raised the need for innovators to improve their knowledge regarding business models or alternative funding strategies that can result successful in these particular economic crises circumstances. On top of this, competences on business models for products sustainability were also among the business skills emerged as lacking for one of the initiatives.

Evaluation
A couple of teams noted during the reflective activities how new challenges raising for this particular project concern also the step of evaluating their projects.
In this regards two initiatives highlighted this as a challenging aspect in their projects. One of them was more concerned regarding the evaluation of methods and processes, that usually are tailored towards a specific context, user, or need, to elaborate models that can be scalable and applicable in other contexts.
For this initiative lacking regarded in general methodologies and approaches to evaluate, during and after the project, its process and its scalability. A second initiative raised a more specific challenge, namely the definition of Key Performance Indicators for change in resilience in a community, to evaluate the impact of their project on the community involved in it. In this case, other capabilities emerged as necessary for the team, most important

the capability to engage the experts possessing scientific research competencies (eg. researchers), for example, being able to propose publications offers or other approaches.

Adaptation of methods and approaches
The last cluster identified though this content analysis concerns more generally the need for initiatives to be capable of adapting their approaches and methods 'on the go' during their projects. The examples, in this case, were the challenges of not fitting in the stakeholders' agendas and priorities, and the consequent need of reframing and adapting the research approach shifting target user and value proposition. Innovators must then be capable to successfully reimagine and tailor a different methodology and approach, but still managing to reach the intended goals of the project within the constraints given by it. A capability that derives from this need is the ability to adjust the approach and methods needed to target value creation for stakeholders while staying in line with the original project goals. Knowledge of design and research methods, approaches and how to tailor them is a crucial asset for innovators to possess.

Within this cluster, a more specific challenge regarding adaptation was identified with the necessity for initiatives to *fit activities, approaches and methods to an online setting*.
Forced by the COVID 19, several initiatives were in fact forced to move their activities online and this raised consequent challenging aspects for some of them. These involve workshops, as well as seminars/presentations, or even testing.
The challenge is to make these events engaging for the public even without the help of a physical venue, of a real presence of facilitators as well as the social aspect that characterises live events. To successfully carry out their activities online urban innovators reported that they need to become better at making these events engaging, attracting and accessible (age difference represents in fact a new constraint when it comes to online activities). Necessary capabilities for them to develop concern

Challenges and capacity building needs emerged in the research activities with initiatives

Engagement

NETWORKING

CHALLENGES

Creating and maintaining a network of stakeholders and end-users

NEED TO BECOME BETTER AT

Take more active part in fairs, seminars

Networking skills (creating and maintaining connections)

ONLINE ENGAGEMENT

CHALLENGES

Catching the attention of stakeholders online

Create critical mass of users/stakeholders knowing and using the product
(also to leverage in engaging companies or authorities)

Get people to participate to online events/activities

NEED TO BECOME BETTER AT

Marketing strategies to catch attention of broader public

Digital content creation

Dissemination and communication skills

Use of social media as promotion channels

COMMUNITY ENGAGEMENT

CHALLENGES

Community distrust towards participatory processes/external interventions

Building a strong and prolonged engagement of the community

Lack of continuous presence on area

Building trust

NEED TO BECOME BETTER AT

Grasping the needs and wants of people with the use of non invasive/formal methods (eg. interviews, focus groups).

Indirect/collective/playful feedback collection methods

Transparency regarding project development

Capability to establishing informal relationships and blend in the community

Capability to share relevant project information with community

Project Communication (non verbal)

Business

CHALLENGES

Figuring out the best incentive facing budget cuts of private sector stakeholders

Figuring out business plan for products

NEED TO BECOME BETTER AT

Knowledge on alternative funding sources
(eg. crowdsourcing, from public authorities etc.)

Business models for times of crisis

General business competences of business moodels for design products sustainability

Project evaluation

CHALLENGES

Elaborate a 'model' that can be scalable

Evaluating the results and impact o f methods throughout the project

Define KPI to evaluate social change in a community

NEED TO BECOME BETTER AT

Evaluation methods and approaches

Competences in scientific research

Need to be good at engaging experts in impact evaluation

Adaptation of methods and approaches

CHALLENGES

Push/adapt our project in stakeholders agendas

Need of shifting testing users for prototype

NEED TO BECOME BETTER AT

Adapt both the proposal and the research methodologies and approaches to a new target

Identifying what is a different selling point of stakeholders

ACTIVITIES ONLINE

CHALLENGES

Bring online the workshop activities with citizens
Need of shifting testing users for prototype

Organising and carrying out engaging events and activities (eg. workshops, debates, speeches)

Persuade people to actively participate without the physical presence of facilitators or other citizens

NEED TO BECOME BETTER AT

Presentation skills for an online environment

Moderation and facilitation of online public activities (eg. workshop and debates)

Knowledge of the online tools and platforms

Make online activities interesting and accessible for all ages

Fig. 19 - Visualisation of the clusters of challenges and capacity-building needs emerged from the content analysis

the adaptation of skills such as mediating, moderating debates, facilitating workshops that inevitably are different when the atmosphere becomes an online group activity.

Considerations on the findings

The content analysis of the research activities carried out with urban innovators throughout this project highlighted both challenges and needed capabilities in their projects, which were clustered in four themes. These findings cannot be generalised in any way as overall capacity building needs for DEI initiatives in Designscapes, due to the limitations of this small content analysis, namely its limited focus to the only initiatives who participated in the research activities and the fact that the main goal of this graduation project was to investigate how to develop a methodology to help innovators identify and articulate their needed capabilities, rather than to collect their capacity building needs in the first place.

Considering these limitations, the findings from this content analysis can be however utilised as helpful indicators informing Designscapes work and research interests. In fact, it is argued that the clusters, as well as the capacity building needs that emerge from the research activities with initiatives, can be utilised as a relevant inspiration for coming training programs or deliverables from the programme.

8. Personal reflection

To conclude this report I would like to reflect on the journey of this project and on the personal growth I experienced through it. While I am happy with the process I went through, I also have to say that one of the most rewarding aspects was to learn more about myself as a designer thanks to this project.

One of the opportunities that I decided to take with this project was to experience and carry out an approach that utilises design as a research methodology, Research Through Design, rather than only a problem-solving approach. Through the experience of this project, however, I saw how aspirations and actions may actually differ sometimes. At times I found myself falling in the attitude of solving problems and testing solutions, rather than putting exploration and learning first. But as my supervisory team reminded me sometimes, designing in this project was not much about solving problems, as it was about learning and discovering more aboutthe poossible ways to support innovators in their projects. Mentally shifting the focus on learning and not solving was definitely challenging at times, showing me that my personal attitude still bends more towards designing solutions and less on researching or creating new knowledge. Discovering this, however, only motivates me more to keep trying and experiencing this approach for further projects to keep merging my practices of both designer and researcher.

Having to manage a project like this one all alone was also another challenge that caught me unprepared at times. Sometimes I have been on top of my process, while other times the process controlled me. Struggling with owning the overall process taught me that some of my strenghts, such as the attention to details can as well turn out as one of my bigger limitations in managing a design project like this one. On the other hand, I learnt that project management is definitely one of the capabilities that I need to develop more and for a next project, now that I am more aware of my own limitations, I will definitely pay attention to take decisions from the start, as well as

dedicating time to zoom out and look at things from distance. In this sense, writing this report has been in itself a challenge and a precious anchor to lift me up and gain perspective on what I was doing. Writing and somehow storytelling demonstrated to be, at least for myself, really useful reflective tools. Having to explain to someone else what I was doing helped me to step out, acknowledge what I was doing and the knowledge I had gained, making me realise how so many things about a project remain sometimes just latent knowledge that sometimes gets undervalued as intuitive.

If I were to give advice to myself doing this project again, the most important one would be to not worry that much. To be confident that at the end something good is going to come out, if not as a result, for sure as a learning experience. To not let myself be hindered by insecurity and need for certainty. Because as cliche as it may sound, with certainty there is probably no learning attached and in the end, learning is the most important outcome one can draw from an experience such as this one, while the final design result can be rather a means to learn what is still unknown.

This project gave me as well the opportunity of getting to know so many great social innovation initiatives. Even though the project did not take in-depth context research, through the interviews and activities with innovators I definitely learnt some things about them and what designing for social innovation means. This is personally important as I see the learnings from this project as another step that brings me closer to what one day I would like to be my own field of practice.

All in all, this has been an interesting ride and an enriching experience. Seven months of trying, failing, trying a bit more, failing a bit less, and ultimately learning. Both about design and about myself. And I am glad for it. I hope you enjoyed reading it.

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