

# THE MIT D-LAB PARTICIPATION TOOLKIT: A SUITE OF TOOLS FOR UNDERSTANDING, CHARACTERIZING AND IMPLEMENTING PARTICIPATION IN DEVELOPMENT AND HUMANITARIAN CONTEXTS

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## Abstract

Design can be a powerful tool when addressing development and humanitarian challenges. A new filter design could provide a community with safe drinking water, a new cookstove design can prevent acute respiratory infections, a new app design can provide financial and government service to populations who never previously had access, a new design for a peanut sheller can save countless hours of tedious labor. In addition to these tangible benefits, however, there are also numerous intangible benefits of design: a sense of pride and accomplishment when the design is completed and performs its intended purpose, a feeling of joy as a result of the creative endeavour, improved self-confidence, agency and power derived from developing a product that can improve lives or livelihoods. It then becomes a critical question: who reaps these intangible benefits? Frequently, students are not challenged to think about the intangible benefits of design and where they accrue. Are the students creating a climate of agency or dependence? Is their learning prioritized over local capacity-building and empowerment? The way that the end-users are engaged in the design process plays a critical role in the answers to these questions.

Participation has many different levels, ranging from surveys and interviews, in which the end-user is a passive source of information; to more dynamic focus groups where the end-user is engaged in interactive and sometimes iterative exchanges; to user-led design and co-creation, processes that actively engage the end-users' experience, skills and creativity in the development of solutions. As students are trained in design and innovation for humanitarian and development contexts, it is important that they understand the value of engaging the end-users and beneficiaries of the solutions and that they appreciate the wide variety of options for doing so. Increased participation can not only lead to more effective and efficient solutions and higher adoption rates; it can also provide affected populations with greater agency and contribute to more culturally relevant designs. Too frequently, however, participation consists only of brief consultation at the beginning and end of a project, and does not take full advantage of the insights, knowledge and creativity of the end-users.

This paper puts forward a four-step approach to integrating participation into development and humanitarian design projects and describes a set of tools that promote a shared understanding of the quality, extent, stages and types of participation. The tools described in this paper were developed by MIT D-Lab in collaboration with the Humanitarian Innovation Fund (HIF) as part of the National Science Foundation (NSF)-funded Co-Creation Toolkit for Humanitarian Innovation. The tools apply a design lens to participation, using the different phases of the design process to identify points in a project where participation could occur; defining and suggesting different levels of participation; and providing guidance for ensuring the quality of participatory approaches.

Keywords: participation, design, innovation, toolkit

## 1 INTRODUCTION

Design has long been acknowledged as an effective means of inspiring students, pulling together knowledge from multiple disciplines and providing opportunities for applying theoretical learning to practice. In the MIT D-Lab Humanitarian Innovation class, design projects and activities are always one of the most highly-rated elements. Furthermore, design can be a powerful tool when addressing development and humanitarian challenges. At D-Lab, students have developed water filters that provide safe drinking water in Ghana and reduced arsenic contamination in Nepal; they have developed better fuels and new cook stove designs that can help prevent acute respiratory infections, the largest cause of death of children between 1 and 5 years old around the world; they have designed a mobile ambulance that improves health infrastructure in Tanzania; and have developed a nut sheller

that provides a core service in the Moringa Connect business that has increased income of thousands of farmers in West Africa. These are but a few examples of the dozens of design projects that have come out of MIT D-Lab; numerous other universities have similar programs. Each of these projects has moved beyond the classroom, and has had impact in the field, improving lives and livelihoods around the world. In addition to these tangible benefits, however, there are also numerous intangible benefits of design: a sense of pride and accomplishment when the design is completed and performs its intended purpose, a feeling of joy as a result of the creative endeavour, improved self-confidence, agency and power derived from developing a product that can make a positive difference in the world.

Looking at the basic needs laid out in Maslow's hierarchy of needs, shown in Figure 1, we can apply a design lens and see that while the technologies themselves address the basic needs: providing safe water and shelter, processing food, etc., the higher-level needs can be satisfied by participating in a design process. Design is a team activity, and therefore builds relationships between designers as well as with potential users. Esteem needs are met as the designers build their confidence and capacity and gain pride in their accomplishments. Self-actualization is achieved as the designers see the impact of their work and develop their creative problem-solving skills.

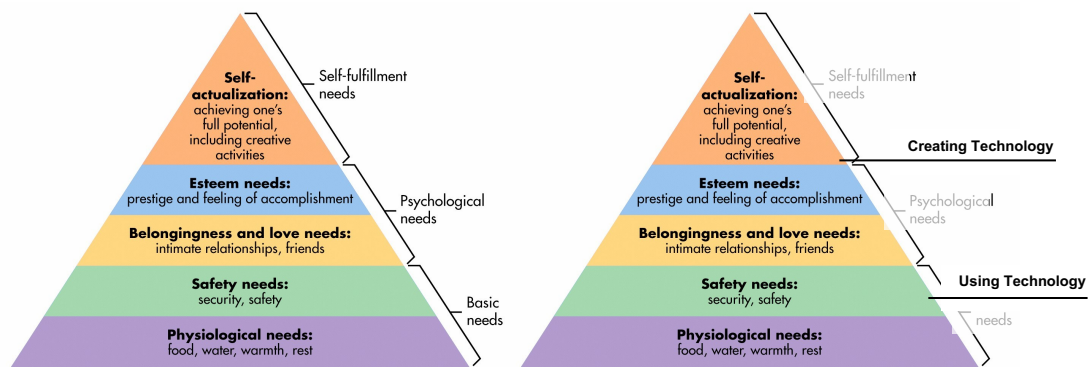


Figure 1: Maslow's Hierarchy of Needs [1], with a design lens

It then becomes a critical question: who reaps these benefits. Frequently, students are not challenged to think about the intangible benefits of design and where they accrue. Are the students creating a climate of agency or dependence? Is their learning prioritized over local capacity-building and empowerment? The way that the end-users are engaged in the design process plays a critical role in the answers to these questions. For there to be long-term development and transformation in a community, all the human needs must be addressed and met; engaging community members in the design process can be an effective approach [2-5] and developing a participation strategy is critical for achieving this.

Participation has many different levels, ranging from surveys and interviews, in which the end-user is a passive source of information; to more dynamic focus groups where the end-user is engaged in interactive and sometimes iterative exchanges; to user-led design and co-creation, processes which actively engage the end-users' experience, skills and creativity in the development of solutions. As students are trained in design and innovation for humanitarian and development contexts, it is important that they understand the value of engaging the end-users and beneficiaries of the solutions and that they appreciate the wide variety of options for doing so. Increased participation can not only lead to more effective and efficient solutions and higher adoption rates [6]; it can also provide affected populations with greater agency and contribute to more culturally relevant designs. Too frequently, however, participation consists only of brief consultation at the beginning and end of a project, and does not take full advantage of the insights, knowledge and creativity of the end-users.

This paper puts forward a four-step approach to integrating participation into development and humanitarian design projects and describes a set of tools that promote a shared understanding of the quality, extent, stages and types of participation. The tools described in this paper were developed by MIT D-Lab in collaboration with the Humanitarian Innovation Fund (HIF) as part of the National Science Foundation (NSF)-funded Co-Creation Toolkit for Humanitarian Innovation. The tools apply a design lens to participation, using the different phases of the design process to identify points in a project where participation could occur; defining and suggesting different levels of participation; and providing guidance for ensuring the quality of participatory approaches.









## 1.1 Participation, Participatory Development and Participatory Design

Because the term “participation” can be interpreted in such a wide variety of ways, there is a need to increase the resolution of the terminology and improve our understanding of the impacts. This section begins by providing a framework for characterizing participation and putting forward definitions of the different types and levels of participation. It is followed by a brief discussion of participatory development and participatory design. There is a vast literature on participatory techniques in both development and design; this paper does not attempt to fully review them, but rather seeks to provide a brief summary and critique that sets the context for the need for more sophisticated and nuanced tools for planning, assessing, evaluating, measuring and monitoring participation.

### 1.1.1 Types and Levels of Participation

Different types of participation can be characterized by the stakeholder’s level of engagement: specifically, the role they play in a given stage of the process and their decision-making authority. Within each type, there are different levels that further distinguish the stakeholder’s roles. Consultation is characterized by stakeholders having an opportunity to share their opinions and give feedback; the levels are differentiated by the mechanisms through which this occurs. Partnership adds direction-setting ability and decision-making authority to the stakeholders, with the levels being distinguished by the relationship and power distribution between the stakeholders and the design team. The levels of leadership are distinguished by the degree of autonomy that the stakeholder has in the project. Table 1 describes the levels of participation through the specific engagement of the stakeholder and their interaction with the design team.

Table 1: Types and Levels of Participation

Type	Level	Description
	 <b>None</b>	The stakeholder is not engaged.
Consultation	 <b>Input</b>	The stakeholder/stakeholder group <b>provides</b> information, shares their opinions and/or gives feedback; however, there is no opportunity to interact or discuss with the design team, and the stakeholder does not have any decision-making power over how their input is incorporated into the project.
	 <b>Interaction</b>	The stakeholder/stakeholder group <b>provides</b> information, shares their opinions and/or gives feedback through a two-way, interactive process with the design team, who responds and reacts; however, the stakeholder does not have decision-making power over how their input is incorporated into the project.
	 <b>Iteration</b>	The stakeholder/stakeholder group <b>provides</b> information, shares their opinions and/or gives feedback in <b>repeated</b> interactions which are used by the design team to make a series of refinements; however, the stakeholder does not have decision-making power over how the refinements are made or incorporated into the project.
Partnership	 <b>Collaboration</b>	The stakeholder/stakeholder group <b>takes part</b> in planning and implementing the solution according to their field of expertise, but their role is determined by the design team; the stakeholder takes part in decision-making, but they do not have the same decision-making power as the design team.
	 <b>Co-Creation</b>	The stakeholder/stakeholder group <b>takes part</b> in planning, developing and implementing the solution; they share equal decision-making power with the design team.
Leadership	 <b>Empowerment</b>	The stakeholder/stakeholder group <b>leads</b> the planning, development and implementation of the solution with the design team providing input and support as needed; the stakeholder has final decision-making power.
	 <b>Ownership</b>	The stakeholder/stakeholder group <b>leads</b> the planning, development and implementation of the solution independently; they have the final decision-making power.

### 1.1.2 Participatory Development

Participatory development is a process through which stakeholders influence and share control over development interventions and the decisions and resources that affect them. In its best form, it is an empowering process which enables local people to do their own analysis, to take command, to gain confidence, and to make their own decisions. It requires a paradigm shift in which development workers must divest themselves of control of the project and think with the perspective that "we" participate in "their" project, not "they" in "ours" [7].

In practice, this paradigm shift is rarely achieved: many of the resources necessary for the project are controlled by actors outside of the community, which leads to an imbalance in power; there is a fear of accountability on the part of development aid providers which makes them hesitant to give up control; and frequently, participatory activities are often undertaken in a ritualistic way, going through the motions of participation without allowing the space for genuine contributions to take place. Finally, designers and aid providers often fall into the trap of "facipulation" (manipulation of outcomes through biased facilitation, either intentionally or unintentionally) in which they influence the outcomes of the project towards their own goals, rather than those of other stakeholders [8].

Despite these pitfalls, however, there are fundamentally important aspects to participatory approaches, particularly in the relationship that develops between the "provider" and "recipient". In a project entitled *The Listening Project*, researchers listened to thousands of aid recipients and found that stories which described effective aid included interactions with specific staff who worked in ways that developed respect and trust [9]. This relationship is often built through collaboration and participation. A deeper understanding of participation in its many forms could enable students and university programs to build more effective relationships and provide more effective interventions.

### 1.1.3 Participatory design

Participatory design is a process which engages diverse stakeholders, particularly the end-users, in creating effective solutions. If this is done well, it has the potential to lead to better outcomes— whether building capacity of communities or creating products that better meet the needs of users [2-4]. Furthermore, participation in the design process leads to higher levels of satisfaction with the product and stronger relationships between the user and the provider [3-5]. There is a wide range of participatory methodologies and paradigms which are more established in the context of international development and are beginning to emerge in humanitarian innovation. D-Lab defines three types of design processes:

1. Design **for** users is where external designers or technical experts develop a product or service to be used by people experiencing a particular challenge. This can be a top-down approach where there is very little interaction with the users; or in other cases, such as in "human-centered design" or "user-centered design", there is a focus on integrating input and feedback from the users at some or all stages of the design process.
2. Design **with** users is a process in which designers respectfully and intentionally invite the people experiencing the challenge or opportunity to participate in the entire design process with them, starting with problem identification and continuing throughout the iterative process of creating and testing a solution.
3. Design **by** users is an inclusive approach to design where the people experiencing the challenge or opportunity, including those with low or limited literacy levels, first identify a problem they want to address and then learn to use the design process to construct a solution. The user in this process identifies the problem and leads the design of the end product.

A closer look at the examples in the literature, however, shows that the majority of the design projects in humanitarian and development contexts fall into the "design for" category and have limited participation: the designer strives to understand the users' needs and aspirations and then tries to incorporate them into the end product; however, the users are not actively engaged in the creation of the solution nor do they have a significant voice in defining the problem or making decisions. This is also true in academia, where student learning is prioritized and logistics make it challenging for students to interact with the end-users. Because this is the most prevalent paradigm both in the literature and in the field, there is a danger of it becoming accepted as standard practice when in fact, there are important benefits that arise from the other paradigms as well. Thoughtful consideration of

which of the three design paradigms is most appropriate in a given situation is critical to achieving long-term, sustainable benefits. The goal of the Participation Toolkit is to provide a framework and a set of tools for understanding, assessing, planning and evaluating participation in the design process and to provide guidance on how to improve both the quality and extent of participation.

## 2 METHODOLOGY

The framework that forms the basis of the participation matrix was developed for the International Development Design Summit (IDDS) Design Notebook in 2014, building off of a stakeholder analysis tool from a World Bank resource for participation and social assessment [10]. The matrix was further refined for a presentation at the International Humanitarian Studies Association conference in 2018 [11] and first used with humanitarian practitioners at the Humanitarian Innovation Exchange in 2019. It was expanded through a collaboration with the Humanitarian Innovation Fund in 2020 when the full participation toolkit was developed by a team from MIT D-Lab and Link-4, a Guatemalan NGO. The tools were tested with both the Innovation Managers at the HIF and a select group of their grantees. Their input was used to make additional improvements, which has been expanded to include the current set of tools, the accompanying framework and guidance documents. Elements of the Participation Toolkit were used is the Spring 2022 MIT D-Lab Class *Humanitarian Innovation: Design for Relief, Recovery, and Rebuilding* as a basis for preparing students for a co-creation workshop in Uganda with teams made up of designers, refugees, students and humanitarian workers. Their feedback was collected and used to further refine the Toolkit.

## 3 RESULTS

This section begins by describing the different elements of the Participation Toolkit and the 4-step approach to planning participation in a design project. It concludes with a brief discussion of how the toolkit was applied in a classroom setting, and how it was received by the students.

### 3.1 The Participation Matrix

The Participation Matrix is envisioned as a tool to create a shared vocabulary and understanding around participation that can be used to assess, plan and evaluate the extent of participation in a design project. It was developed to help humanitarian innovation teams and organizations understand the full range of possible levels of participation and the various points where it can occur in the innovation journey; it has also been used in several D-Lab classes.

Which stakeholder/ stakeholder group are you considering?		Defining the problem		Generating possible solutions/approaches		Developing a solution		Testing the solution	
		Providing and/or gathering information?	Deciding which aspect of the challenge will be addressed and what the priorities are?	Contributing ideas for possible solutions/approaches?	Selecting one or narrowing down to a few possibilities from the many options generated?	Exploring options for the details of the proposed solution?	Creating a prototype solution?	Providing and/or gathering feedback about the solution?	Prioritizing and acting on the feedback to refine and/or finalize the solution?
No Participation No Participation	No Participation	The stakeholder/stakeholder group is not engaged.							
	Input	The stakeholder/stakeholder group provides information and shares their opinions, but there is no opportunity to interact or discuss with the grantee, and they do not have any decision-making power over how their input is incorporated into the project.							
Consultation Interaction	Interaction	The stakeholder/stakeholder group provides information and shares their opinions through a two-way, interactive process with the grantee, who responds and reacts, however they do not have decision-making power over how their input is incorporated into the project.							
	Iteration	The stakeholder/stakeholder group provides information and shares their opinions in repeated interactions which are used to make a series of refinements, however they do not have decision-making power over how the refinements are made.							
Partnership Collaboration	Collaboration	The stakeholder/stakeholder group takes part in planning and implementing program activities according to their field of expertise, but their role is determined by the grantee, they take part in decision-making, but they do not have the same decision-making power as the grantee.							
	Co-creation	The stakeholder/stakeholder group takes part in planning and implementing program activities, and they share equal decision-making power with the grantee.							
Leadership Empowerment	Empowerment	The stakeholder leads the planning and implementation of the program activities providing input and support as needed; the stakeholder has the ultimate decision-making power.							
	Oversight	The stakeholder/stakeholder group leads the planning and implementation of the program activities independently, and they have the final decision-making power.							

Figure 2: The Participation Matrix

The understanding and insights gained from the matrix can in turn help students, designers and innovators work proactively to establish mechanisms, structures and organizational environments that foster more meaningful participation.

The matrix is organized along vertical and horizontal axes. The vertical axis lists the types of participation, as described above. The design stages, which are described below, are placed along the horizontal axis. Figure 2 shows the matrix, a larger version of which can be found on the D-Lab website [12]. Each cell of the matrix represents a unique opportunity for participation; the matrix includes descriptions of these opportunities and the interactions between the design team and the stakeholders.

It is important to note that different types of participation may be more appropriate at different stages of the project, and that more than one type might be used. Furthermore, In the humanitarian and development context, there is an additional layer of complexity because the “customer”, the “user” and the “beneficiary” are frequently not the same person, which distorts feedback loops and requires a greater variety of participatory activities to account for the multiple perspectives.

### 3.2 Stages of Participation

The stages of innovation used in the matrix are based on the design cycle that was developed by MIT D-Lab for use in its Creative Capacity Building program as shown in Figure 3 [13].



Figure 2: The CCB Design Cycle

These stages can be distinguished and characterized as either divergent and or convergent, as shown in Table 2. The divergent stages are those related to expanded thinking and generating possibilities, such as information gathering and ideation, while the convergent stages are where options are prioritized, narrowed down and decisions are made. It is useful to be aware which type of stage it is, as it may affect the type of participation that is selected and implemented.

Table 2: Stages of the Innovation Journey

	Stage	Type of Process
<b>Defining the Problem</b>	Providing and/or gathering information to build an understanding of the challenge.	Divergent
	Deciding which aspect of the challenge will be addressed and what the priorities are.	Convergent
<b>Choosing an Approach</b>	Contributing ideas for possible solutions/approaches.	Divergent
	Selecting one approach, or a narrowing down to a few options, from the many possibilities.	Convergent
<b>Developing a Solution</b>	Exploring options for the details of the proposed solution.	Divergent
	Building the actual solution.	Convergent
<b>Testing the Solution</b>	Providing and/or getting feedback about the proposed solution.	Divergent
	Prioritizing and acting on the feedback to refine and/or finalize the solution.	Convergent

### 3.3 The 4-Step Process for Planning Participation

The Participation Matrix provides the basis for a 4-step approach to participation and is part of a suite of tools that can help students and practitioners improve the quality and extent of participation in their work. The issue of participation is best addressed early and therefore these tools should be used at the beginning of the design journey to plan the appropriate types and levels of participation along the way.

#### 3.3.1 Step 1: Identifying the Stage and the Stakeholder

Different levels of participation should be employed when engaging different stakeholders at the different points in the lifecycle of the project. It is important, therefore, to clearly identify what is being considered, and which stakeholders are being engaged. When there is more than one key stakeholder group, the process should be repeated for each of the groups at each stage of the journey.

#### 3.3.2 Step 2: Choosing the Type of Participation

Many factors must be considered when selecting the appropriate participation approach. This frequently requires difficult tradeoffs between the desired benefits of participation and the feasibility of implementing it effectively. Furthermore, while inclusive participation can yield many benefits, it also requires several enabling factors for these benefits to materialize. Different approaches to participation (consultation vs. partnership vs. leadership) can yield different benefits and require different levels of investment and enabling conditions. The Participation Compass Tool helps students and practitioners identify the appropriate type of participation for their project based on the benefits they want to prioritize and the constraints they have to work within.



Figure 4: The Participation Compass

The Compass examines two main factors to consider when engaging key stakeholders in the process of innovating and developing new solutions to humanitarian and development challenges:

- **Benefits of Participation:** What is the motivation for engaging stakeholders in the design process? What benefits are desired from their participation? Which of these benefits are critical, “must-have” benefits for the project? Which benefits are less important, “nice-to-have” benefits?
- **Barriers to Participation:** What constraints or challenges will be faced in ensuring the participation of key stakeholders in the innovation process? Which of these barriers can be easily lowered or addressed? Which barriers cannot be reduced or addressed.

These factors are integrated into two assessment questionnaires to help the design team evaluate the relative importance of benefits and barriers to their project. Based on the results of these assessments, the Compass tool generates a list of the top priorities, an overall score for each type of participation and a heatmap that reflects the tradeoffs to consider when selecting the type of participation.

After identifying the most appropriate type of participation for their project, the design team can use the Participation Matrix to determine what level of participation is suitable and further refine their plan for engaging stakeholders in the design or innovation process.

### *3.3.3 Step 3: Identifying Tools and Activities*

A large number of factors must be considered when selecting appropriate tools and activities for a given stage and level of participation. Some of the constraints identified in the process of using the Compass will dictate the tools and activities that can be employed. Furthermore the degree of representation that is required, both in terms of the numbers of people and the variety of stakeholders who are involved will also influence the type of activity. Verbal feedback processes which rely heavily on people speaking up in a large group can inhibit participation by shyer people or more marginalized participants. Furthermore, written surveys tend to favor input from those with higher literacy rates as do drawing and sketching activities. Switching the engagement modality to hands-on activities that include building models, adapting prototypes and trying out products often provides those participants who are less comfortable with a heavily verbal and literacy-based process new opportunities to participate.

The Participation Matrix can be used to navigate a searchable database of activities that can be used at different stages of the innovation journey that considers the length of time of the activity, level of complexity, age and gender appropriateness, literacy levels of participants, optimal number of participants, among other factors (note that this piece of the toolkit is still in progress). Ideally, the selected activities will build off of each other to form a coherent suite of activities.

### *3.3.4 Step 4: Ensuring Quality*

Providing stakeholders with the opportunity to participate and clarifying the terms of their engagement are the first important steps towards bringing their voice and experience into the innovation process. In order to make participation effective, however, it is necessary to understand that a person’s physical presence does not, in itself, guarantee a high level of participation. A range of factors influence whether people will attend a participatory session, whether or not they feel comfortable in contributing their ideas and experience, and/or if they feel that their voices are not only heard, but valued. Paying attention to these factors ensures that participation is meaningful, stakeholder’s contributions are valued and that the participation ultimately serves its end: to bring stakeholders’ voices to the process in order to influence the solution for the better. The Quality Advisor can help students and practitioners who have decided to involve stakeholders in any or all stages of an innovation process ensure or improve the quality of that participation.

The Quality Advisor tool is an animated look-up table designed to help students and practitioners plan for an event or session in which they want stakeholder participation. It guides them through the factors that can impact the quality of participation and offers advice on how to ensure that good participation happens. The Advisor divides activities into three main phases, and each phase is further subdivided into two steps. Important considerations are listed under each of the steps and are shown in the table below.



Table 1: The Quality Advisor Table

Before		During		After	
Planning	Preparation	Environment	Engagement	Following Up	Finishing Up
Representation	Building Relationships	Physical Environment	Content	Appreciation	Reporting
Inclusion	Managing Expectations	Enabling Environment	Facilitation	Communication	Reflecting
Logistics	Building Skills, Knowledge & Understanding	Power Dynamics	Documentation	Managing Relationships	Transition
Mindsets	Mindsets	Mindsets	Mindsets	Mindsets	Mindsets

Each cell can be expanded to show guiding questions and recommendations about what students and practitioners need to consider for ensuring or improving the quality of participation.

### 3.4 The Co-Creation Workbook

The Quality Advisor forms the basis of the series of worksheets that make up the Co-Creation Workbook that was developed to guide students through the process of preparing for and participating in co-creation projects that are part of the D-Lab Humanitarian Innovation class. The worksheets address representation and inclusion; building skills, knowledge and understanding; creating an enabling environment; facilitation and documentation. In addition, classroom activities around mindsets, bias and power dynamics provided additional preparation for the students. A small team of students was able to travel to Arua, Uganda to participate in a co-creation workshop that included South Sudanese refugees, humanitarian NGO workers, designers and students. Following their experiences, they gave feedback on the how useful they found the Participation Toolkit and the Co-Creation Workbook to be in preparing for and participating in the co-creation workshop. All students indicated that they found the Participation Matrix to be “very useful” (5 out of 5) for understanding the types and stages of participation. One student commented:

*“I was shocked to realize I didn't understand the difference between consultation and collaboration prior to this class; these are terms I have been using in my work and studies for years. It was very helpful to understand that 'co-creation' is at the foundation of collaboration- which is very different from asking for community input and then designing from that input. It was also helpful to learn that there are appropriate times for each type of participation.”*

Overall, students appreciated the worksheets and activities that were part of the Co-Creation Workbook. The worksheet and activities around creating an enabling environment received the highest positive feedback (5 out of 5) followed by the representation and inclusion worksheet (4.7 out of 5) and then the power dynamics activities and facilitation guide (4.3 out of 5). One student commented:

*“I found that the enabling environment activity was very useful since by thinking about potential obstacles in participation in advance, we were able to address them before they even occurred. Hence, thinking about the background of people on your team is truly crucial.”*

Note that the sample size was very small, as opportunities for travel have been restricted due to covid-19; only five of the ten students who took the class travelled to Uganda.

## 4 CONCLUSIONS

In the field of humanitarian innovation and design, there appears to be consensus building around the need to increase user engagement and participation of the affected population [14], however there is very little clarity or consensus about what exactly that means. There is neither a body of literature or set of standard practices that outline effective methodologies or provide evidence to support strategic planning around participation. The issue of the quality and extent of participation is especially important in this context because of the historically low levels of participation of the affected population and the inherent power dynamics between them and the aid providers.

When students become engaged in humanitarian and development projects, they frequently see themselves in the role of problem solvers and may not appreciate the value that comes from the users being involved in the problem-solving process, not just through consultation but also through the deeper levels of partnership and leadership. Raising students' awareness of this is particularly important in humanitarian situations with its associated culture of dependency. Furthermore, the intangible impacts of participation become even more significant for people who have been affected by crises, because they have so often lost agency during displacement. If students develop the awareness that people affected by crises have their own potential and contribute valuable knowledge and experience to designing a solution, they can develop a much more authentic relationship. This enables students to work in humanitarian and development situations in a way that enhances people's dignity rather than seeing them as vulnerable or dependant.

The tools described in this paper attempt to address this gap in preparing students to work in innovation or design in development and humanitarian situations by providing a clear set of definitions around participation and practical techniques for integrating participation into the innovation journey. The toolkit provides a useful framework for students, faculty and practitioners to characterize participation and break it down so they can develop intentional strategies for engaging the users of their designs, thus allowing community members to reap both the tangible and intangible benefits of the design process.

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