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Values and challenges in rapid prototyping of global health policies

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Abstract: This paper identifies the value and challenges in introducing rapid prototyping of policy to design non-expert and expert groups by analysing an online workshop series that was conducted with early-career professionals, policy makers, and design researchers. The COVID-19 pandemic evidenced, even more, the need for situated policies in the area of health as global health policies were ineffective in addressing livelihood diversity, particularly of underserved communities. Therefore, the untapped potential of rapid prototyping for policy making in the area of global health is explored. We particularly analyse the creativity of the different groups who joined the workshop series and point out implications for the rapid prototype of situated global health policies in international low-resourceful settings.

Keywords: rapid prototype; global health policy; value; challenges

1. Introduction

When developing global health policies, global health researchers and policy-makers face unique challenges in addressing complex issues. For instance, measures recommended and adopted during the COVID-19 pandemic are not feasible for underserved communities worldwide, including but not limited to informal-settlement communities that have no access to water and hygiene products and/or cannot self-isolate because they live in overcrowded houses that are usually intergenerational, exacerbating the risks for older adults as well. Therefore, global health policies must consider and address livelihood diversity.

These issues require innovative solutions that go beyond the pre-set responses of traditional policy-making. Hence, in recent years, design experimental, forward-thinking, creative, and collaborative approaches, and methods such as rapid prototyping (Stappers, 2013), speculative design (Dunne & Raby, 2013) and co-design (Sanders & Stappers, 2008), have been introduced into the policy-making process. These methods aim to engage a more

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comprehensive array of stakeholders earlier in the policy making process, helping to bridge the gap between policy planning and implementation.

The COVID-19 pandemic further intensified the need for collaboration, cooperation, quick and effective policy development, and implementation, testing the ability of policy-makers, scientists, and citizens to cope with its effects and impacts. Global responses have been ineffective to tackle the pandemic challenges in different settings considering people's livelihood diversity and other socio-economic determinants, especially in disadvantaged communities.

In this context, the current paper identifies the perceived value and challenges in introducing rapid prototyping for policy making to design non-expert and expert groups, providing lessons learnt and recommendations in the area of global health. These were based on the analyses of a workshop series on rapid prototype of policy with different stakeholder groups: early-career professionals working in fields related to global health and public policy, policy-makers, and designers. The challenge that participants addressed during the workshop was: To enable people to wash their hands with soap and water in least -, low- and middle-income countries' low-resourceful settings.

Our findings suggest that there is still an untapped potential of rapid prototype of health policy to bring different voices and lived experiences of communities as well as health scientific knowledge to policy development earlier. However, there are still challenges for designers and policy makers in bringing different stakeholder groups together and establishing conversations and collaborations towards creative and innovative practices in policy making, including the need for change in organisational cultures and practices in order to consider a comprehensive array of stakeholders in early policy development. We further expand on these aspects in the Findings section.

1.1. Rapid prototyping of policy

Rapid prototyping is a design process used to quickly generate ideas, try them, work out what the issues are and then iterate. It can be thought of as 'things we make to find out about things' (Stappers, 2013). A key concept is to 'fail fast, fail often' and that this enables researchers and designers to explore a range of ideas in a low-risk environment. In recent years this approach has been applied to policy-making, particularly in Policy Labs, where designers, researchers, policy-advisors and policy-makers carry out stakeholder research, generate policy ideas and interventions then experiment with them to see how they might apply to real-world situations.

In design, a rapid prototype is often low-resource and low-fidelity mock-ups that can be used to run experiments, test it and, vitally, gain feedback from people who will benefit from the solution as well as other stakeholder groups such as the ones knowledgeable on the problems or opportunities that the idea addresses to then iterate the design. In policy

making, the use of prototyping can help policy-makers visualise and test the solution with beneficiary groups earlier in the policy making process, before deciding whether to invest more heavily and roll it out. This brings a critical change to the traditional policy making process that separates policy planning from implementation (Junginger, 2014) and fails to address complex challenges in uncertain environments (Julier, 2017; Mortati et al, 2016). Therefore, experimental design approaches and methods based on iterative prototyping and testing cycles have increasingly gained attention in policy making. Pilot projects are an example of prototyping in policy making, such as Finland's recent pilot of their universal income.

What does a prototype in policy-making look like?

- Can be used to illustrate proposed ideas – presenting a tangible example of how a new policy might work.
- Demonstration of how to implement a policy goal through an artefact such as a beta website or draft business model for a new organisation.
- Could be a visual information campaign aimed at particular stakeholders.
- Could be used as a way to test something small as a step to realising a wider goal.
- Could be a short 'pilot' project of the policy itself (e.g., a one-year test).
- Can involve stakeholders/the public in gathering data to inform the policy.

1.2 Iterative cycles

Iterative cycles are utilised in diverse design areas, such as the design thinking "learning by doing" (Ideo.org, n.d.) and the design of business models (van der Pjil, et al, 2016). The prototype in this process is the means that enables people with different backgrounds to visualise and share ideas as well as to get insights into future development by reflecting on and integrating feedback from others. Thus, iterative cycles or processes work as learning cycles that feed decision making throughout the development of solutions to problems and identified opportunities.

This is not about the quality (beauty) of the drawings and prototypes. Visual thinking methods, such as prototype, (i) support effective communication and collaboration, (ii) order our thoughts and organize information, (iii) clarify patterns and links, (iv) enable people to open up, get new ideas and keep on improving, (v) direct focus towards relevant points, and (vi) make the subject approachable (Brand, 2017).

2. Methodology

Three workshops were co-designed and led by ImaginationLancaster (Lancaster University) in collaboration with the International Institute for Global Health (United Nations University), involving co-workers with different backgrounds and expertise, including design

innovation, policy design, design thinking, community engagement, global health, health policy and systems research. Each workshop targeted one stakeholder group - early career professionals, policy makers, and design researchers, and lasted around 2 hours. These workshops were conducted online in April and May 2021. The workshops were advertised on Eventbrite and through social media and professional networks. A total of 118 participants joined the online workshop series.

Prior to the workshops, participants received instructional materials, such as a video on innovation in public policy through design and further references on policy prototype. The workshop was focused on working through a challenging scenario for policy development with the aim to enable communities and healthcare facilities in low- and middle-income countries to access handwashing facilities and resources during the pandemic and build resilience to future global health crises.

All workshops were organised in sessions as follows (Table 1).

Table 1 Workshop structure and activities.

Session	**Description**
Opening remarks	The hosts introduced themselves, the agenda, and housekeeping rules.
Lighting talk 1	The first speaker presented a short talk on rapid prototype of policies.
Breakout session 1	Participants worked in groups of 3-4 people, each led by a facilitator. Groups characterised their personas, identified and reflected on their challenges, generated ideas and selected the most promising ones.
Lighting talk 2	The second speaker talked about community engagement projects supporting policy goals in Malaysia.
Breakout session 2	Groups presented their most promising ideas to another group to get feedback.
Breakout session 3 – Iteration	Participants work on incorporating feedback from another group into their original ideas.
Plenary	Participants and facilitators shared their thoughts and reflections on the activities.

The workshop groups were split up at random. There were 3-4 participants in each breakout session. The groups received different personas and settings for the challenge as Table 2 shows:

Table 2 Personas and settings.

Persona	Setting
Student	Urban
Child returning to school	Rural
Adult working in food preparation	Urban
Elderly adult living in group living facility	Rural
Adult with a disability	Urban
University student living in a dorm	Rural
Child returning to school	Urban
Adult working in food preparation	Rural
Elderly adult living in group living facility	Urban
Adult with a disability	Rural

The figures below illustrate the canvas with activities' prompts and outlines that were utilised to support rapid prototyping and iteration in breakout sessions.

Figure 1 Task 2 – Groups generate ideas and select the most promising ones

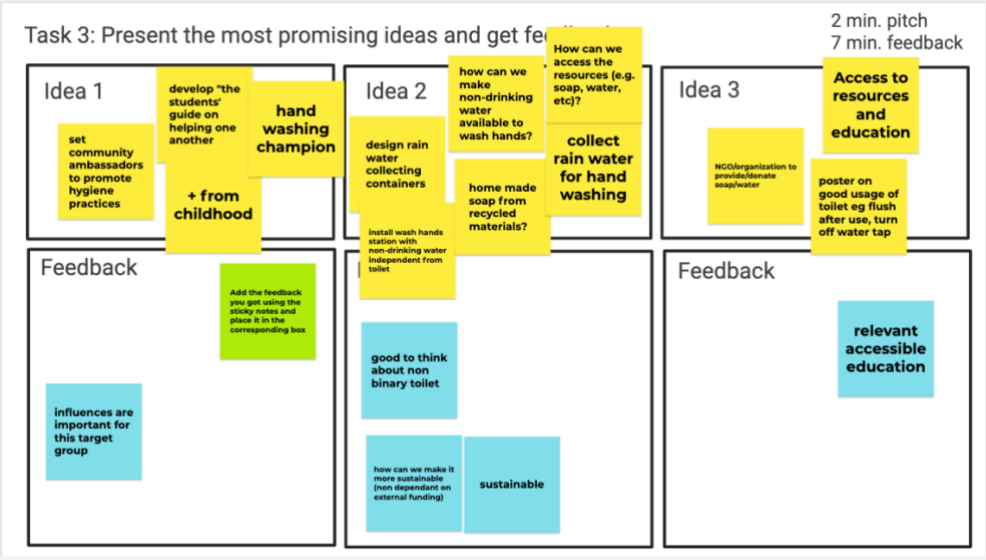

Figure 2 Task 3 – Groups select the most promising ideas and iterate to get feedback from another group

Just after each workshop, participants evaluated the activities and facilitators shared their insights in a debrief session. An additional survey was sent to understand the short-term impacts of the workshop for each audience. The findings section shows the results of this additional survey and further observations from workshop facilitators.

Moreover, workshop facilitators further analysed the process of rapid prototyping of policy utilised during the workshops through Miro boards. Each facilitator looked through the working groups' materials generated by the groups they assisted, identifying and synthesising the barriers, challenges, ideas generated, feedback and iterative cycles (Figure 3) as well as themes that emerged and implications for global health policy (Figure 4).

Figure 3 Examples of Miro boards utilised by facilitators to further analyse ideas generation and iterative processes

These data were additionally synthesised through affinity mapping and cross-reference producing a final map (see Figure 4).

Figure 4 Affinity mapping used to identify and synthesise themes that emerged and the creativity of ideas

3. Findings

3.1 Creativity and ideation by the different groups

Varied ideas were generated by the different groups of attendees. The synthesis of participants' ideas and themes that emerged are shown below (Figure 5).

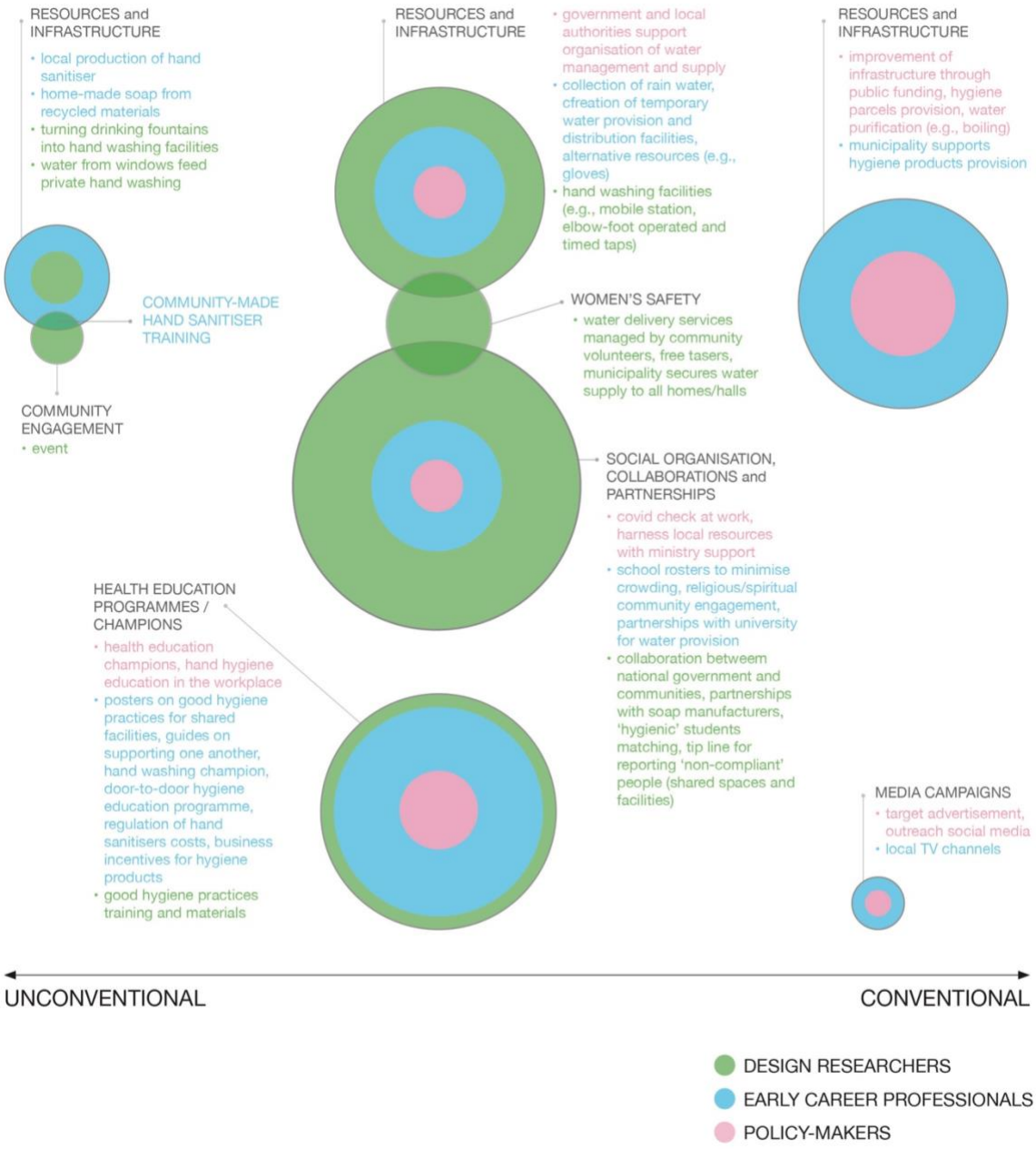

Figure 5 Ideas generation and themes

Most ideas generated during the workshops were based on a combination of existing solutions adapted for the different contexts approached by each working group. A very few ideas were considered more innovative. The design researchers played a significant role in generating creative ideas and combining existing solutions to respond to challenges. Early career professionals' ideas ranged from unconventional to conventional. And policy-makers tended to be open to design processes but generated mostly more conventional solutions.

In low-resourceful settings, lack of water and sanitation grids, water scarcity, crowding and shared rooms and hygiene facilities are some of the factors that hamper good hygiene practices as these are defined considering Western/Global North contexts (e.g., access to water and hygiene products, sanitation grids, etc.).

Design researchers came up with ideas taking into account equity, diversity and inclusion (EDI) more often. For instance, considering gender issues, such as women's safety in the absence of water and toilets at home and the need for non-binary toilets when hygiene facilities are shared. In contrast, they also generated ideas that adopted a less collaborative approach, such as matching people with good hygiene practices together when rooms and hygiene facilities are shared as well as suggesting a reporting non-compliant people policy. This was part of the ideation phase, and the intention at this stage was not to judge ideas yet. However, considering further opportunities to work consistently and systematically on policy prototype it is important to identify and address these aspects in order to avoid solutions that may be discriminatory instead of collaborative, educational and, hence, with better potential to be scaled up.

3.2 Implications for global health policy

Fail fast, fail lots. Beyond ideation from across different disciplines or policy departments, iterative cycles are critical to identifying pitfalls to solutions. Those who are not involved in the prototyping recognise drawbacks of seemingly practical solutions and help to inform more assertive solutions development earlier (e.g., mosquito breeding sites in rainwater collection containers). Therefore, feedback through iterative cycles leads to the improvement of original ideas, helping to identify earlier and anticipate implementation challenges.

Emphasis on locally sourced and locally relevant solutions. There is a need for place-based policies that are context-specific and take into account specific challenges. These include local sourcing of materials and supply chains as well as local knowledge, which is vital.

Need for multisectoral and multidisciplinary approaches. Innovative and creative ideas generated out of rapid prototyping of health policy may require multidisciplinary collaboration beyond a multi-sectoral approach as well as further investigation before implementation to ensure effective and safe solutions (e.g., the safety of home-made hygiene products and their production by lay people, water collection systems and treatment to ensure the water is suitable for the purpose of hand-wash, interruption of water supply is also a huge issue so it is important to think about water-less solutions, but these bring their own issues such as waste and use of chemicals as well as production issues). Thus, the promotion of mechanisms that enable communication and thinking across structures (e.g., education, health and infrastructure) is essential. Furthermore, how the benefits of this can be applied in future situations needs to be better understood.

There was limited mention of multi-pronged approaches that may be needed to address complex or systemic barriers. Therefore, design experts supporting rapid prototype of policy should also be better prepared to map complex and systemic issues and to identify key intervention points that can bring more significant positive change, assisting the craft of more impactful health policies.

Financing for solutions is an important aspect of prototyping as well. Particularly some of the policy-maker groups were attentive to finance and resource availability. On the other hand, although they generated practical ideas, they also presented more unambiguous ideas, different from design researchers and early career professionals (ECP) that adopted a more creative attitude despite lacking practicality sometimes as noticed in one of the EPC working groups. Creativity and feasibility are key factors to enabling solutions to complex global health challenges in low resourceful settings. Thus, rapid prototyping of global health policy processes still needs to be further explored and understood in multisectoral approaches that can generate effective policies.

Personas. Although the creation of personas was considered a helpful instrument by part of the working groups, better identifying policy beneficiaries and catering ideas better towards beneficiaries, using personas can be challenging, especially where participants are international and don't have a shared experience. This fits into critiques of using personas. Thus, using specific examples of issues based on data from a specific country or community can mitigate this problem. Particularly, designers demonstrated the need for interacting with real people and communities beforehand.

Many of the participants started from a position of not knowing how a policy is made. Hence, longer engagement for workshops would enable a greater understanding of this aspect, highlighting key points for each audience.

3.3 Workshop series' evaluation

A total of 118 participants joined the online workshop series and 51 responded to the post-workshop polling. Almost all participants (50/51) rated the workshop useful and relevant to their work. Of those 51 who completed the post-workshop polling, 21 rated the workshop as excellent, 22 rated it as very good, 8 rated as good, and 1 rated as fair in a Likert scale that ranged from excellent to extremely poor.

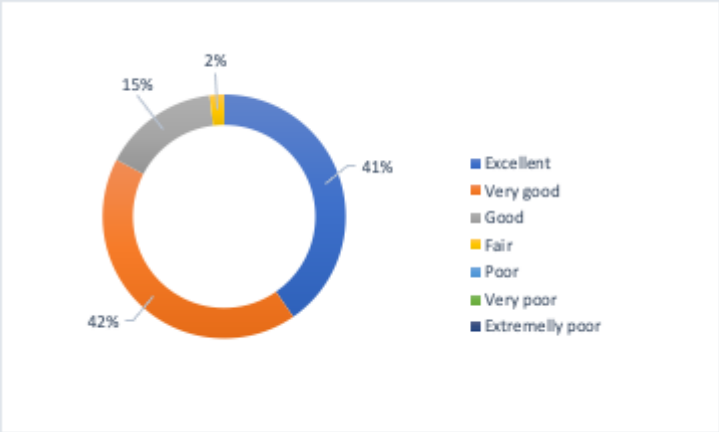

Figure 6 Post-workshop polling results

An online survey was emailed to the participants five months after the workshops were delivered to evaluate the impact of the workshops on researchers' capacity strengthening, as well as to identify lessons for future workshops and other projects. A total of 21 responses were received from participants. A few participants (3) attended more than one workshop.

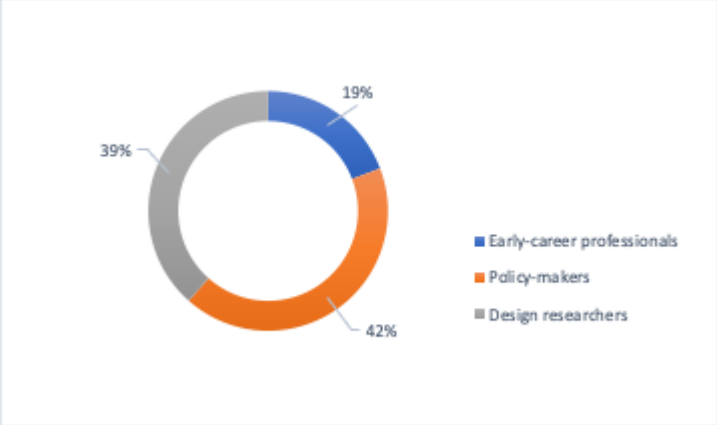

Figure 7 Survey respondents according to the workshops they attended.

The survey respondents were based in a variety of countries (Belgium, Canada, Ethiopia, India, Iran, Malaysia, Nepal, Netherlands, Nigeria, the UK, the USA) and from varied organisations. Most of them work for government sectors, followed by non-governmental and private organisations, international organisations, entrepreneurs as follows:

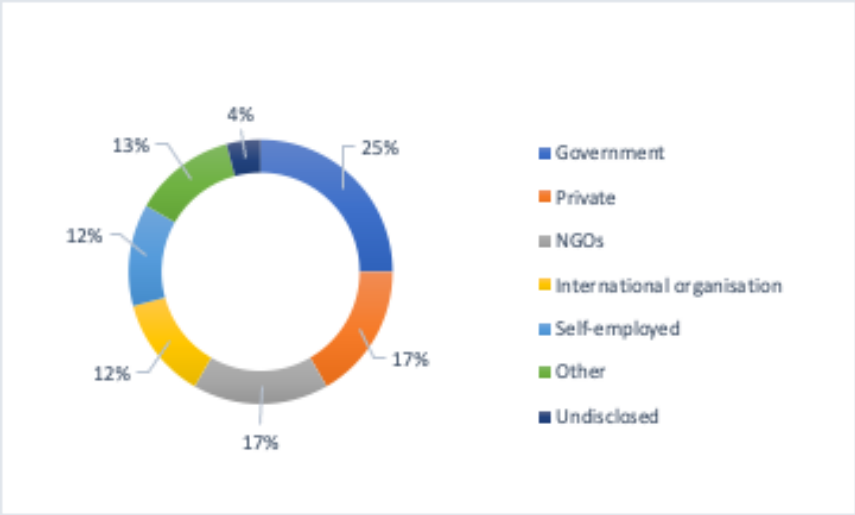

Figure 8 Work sectors of survey respondents.

When asked about the extent to which they have used the knowledge of the competencies covered in the workshop in their professional practice, most participants confirmed that they utilised iterative approaches to gain feedback from a large to a moderate extent. Just over 14 per cent didn't use it at all. Regarding experimental approaches, such as "fail fast, fail often" for testing and iterating, most respondents applied those from a moderate to a small extent, and under one quarter didn't. Concerning rapid prototyping for policy making, most respondents applied rapid prototyping from a large to a small extent, and just under 20 per cent didn't utilise it at all. The charts below show these figures.

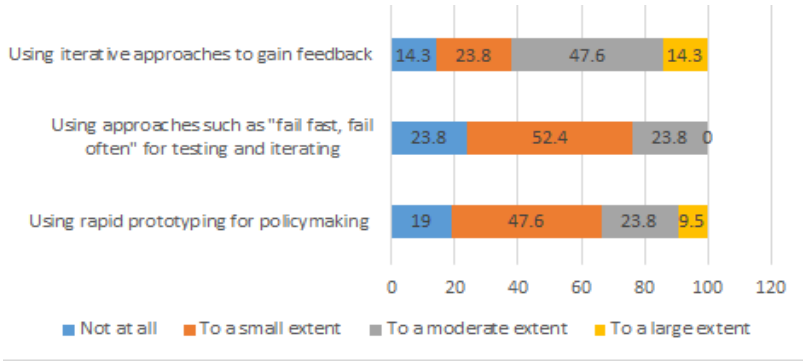

Figure 9 Application of concepts learned.

Overall, the survey showed that most participants applied the iterative and experimental concepts learned in the workshops and almost half of the respondents utilised the knowledge obtained through the workshops at least monthly (Figure 9).

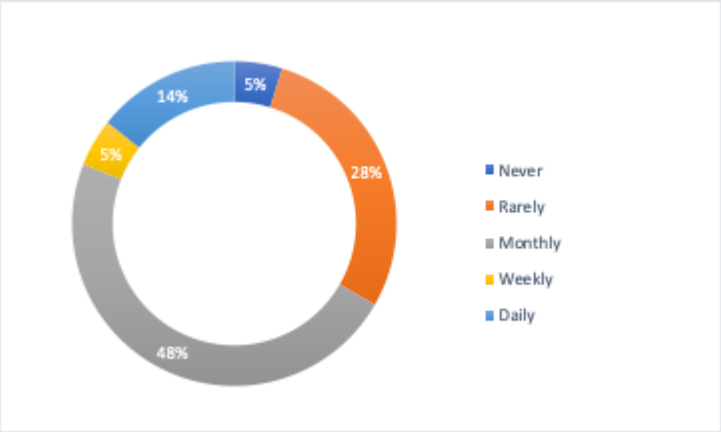

Figure 10 Frequency of application of knowledge gained through the workshops.

Another aspect observed was that policy makers tend to suggest a combination of pre-set ideas, meanwhile, designers come up with more 'out of the box' ideas (as shown in section 3.1 Creativity and ideation by the different groups).

In addition, participants provided further feedback on the workshops. Some recommendations include a request for a modular course (like 1-2 hours per day for a week), as well as the importance of addressing wider organisational dimensions, as indicatively expressed by one of the participants:

> "create better interaction between the other members, wish to be able to use the skills and knowledge more but currently it is a bit difficult to do that in my organization where there was not much engagement with stakeholders/policy maker happens. And most of the discussions were undertaken by HoD rather than officers"

Moreover, other challenges were evidenced during the workshops. One of the participants observed the limitations of the use of experimental approaches such as "fail fasten, fail often" when it comes to the area of health that is built upon evidence-based data also considering emergency and health cases in which the implications of failure may have an important negative impact.

The personas provided were inspired by real-world people and their challenges during the COVID-19 pandemic. However, participants with a design background recognised the need to engage with communities or the groups that are targeted in the policy development, conducting activities with communities directly instead of taking as a reference a persona. This was mostly evidenced during the workshop that targeted design researchers. On the other hand, during the workshop focusing on policy makers, these concerns did not arise.

Another need identified by the workshop facilitators was to bring together the different stakeholder groups as each one of the workshops targeted a different audience and their needs regarding design and policy making differ.

4. Value and challenges of rapid prototype of global health policies

On the one hand, rapid prototype can support in coming up with situated solutions to global health issues, especially in low-resourceful settings that are not covered by global health guidelines as preventative measures are not feasible for those communities considering their livelihood diversity and other socio-economic determinants (e.g., access to water and hygiene products).

On the other hand, when it comes to experimental approaches such as “fail fasten, fail often” in the area of health and in the context of emergency, evidence-based decision making is critical. However, the concept and practice of rapid prototype of policy with communities are not opposed to evidence-based decision making. Instead, it helps to complement data by bringing the lived experiences of peoples to early policy development. This is the kind of qualitative data that quantitative approaches often fail to capture.

These qualitative data (told through a variety of design methods, such as storytelling, journey maps, etc.) provide us with the reasons why things are happening in a certain way in a community and bring awareness about peoples’ livelihood diversity, the barriers, and constraints that may affect the effectiveness of a policy. Furthermore, the principle of engaging communities in the decisions that affect their lives is essential for democracy, and if policy makers want to really shape effective policies for citizens, they need to recognise peoples’ realities, needs and practices beforehand, especially when it comes to protecting people’s elementary human rights.

Policy makers and early-career professionals that joined the workshop demonstrated an openness to and curiosity about rapid prototyping, for instance, requesting modular curses and actively engaging in ideas generation and iterative processes. Also, the survey indicated that there is potential to strengthen the application of rapid prototype in policy making by providing follow-ups.

People with different backgrounds may have different ways of generating solutions to challenges. This is expected as designers are encultured to exploit creativity and policy makers may refer to their prior knowledge and experience (e.g., for instance, including campaigning materials) when suggesting solutions as most education outside the creative industries tend not to have a strong emphasis on creative processes. The critical factor is how they can collaborate towards a solution that is effective for communities and how communities can have their take and ideas considered in the early development of health policies.

People with a design background and policy makers have different needs regarding creative and innovative policy making processes that utilise rapid prototype. Therefore, this learning process is a two-way street. Expert designers can learn more about policy making to better craft situated design approaches and tools also considering policy aspects, and policy makers should understand better design approaches and methods to be able to cope with the

change from traditional policy making processes towards more creative and innovative policy making in order to tackle complex societal challenges, including public health ones.

5. Conclusion

One of the policy concerns involves scalability. However, the need for situated policies that work well in low-resourceful settings, addressing the needs of underserved communities makes it harder to replicate the same policy for different community contexts. We believe that multiplying initiatives and actions is key rather than replicating those in different settings. Therefore, rapid prototype of health policies can be a helpful way of tackling health challenges considering communities' cultural, social, and economic determinants. Nonetheless, the prototype of health policies requires designers and policy makers, who are concerned with these interconnected and complex societal and health challenges, to establish constructive dialogues beyond inter- and multidisciplinary collaboration, bringing also peoples' voices to the design and test of health solutions in multisectoral approaches.

Moreover, it is critical to bring scientific knowledge of health to the rapid prototype as well. Hence, a multisectoral and multi-stakeholder approach in which designers are not only concerned with co-creation and innovation but with how these different stakeholder groups can talk to one another and be actively listened to is necessary in order to effectively collaborate. This also involves the ability to make communication accessible and clear for diverse groups of people through, visual methods, for instance.

This is a long-term change that also makes necessary the evolvement not only of professional cultures but also of organisational cultures as the organisation leadership needs to be open to engaging with a more comprehensive array of stakeholders and develop cultures and practices that enable this to happen. Therefore it involves continuously promoting these inter- and transdisciplinary collaborations through activities that involve these diverse groups.

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