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Design-led Approach to Co-production of Values for Collective Decision-Making.

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Abstract: Experience Labs are design-led spaces for co-creating preferable futures by bringing academic, business and civic stakeholders to work together with citizens using a participatory design approach. Differing value systems of stakeholders, however, can pose challenges when working collaboratively. Experience Labs support exchange and co-production of values among diverse stakeholders by making them articulate and visible through design, to resolve conflict and to support meaningful decision-making towards progressing ideas whilst integrating a multiplicity of perspectives. In this paper, we discuss the creation of an ‘ethical imagination space’ to explore preferable futures with diverse stakeholders; the core values of the Experience Labs which support the creation of this space; and the key qualities that support the exchange and co-production of shared values to enable collective decision-making. We propose that the ‘next thinking’ for design involves consideration of the ways in which we engage with values in cross-sectoral collaborations to enable collective decision-making.

Keywords: Values, decision-making, participatory design, collaboration, ethical imagination

1. Introduction

Experience Labs are design-led spaces for co-creating preferable futures by bringing academic, business and civic stakeholders to work together with citizens using a participatory design (PD) approach. A central aim of Experience Labs is to support and move participants’ thinking beyond considering a range of possible futures from an optional mindset, towards an ‘ethical imagination’ for the creation of preferable futures based on the values of individual and collective wellbeing, which enhance quality of life (McAra-McWilliam, no date). In the health and social care context, the need for innovation in the way that care is delivered and received is a response to the growing challenges facing the health care service (Scottish Government, 2011). Using design innovation methods, Experience Labs collaborate with key stakeholders within the health and care context in Scotland to tackle these challenges. Collaboration between diverse stakeholders and active engagement from citizens is crucial for transformative innovations (Goddard, 2009). The challenge for PD here is to organise alternative settings for innovation that are more democratically oriented than traditional settings that focus on expert views, and move from a technocratic view of innovation

towards an emphasis on socio-cultural dimensions of innovation (Björgvinsson, Ehn, and Hillgren, 2010). This can pose a challenge when working with academic, business and civic stakeholders with differing values.

The role of values within design decision-making remains a largely unexplored area (Coles and Norman, 2005, cited in Trimmingham, 2008). Existing literature distinguishes values from other decision-making influences, namely knowledge and skills, arguing that decision-making relies on a combination of all three (Trimingham, 2008); and highlights the need to engage with values more explicitly to use it as an organising principle in PD (Iversen, Halskov and Leong, 2012). Traditionally a number of functional and technical decision-making tools (Darses, 2002) along with skills acquired through deep learning and practice, i.e., 'designerly' ways of knowing, thinking and acting (Cross, 2001) support the shaping of design arguments and guide the decision-making process. In PD, the involvement of diverse stakeholders creates issues of gaining informed consensus and settling possible disputes, reinforcing the complexity in decision-making (Darses, 2002; Leon and Toniolo, 2015). Misaligned or conflicting values of diverse stakeholders create challenges in establishing goals, especially in the early stages of the design process. PD is about negotiating values realised through participation (Iversen et al., 2012). Similar to Scandinavian approaches (Gregory, 2013), Experience Labs recognise conflict and contradictions arising from multiple views as a resource for design rather than a constraint. Experience Labs attempt to create a safe and empathetic space for exchange, negotiation and co-production of shared values among diverse stakeholders, to find resolution and support meaningful decision-making. This helps to progress ideas whilst exploring a range of options and integrating a multiplicity of perspectives. In this paper, we discuss the creation of an 'ethical imagination space' to explore preferable futures with diverse stakeholders; the core values of the Labs which support the creation of this space; and the ways in which we support the exchange and co-production of shared values to enable collective decision-making. We propose that 'next thinking' for design involves consideration of the ways in which we engage with values in cross-sectoral collaborations to enable collective decision-making.

2. Creating Preferable Futures Using an Ethical Imagination

A combination of academic, civic and business partners are brought together in the Labs, who identify key challenge areas along with innovation opportunities within their domains of practice. The participants in a Lab are invited based on their lived experience and expertise within the innovation context, with a focus on those who will benefit from the proposed innovation, i.e. the end user of a product, service or system. Envisioning change, however, involves shifting from a narrower focus on designing a product/ system to conceptualisation of social practices, continuous learning and change, and imagined futures (Gregory, 2003). The Labs aim to support participants to move from the 'mundane' to the 'creative' imagination, defined as the ability to synthesise ideas and concepts from various sources, to make something new, or to re-new (McAra-McWilliam, 2006), to redefine challenges, imagine future possibilities and critically evaluate those which are preferable. Using tools and artefacts engages the creative imagination to allow a range of possible futures to be explored based on the richness and diversity of experiences and perspectives rather than a simple extrapolation of current trends from a single perspective (ibid). Using processes based on the creative imagination generates more attractive future possibilities by moving the participants' thinking beyond what is likely to happen to creating collective visions of what is the best that can be and is preferable from multiple perspectives: an 'ethical imagination.'

When exploring multiple futures that might be considered equivalent in terms of functionality and usability, there can be a moral basis for choosing between alternative design decisions (Robertson, 2006 cited in Robertson and Wagner, 2013). In the Labs participants engage an ethical imagination to create preferable futures which meet the needs of multiple stakeholders. Participants engage explicitly and implicitly in ethical decision-making through trialling imagined actions and exploring the potential consequences, resulting in an amalgamation of ideas and shared decisions (Lloyd, 2009). Realistic settings are created to allow for the trialling of scenarios and actions, and make visible the implicit ethical considerations that underpin and inform the decision-making process. Bespoke design tools and artefacts assist people in embodying an imagined future world which has reference points to the real world. The activities and tools are modelled, practised and nurtured to support all those who are involved to feel safe to participate fully and comfortable to take risks (Bryan, 2004 cited in Miell and Littleton, 2006). A variety of tools such as scenario boards and experience maps are used to enable participants to synthesise their current lived experiences, and gradually transition towards imagining preferable futures. The activities and tools are informed by core values that support participants to engage in an ethical imagination and nurture collective decision-making.



Figure 1. Activities and tools used across various Experience Labs projects to capture lived experiences of participants and support ethical imagination to create preferable futures. Image credits: Sanne Ree Barthels, Louise Mather, Hannah Laycock.

3. Core Values of Experience Labs

A number of values guide the design of Experience Labs and the ways in which participants collaborate in the design process. Through our reflective practice spanning over a period of three years and over eighty Labs across approximately 15 health and care topics, these values have emerged as crucial in supporting collaboration, imagination and decision-making.

The values of inclusivity, empathy and reciprocity are key to facilitating participation, establishing trust and enabling collaboration among diverse groups. Different voices need to be heard in a design process, and at its core PD has an ethical motivation to support people to engage with each other in envisioning futures and shaping their world (Robertson and Wagner, 2013). Experience Labs ensure that all participants feel able to engage and contribute using an open and inclusive process. Different sensitivities, abilities and levels of care/support are taken into account while designing the activities, methods and tools to ensure inclusivity when working with diverse groups, such as people with disabilities or older adults (French, Teal, Hepburn and Raman, in press). Similarly, the value of empathy is crucial to achieve a high level of engagement and collaboration, ensuring that along with the shared experiences within a group the diversity in their knowledge and experiences are made visible to allow mutual learning and appreciation. Dialogical approaches such as using personal artefacts to share experiences, collaborative storytelling and creative pop-up activities in public spaces have been used to create meaningful engagement with participants and to promote empathy with and among those who participate (ibid). The ability to shape and sustain reciprocal relationships also has an impact on the level of engagement and establishing the nature of collaborations within the Labs. By facilitating a creative, joyful and reflective experience of participation (Robertson and Wagner, 2013) and the understanding that the design learning will benefit participants or others in similar situations in the future (Restakis, 2010), a voluntary exchange of ideas is nurtured in the Labs.

Experience Labs foster key values such as creativity, openness and optimism to support participants towards imagining, trialling and iterating preferable futures. The choice of methods and design of bespoke tools, along with a multiplicity of perspectives brought by diverse groups create conditions conducive to creativity within a Lab (Brattetei and Wagner, 2012; French, Teal and Raman, 2016; French et al., in press). Being in uncertainty without affecting a premature closure of the creative process is crucial for creative imagination (McAra-McWilliam, 2007). It is increasingly gaining relevance when working with complex systems, and is a guiding principle for the design and facilitation of PD activities within the Labs. Openness is crucial for synthesising a multiplicity of views and seeing things differently to allow novel and surprising solutions to emerge (Brattetei and Wagner, 2012). At the same time, nurturing optimism and believing that current conditions are changeable for the better is important (Boyer, Cook and Steinberg, 2011). An assets-based approach (Foot and Hopkins, 2010) is used to support participants and project partners to think positively about change, by identifying their collective strengths and opportunities for improvement rather than problems and deficits, to envision preferable futures.

Creating shared insights and awareness of multiple perspectives supports informed decision-making. Fostering equality is crucial for facilitating the exchange of expert and experiential knowledge through an iterative process of social learning (Sanoff, 2008). Experience Labs strive to promote equality and remove any existing power dynamics by choosing spaces that are neutral, and by creating an informal and relaxed atmosphere where all participants feel comfortable being critical and sharing their views with each other. Sometimes a series of Labs are organized with separate groups to map different perspectives on the topic, identify any potential barriers to equality and inform the design of collaborative activities to overcome them before bringing diverse groups to work together in a Lab (French et al., in press).

These core values guide collaboration and ethical imagination, and create the conditions conducive to collective decision-making. However, the values that inform negotiation of design arguments and decision-making towards identifying preferable futures are themselves co-produced and manifested 'in the moment' when the participants and project partners engage with the tools and with each

other. Therefore, giving attention to the emergent values and understanding how they influence the progression of ideas towards preferable futures is critical for collective decision-making.

4. Co-production of Values for Collective Decision-making

There are two strands of decision-making in the Experience Labs: firstly, the decisions which inform the design and implementation of the Labs underpinning the PD process; and secondly, the decisions relating to the innovation context and progression of ideas during the Labs. Lab researchers make a number of decisions related to the first strand. A key decision involves gaining a balance of perspectives and this is informed by a period of research to gain an understanding of the project context. Another decision relates to the choice of specific methods, activities, tools and artefacts used in the Labs. With respect to the second strand, researchers make a number of decisions during the Lab, such as “how to proceed; give form to the visual and other representations; help establish meanings, motives, and causality; respond when something breaks the expected flow of events; and often invent fresh and creative responses on the spot” (Selvin, Buckingham Shum and Aakhus, 2010). However, the emphasis is on supporting collaborators in the design process to collectively make decisions pertaining to the innovation and the progress of ideas towards preferable futures. In this context, the project partners and participants may take on new roles that differ from the roles they assume in everyday situations. The partners, for example, may become participants in some Labs; or the participants may assume the role of co-designers. Although partners and participants may assume specific roles, it is important to recognise that they bring with them a set of values that are inherent to the individual or characteristic of the organisations they are representing. This could have an influence on their motivations and impact the decision-making process. Researchers attempt to identify the implicit values that influence diverse stakeholders in addition to gaining contextual insights while preparing for the Labs. These inform the design of activities, bespoke tools and artefacts, which help to articulate the arguments from different perspectives and make the criteria visible, and support the creation of a shared values space.

Hierarchies and existing power dynamics can pose a barrier in decision-making. PD provides a framework for promoting awareness of existing power dynamics, and dealing with negotiation of conflicting constraints and values by making visible diverse stakeholders' interests and knowledge (Hyysalo and Lehenkari, 2002; Gregory, 2003). However, there are no set rules or standard tools to guide collective decision-making, and the criteria are often spontaneously formulated during the discussions and debates (Darses, 2002). Tensions are made visible to allow discussion among the group as part of the shift towards the ethical imagination. Removing hierarchies and relinquishing of authoritarian control is promoted in favour of a more democratic engagement. Although project partners may have identified the challenge area and innovation opportunities based on their expertise, it is crucial that they relinquish their sole control over the design concepts in the Labs and are supported to consider new ways of working. Results emerge through the actions of everyone working together in a mutual creative learning experience.

Maintaining an asset-based approach throughout the Labs supports the removal of hierarchy and promotes an ethical imagination and optimism through activities designed to collectively share assets and experiences among the group. Tools within the Labs are designed to promote the sharing of assets and experiences and to enhance dialogue and negotiation of viewpoints (French et al., 2016). The tools support an empathic experience among participants which builds trust and enables the group to understand how the individual perspectives fit together as a whole. The resulting

shared experience elicits individual values and enables co-production of values that are pertinent to the project context towards collective decision-making.

Narratives play a key role in sharing experiences and creating a shared understanding among diverse groups by supporting empathy and imagination. Constructing and sharing personal stories and comprehending the story of others allow participants to enter the decision-making process by including contextual elements, which complement and/or shape the criteria for decision-making (Hall, 2002, cited in Robertson and Wagner, 2013). Tools such as scenario boards and Lego are used for sharing stories and to promote a shared language ensuring inclusivity and equality by removing jargon. The narratives are captured visually and in the Lab artefacts to create a trail of contributions from all those involved incorporating a multiplicity of views to support collective decision-making. In addition to visuals and tools, the use of metaphors and analogies play an important role in supporting an ethical imagination by prompting new thoughts and allowing stakeholders to see things from a new perspective. Metaphors chosen are usually neutral and relatable to a diverse group of people. Metaphors, thus, help to explore and articulate connections between experiences and views of all those participating, and establish more literal meanings to the experiences (Beaney, 2005).

Creating a visible trail of diverse experiences and views from multiple stakeholders using visuals and artefacts also helps to broaden stakeholders' perspective on a topic and to make visible proposed criteria deemed as important for decision-making by different groups. This helps a systemic view to emerge on the topic and create new points of reference, which are crucial to the collective decision-making process (Rasmussen et al., 1991, cited in Darses, 2002). Ignoring conflicts could potentially lead to outcomes that become problematic and are not effective for everyone (Gregory, 2003). A systemic view examined from multiple perspectives is important to ensure that any conflicting views may be collectively examined, negotiated and synthesised during decision-making.

5. Case Studies

The following section presents two case studies to illustrate the role of values in supporting collective decision-making within Experience Labs. Each example shows the link between the two strands of decision-making: decisions related to design and implementation of the Labs, and the decisions related to the innovation context and progression of ideas.

5.1 Capturing multi-stakeholder perspectives during prioritisation of requirements for a community tool to improve street accessibility

When designing the activities for the final Lab during one of the projects, researchers identified a need to create a platform for project partners and participants to work together to synthesise insights from previous sessions and finalise key design requirements. Table 1 presents the diverse roles, skills and motivations of all those involved in the project.

Table 1. Perspectives, skills and values influencing decision-making in prioritising requirements for street accessibility.

Roles	Civic partner/ Local council representative/ Participant	Academic partner/ Health academic/ Participant	Participant/ Wheelchair users and representatives from disability groups
Background/skills	Service improvement and	Research, health practitioner	Lived experiences, awareness of general challenges related to the

	implementation		disability
Motivations	Improving service quality, encouraging community participation	Impact and policy implications	Improving usability and quality of services
Decision-making influences/prior experiences	Consulting users for feedback, not joint decision-making	Influencing policy from the ground	Voicing opinions and often not receiving any response

In response to the need for creating a multi-stakeholder perspective for prioritisation, a tool was designed to create a democratic platform for community groups and citizens to work together with the project partners towards prioritising design requirements.



Figure 2. The three parts of the tool which helped to guide the decision-making process by articulating multiple perspectives, distilling requirements by reviewing insights from previous sessions and collectively prioritising preferable outcomes. Image credits: Hannah Laycock, Robert McFadzean.

The tool was designed to support the values of equality and creativity, and create a shared understanding for setting design goals together in the Lab. It had three parts, similar to an innovation generator (Gray, 2012). Through using the tool the aim was redefined from a multi-stakeholder perspective by reviewing insights and verifying key themes from previous sessions. Examples of existing services were provided to open up the participant's thinking and inspire them to consider a range of possibilities that suit their own context. Understanding what impact similar services have had in other contexts helped to distil key requirements. Creating a collective pool of requirements

and examples on a shared platform supported negotiation between diverse perspectives; e.g. when choosing between high-level data capture to influence policy or on the ground interventions such as finding routes, the primary function of the tool was collectively agreed as a navigation tool for people with mobility issues over data capture for policy influence. This was aided through capturing emerging values and requirements alongside insights from previous Labs. There is a general risk of prioritisation often being implementation-led rather than needs-led, but bringing in diverse groups and capturing their experiences and views on preferable outcomes in the earlier sessions and making them visible to guide the discussion using the design tool helped to ensure that all views were considered when finalising the key requirements. The tool created a shared platform and encouraged the community to have a voice in decision-making related to local issues.

5.2 Use of narratives to engage vulnerable groups in decision-making to co-design a game-based learning tool

Another example focuses on the use of narratives to engage young people with learning disabilities to ensure they had an equal voice in decision-making during co-design sessions. Table 2 presents the diverse roles, skills and motivations of all those involved in the co-design sessions.

Table 2. Perspectives, skills and values influencing decision-making when co-designing a game-based learning tool.

Roles	Academic project partner/ Serious game researcher/ facilitator	Civic partner/ New media education project officer/ facilitator	Participant/ Trainer/ facilitator	Participant/ Young people with learning disabilities
Background/skills	Serious games, UI	Learning needs, behavioural change	Learning needs, behavioural change	Lived experiences, personal gaming and learning preferences
Motivations	End product, game based learning tool	Quality of training, impact	Quality of training, impact	Enjoyable learning experience
Decision-making influences/prior experiences	Limited time and resources, translating user needs to design game based learning tool	Understanding learning needs, creating learning modules for young people	Translating learning needs and communicating on behalf of the learners	Psychosocial needs, often told what is best for them

In this example, core values of inclusivity, empathy, openness and equality ensured that the young people were able to contribute to the decision-making process. This was achieved by shifting the focus of the activities from the end product to individual needs and preferences related to learning experiences. Creating a platform for sharing personal experiences helped to establish empathy and trust in the group. Capturing the narratives visually and using artefacts created by the young people in the early stages of the project allowed gradual progression towards building low-fi prototypes over multiple sessions. Additionally, the use of metaphors such as talking about ‘superpowers’ and using Lego and role-play to imagine future scenarios helped to make the process creative and open to new possibilities, and enabled the young people to discuss their expectations around perceived skills and

benefits they could gain by using the learning tool. It also helped to create a more equal platform for the young people to work directly with project partners and researchers, whilst the presence of the trainers provided a sense of familiarity and enhanced support.



Figure 3. Narrative tools and metaphors used to capture the lived experiences of participants along with their learning needs and gaming preferences during the co-design sessions. Image credits: Louise Mather.

All stakeholders working together ensured that the game concepts emerged directly from the co-design sessions, and the progression of ideas and key values were captured in the artefacts rather than being re-interpreted later. For example, based on the individual narratives and ‘superpowers’ it emerged very early in the process that psychosocial values such as making friends and gaining confidence were key for the young people, along with values such as safety and privacy highlighted by the trainers as part of the learning module, and were collectively taken forward into the final concept for the game-based learning tool.

6. Discussion

This paper has identified the values supporting collective decision-making in the practice of PD within Experience Labs. These values are realised through tools, activities and the roles of researchers, by creating conditions conducive to collective decision-making. The core values nurtured in the Labs to support collaboration inform those that are co-produced during the process, and together enable collective decision-making.

In breaking down hierarchies, employing an asset-based and narrative approach, and resolving conflict by making the decision-making process visible through tools and artefacts, the Labs elicit the values of different stakeholders, and enable the sharing and co-production of values within the Lab. We propose that attention to the values that are nurtured in the Labs and those which emerge during the design process creates a space that supports collective decision-making. The learnings

shared in this paper support the argument for a more careful consideration of values as an organising principle in PD (Iverson et al., 2012) and also demonstrate their influence in the decision-making process to the same extent as knowledge and skills (Trimingham, 2008).

The methods and approaches discussed in this paper support collective decision-making in the following ways: emphasising mutual learning over power play; using narratives to complement specialist knowledge; and creating a democratic platform to synthesise divergent views over neutralising conflict. These are crucial qualities for creating a PD space that nurtures collective decision-making. Utilising tools and artefacts to support this space aids the sharing and translation of diverse perspectives towards an ethical imagination that enables the co-creation of preferable futures.

The context of health and care itself is experiencing a shift towards a model of shared decision-making where patients are empowered to take a more active role in decision-making regarding their health. In this context, shared decision-making is defined as a “two-way relational process of helping people to reflect on, and express, their preferences based on their unique circumstances, expectations, beliefs and values” (Chief Medical Officer, 2016). Experience Labs are aligned to this model in that they encourage reflection, support expression of preferences based on the values and lived experience of participants. We propose that by operating in this way, the outcomes and approach of Labs have the potential to positively impact shared decision-making in the context of health and care. Therefore, when considering ‘next thinking’ for collective decision-making in PD, it is important to examine how the inherent values shape the adaptation of PD approaches and methods to make them context-specific and support the emergence of shared values while engaging with diverse stakeholders.

7. Conclusion

In this paper we have shared the core values of Experience Labs that support collaboration among diverse stakeholders engaging in a PD process, identified through our reflective practice. We have discussed how the core values support an ethical imagination to create the conditions for collective decision-making towards preferable futures. As a result, we have distilled key qualities that support cross-sectoral collaboration by enabling new communicative spaces for experiential learning to nurture collective decision-making. We have illustrated how these qualities are applied in the health and care context through the Labs, however, we propose that the emerging qualities of collective decision-making have value in other contexts. We propose that ‘next thinking’ in PD should focus on engaging more explicitly with values to shape ways in which cross-sectoral collaborations are supported through an ethical imagination where new meanings and motivations for preferable futures can take form through collective decision-making.

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