Mengda Wu

How the Community Space Environment Shapes Behaviour and Relationships: A Community Participatory Design Toolkit

Abstract

Experiencing home confinement during COVID-19 deepened my observation of community spaces, while AI's rise has broken disciplinary boundaries, allowing me, as a graphic communication designer, to explore cross-disciplinary research.In recent years, I have examined how spatial environments shape diverse social groups in London and China—from autistic children in pediatric hospitals to behaviors influenced by CCTV surveillance and urban planning.This research develops a participatory design toolkit that empowers non-designers, particularly 'Citizens of Worlds' (Jennifer Gabrys, 2022) from diverse cultural, geographical, and sensory backgrounds, to engage in the design process.Through workshops and field research, this study navigates the intersections of spatial, participatory, and social design. Rather than solving urban issues, this research challenges the accessibility of design tools for non-designers in community co-creation, enabling them to move beyond being mere respondents to becoming active co-creators. It advocates for an inclusive, future-oriented toolkit that empowers and serves community residents.

Introduction

The theoretical foundation of this research draws from key works in social and spatial theory. Specifically, it engages with Lefebvre's concept of the production of space, who distinguished three main spaces: conceived space, perceived space and lived space(1991), Jacobs' (1961) critique of modern urban planning, and de Certeau's (1984) exploration of tactical urbanism and everyday spatial practices. This study emphasizes the dynamic, adaptive nature of participatory design, viewing design as an ongoing process rather than a static intervention. In addition to these foundational theories, the research incorporates contemporary debates on co-design, participatory urbanism, and social sustainability. Notably, it references Sanders & Stappers' (2008) work on co-creation, Wangel's (2012) advocacy for designing for multiple futures, and Kimbell's (2019) two-stage social design practice framework. This integration of social theory and participatory design provides a solid foundation for developing a flexible, co-creative framework for community spatial transformation.

Building on Ramia Maz'és (2019) future-oriented design approaches, this research explores how the toolkit can evolve over time, enabling communities to continuously reshape their spatial and social environments in response to emerging needs. A critical issue within participatory urban design is the assumption that community engagement automatically leads to empowerment. Berry and Iles (2010) argue that participatory initiatives are often co-opted by institutional and economic forces, serving urban regeneration agendas rather than addressing authentic community needs. Similarly, Wilkie et al. (2017) emphasize that design is not only about shaping physical spaces but also about influencing the experiences and expectations of their inhabitants. This research aligns with these critical perspectives, interrogating the risks of institutionalization within participatory design, while positioning the co-creation toolkit as a counter-practice that prioritizes social sustainability and adaptive community agency.

Ensuring that design tools are accessible to a diverse range of participants requires a more inclusive approach. This research moves beyond a universal model, instead tailoring design processes to the specific needs of different community groups (Spencer González et al., 2020). It acknowledges the broad spectrum of human diversity—including variations in ability, language, culture, gender, age, and sensory perception (Inclusive Design Research Centre, n.d.). Three dimensions shape the urban environment through deliberate planning and decision-making (conceived space), tangible spatial interactions (perceived space), and personal, lived experiences

that foster identity and meaning (lived space) (Wiedmann, Salama, and Thierstein, 2012a).Urban governance provides the framework for an efficient city, but it is the users who shape and adapt spaces to their needs. (Wiedmann, F., Salama, A. M. and Mirincheva, V. , 2014)By embedding this perspective into participatory design, the study critically examines who takes part, at what points, and through what forms of engagement.

Through the development of this adaptive inclusive design toolkit, this study investigates how participatory design can enhance the 'Citizens of Worlds' perception, interpretation, and experience of community spaces, while critically assessing its potential limitations.

Enquiry

· How do spatial environments shape social behavior and relationships within community spaces?

· How can participatory design methodologies foster genuine community engagement, rather than serving institutional or economic agendas?

· How to involve non-designers with different 'languages' in the design decision-making process?

· How can a participatory design toolkit facilitate sustainable and adaptable community spaces across different cultural contexts?

Objectives

A participatory design toolkit for cross-community and cross-sensory responses. This project explores the intersection of social design, participatory design, and inclusive design, expanding the boundaries of socially engaged design practices.

It will be realized through literature review, case studies, field research, workshops, problem deep-diving, prototyping, and model testing.

Methodology

Designers are responders, not responsibility holders (Thorpe & Gamman, 2011). A key characteristic of inclusive participatory design is inclusivity itself, and a crucial criterion is how participants can transition from mere feedback providers to design decision-makers (Luck, 2018). The challenge lies in ensuring that inclusive participatory design effectively reflects community needs (Berry & Iles, 2010) and genuinely represents the voices of community residents.

This research adopts a participatory social design practice methodology, grounded in Kimbell and Julier's (2019) two-stage social design practice framework, combining qualitative methods such as ethnographic fieldwork, participatory workshops, and prototype testing. By analyzing case studies and drawing on spatial theories like Lefebvre's (1991) production of space and Jacobs' (1961) critique of urban planning, it explores how design influences community behavior and relationships. The toolkit is developed through iterative feedback from diverse cultural contexts, ensuring adaptability and social sustainability. This methodology integrates theory and practice, linking participatory design with ongoing community engagement and spatial transformation.

This research employs Kimbell and Julier's (2019) two-stage social design framework, integrating:
· Field Research: Cataloguing existing case studies of adaptive community spaces and analyzing user interactions.

· Participatory Design Workshops: Engaging stakeholders to co-develop the design toolkit.

· Prototype Development and Testing: Creating and iterating toolkit elements through real-world application.

· Critical Reflection and Evaluation: Assessing the toolkit's usability, adaptability, inclusive, and impact through qualitative feedback and observation.

Stage 1: Exploratory Phase

1. Conduct a literature review focusing on spatial production, participatory urban design, and power structures in community spaces.

2. Analyze case studies of various community spaces, particularly hospitals, surveillance-influenced areas, and participatory urban interventions, to understand the impact of design on social behavior.

3. Explore and define research questions, participants, stakeholders, publics, methods, data, and outputs through collaborative inquiry, including analyzing cases like urban fountains repurposed as 'beaches' by children. These examples illustrate the community's ability to reinterpret spaces in ways that challenge initial design intentions and highlight the importance of spatial adaptability.

4. Design and test preliminary prototypes of the community co-creation toolkit, encouraging participants to collectively explore and examine its potential outcomes and unintended consequences.

5. Investigate how design interventions influence social behavior in community spaces through ethnographic research.

Stage 2: Developmental Phase

6. Building on the first stage, further advance the research, focusing on more specific, researchable issues.

7. Rework research questions, participants, publics, methods, data, and outputs, ensuring greater confidence, coherence, and consensus in the second stage.

8. Further develop the co-creation toolkit prototype and iteratively test it in different cultural and geographical contexts to ensure its sustainability and adaptability.

9. Evaluate the effectiveness and limitations of participatory design in fostering genuine community engagement, using examples such as urban fountains becoming 'beaches' to assess how communities reinterpret public spaces and how the toolkit can facilitate such adaptive practices.
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10. Disseminate findings through publications, exhibitions, and collaborative workshops, fostering interaction and cooperation between academic and practitioner communities.

The Need for a Sustainable and Adaptable Co-Creation Toolkit

Sustainability in Toolkit Design: Beyond Physical Reusability

The toolkit's sustainability must not only consider its physical reusability but also its ability to adapt and migrate across different cultural contexts. This adaptation includes:
• Material Sustainability: Using recyclable, non-toxic, and locally sourced materials to ensure that the toolkit's components are eco-friendly.
• Methodological Sustainability: The toolkit must embody principles that allow it to be applied across various cultural and geographical contexts, ensuring that its core methodologies are flexible and adaptable to local needs and conditions.
• Social Sustainability: The toolkit should enable communities to continually use and adapt it, ensuring long-term impact. For instance, it could facilitate community-driven modifications to the toolkit's elements, based on their evolving needs and aspirations.

Cross-Language and Cross-Sensory Adaptability

One of the critical aspects of the co-creation toolkit is its cross-language and sensory adaptability. This is important for making the toolkit inclusive for a diverse range of participants, including non-literate individuals and those with sensory impairments. The toolkit should include:
• Visual Language: Intuitive graphics, icons, and symbols that transcend language barriers and allow easy communication between community members.
• Tactile Components: Use of textures, braille, and other tactile elements to enable people with visual impairments to interact with the toolkit.
• Auditory Features: Sound cues and voice-guided instructions that allow people with hearing impairments to engage with the toolkit.
• Language Support: Multi-language translations or icon-based instructions that ensure the toolkit can be used by people from different linguistic backgrounds.

The Role of Co-Creation: Empowering Community Members

A core goal of this research is to enable genuine co-design, not just collecting opinions from community members but empowering them to make actual design decisions. Many current participatory design processes stop at the level of feedback collection, where designers ultimately retain control over the design decisions. This research proposes a shift towards "designerless" or "empowerment-based design", where:
• Community-driven Decision-Making: Tools and frameworks are introduced that allow community members to take ownership of the design process, create their own solutions, and test them in real-world applications.
• Decision-Making Platforms: These can include voting systems, collaborative workshops, or decision matrices that allow non-designers to be key players in shaping the space they inhabit.

This process of "de-designing the designer" shifts the traditional top-down model of design to a more collaborative and inclusive model, where the role of designers is to facilitate, rather than dictate, the design process.

Prototyping and Testing the Toolkit

Throughout the research, prototyping and testing will be an iterative process, engaging community members in the development of the toolkit. This includes:

- Collaborative Workshops: Engaging community members in co-developing the toolkit through feedback loops and brainstorming sessions.

• Real-World Testing: Implementing the toolkit in different settings, from urban regeneration areas to grassroots community projects, to assess its practical applicability.

Proposed Outcomes

- A Co-Creation Design Toolkit: A validated toolkit that facilitates participatory interventions in community spaces, adaptable to different cultural and sensory contexts.
- Methodological Contributions: Advancing the field of participatory design by presenting an adaptable framework that empowers communities to take control of the design process.
- Practical Strategies for Policymakers: Offering actionable strategies for urban planners, designers, and policymakers to implement participatory design practices that foster inclusive and sustainable community spaces.

• Theoretical Insights: Providing new insights into how community spaces influence social behavior and relationships, contributing to the field of spatial and social design.

Conclusion

This research aims to create a participatory design toolkit that is not only adaptable across different cultural and geographical contexts but also ensures that communities are empowered to drive the design of their own spaces. By addressing issues of sustainability, cultural sensitivity, and community engagement, the toolkit will contribute to more inclusive and socially sustainable urban environments. Through a participatory design methodology, this project will move beyond the traditional boundaries of design, fostering a deeper and more meaningful engagement between community members and their spaces.

bibliography

1. *Berry, Josephine and Iles, Anthony.（2010）. No Room to Move: Radical Art and the Regenerate City. Mute Publishing Ltd. [Book] URL：https://research.gold.ac.uk/id/eprint/12069/*

2. *Certeau, M. de. (1984). The Practice of Everyday Life. University of California Press.*

3. *Jennifer Gabrys, Citizens of Worlds: Open-Air Toolkits for Environmental Struggle. Minneapolis: University of Minnesota Press, 2022. Open-access version available on Manifold.*

4. *Jacobs, J. (1961). The Death and Life of Great American Cities. Random House.*

5. *Kimbell, L., & Julier, G. (2019). "Confronting Bureaucracies and Assessing Value in the Co-Production of Social Design Research." CoDesign, 15(1), 70-84. https://doi.org/10.1080/15710882.2018.1563190*

6. *Lefebvre, H. (1991). The Production of Space. Blackwell.*

7. *Luck, R. 2018. "What is It That Makes Participation in Design Participatory Design?" Design Studies 59 (November): 1–8. doi:10.1016/j.destud.2018.10.002.*

8. *Mazé, R. (2019). "Politics of Designing Visions of the Future." Journal of Futures Studies, 23(3), 23-38. https://doi.org/10.6531/JFS.201903_23(3).0003*

9. *Sanders, E. B.-N., & Stappers, P. J. (2008). "Co-Creation and the New Landscapes of Design." CoDesign, 4(1), 5-18. https://doi.org/10.1080/15710880701875068*

10. *Thorpe, A., & Gamman, L. (2011). Design with society: why socially responsive design is good enough. CoDesign, 7(3–4), 217–230. https://doi.org/10.1080/15710882.2011.630477*

11. *Wilkie, A., Savransky, M., & Rosengarten, M. (2017). Speculative Research: The Lure of Possible Futures. Routledge.*

12. *Wiedmann, F., Salama, A. M. and Mirincheva, V. (2014) 'Sustainable urban qualities in the emerging city of Doha', Journal of Urbanism: International Research on Placemaking and Urban Sustainability, 7(1), pp. 62–84. doi: 10.1080/17549175.2013.870088.*

13. *Wiedmann, F., A. M. Salama, and A. Thierstein. 2012a. "A Framework for Investigating Urban Qualities in the Emerging Knowledge Economies: The Case of Doha." Archnet IJAR 6 (1): 42–56.*

14. *Wangel, J. (2012). Making Futures: On targets, measures and governance in backcasting and planning (Doctoral dissertation), KTH Royal Institute of Technology, Sweden. Retrieved from http://urn.kb.se/resolve?urn=urn:nbn:se:kth:diva-94151.*

References

1. Alexander, C., Ishikawa, S., & Silverstein, M. (1977). A Pattern Language: Towns, Buildings, Construction. Oxford University Press.

2. Alter, H., Whitham, R., Dawes, F., & Cooper, R. (2019). Learning by design. How engagement practitioners use tools to stretch the creative potential of their citizen participation practice. *The Design Journal*, *22*(sup1), 1387–1397. https://doi.org/10.1080/14606925.2019.1594964

3. Åhrén, E. G., Asplund, G., Gahn, W., Markelius, S., Paulsson, G., Sundahl, N., & Åström, I. ([1931] 2008). Acceptera. Arkitektur Förlag.

4. Bjögvinsson, E., Ehn, P., & Hillgren, P. A. (2012). "Design Things and Design Thinking: Contemporary Participatory Design Challenges." Design Issues, 28(3), 101-116.

5. Fry, T. (2009). Design Futuring: Sustainability, Ethics and New Practice. Berg Publishers.

6. Grosz, E. (1999). Becoming Undone: Darwinian Reflections on Life, Politics, and Art. Duke University Press.

7. Hill, D. (2012). Dark Matter and Trojan Horses: A Strategic Design Vocabulary. Strelka Press.

8. Hodson, E., Svanda, A., & Dadashi, N. (2023). Whom do we include and when? participatory design with vulnerable groups. *CoDesign*, *19*(4), 269–286. https://doi.org/10.1080/15710882.2022.2160464

9. Mazé, R. (2007). Occupying Time: Design, Technology, and the Form of Interaction. AHO Press.

10. Manzini, E. (2015). Design, When Everybody Designs: An Introduction to Design for Social Innovation. MIT Press.

11. Kimbell, L. (2011). "Rethinking Design Thinking: Part I." Design and Culture, 3(3), 285-306. https://doi.org/10.2752/175470811X13071166525216

12. Salinas, L., Thorpe, A., Prendiville, A., & Rhodes, S. (2020). "Civic Engagement as Participation in Designing for Services." CoDesign, 16(2), 149-163.

13. Stagias, A., & Mahmoud, I. (2024). Post-occupancy evaluation for tactical urbanism interventions through placemaking model: two case studies from the "Piazze Aperte" program in Milan. *Journal of Urbanism: International Research on Placemaking and Urban Sustainability*, 1–38. https://doi.org/10.1080/17549175.2024.2381532

14. Simonsen, J., & Robertson, T. (Eds.). (2013). Routledge International Handbook of Participatory Design. Routledge.