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Architects as mediators: public interest design for transformative community action

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ABSTRACT

In contexts of spatial marginalisation, participatory design is often positioned as a method to promote community authorship. However, little empirical research explores how such authorship is experienced in practice. This article investigates how engagement in a 2023–2024 university-led CoDesign initiative in an informal settlement on the urban periphery of a Southern African city mediated authorship between architecture students and community field researchers, through spatial translation, material decision-making and construction sequencing. Using a mixed-methods approach, a structured survey captured comparative insights on power dynamics, and long-term ownership. Nineteen respondents reflected on their roles across design and construction phases, with data analysed through descriptive statistics and thematic coding. Findings reveal that authorship was not fixed but negotiated, shaped by shifting responsibilities, and the accessibility of design tools. While sketching, modelling, and hands-on workshops helped bridge communication gaps and build trust, structural constraints often hindered inclusive collaboration. Community ownership was strongest when projects allowed for shared decision-making and local continuity. The study concludes that participatory authorship depends less on intention and more on how processes are structured and sustained. It argues for reframing authorship as an iterative, relational practice that demands flexibility and institutional support beyond the studio.

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CoDesign; authorship; informality; participatory design; community ownership

1. Introduction

In the face of rising urban inequality and failures in basic service delivery, communities in informal settlements increasingly engage in self-organised spatial production. In these contexts, architecture becomes more than the design of buildings; it is a negotiation of power, authorship, and survival. When universities and professionals respond through participatory approaches like CoDesign, they step into contested socio-political terrains where roles and responsibilities are continuously shifting. Within these processes, architects occupy a distinct dual positionality as both technical authors and relational mediators. This enables them to translate lived experience into spatial propositions, ideas into drawings, and drawings into construction details and built form. As a result, architects

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assume risks and responsibilities, as decisions made through participatory processes carry implications for safety, permanence, and regulatory compliance. This article investigates how authorship and ownership were mediated within such engagements, through a reflective study of a university-led CoDesign initiative in an informal settlement in Southern Africa.

The settlement in question is located on the periphery of a major city and occupies former state-owned land that was once used for cultivation. Like many post-apartheid informal areas, it is characterised by insecure tenure, spatial informality, and limited access to infrastructure. However, it is also a site of grassroots resilience, where residents incrementally shape their environment and forge local development structures.

The CoDesign Studio emerged as a long-term partnership between a university architecture department and a local community-based organisation. Each year, transdisciplinary studios bring together students, lecturers, and community field researchers to co-develop spatial interventions through participatory engagement. Field photographs (Figure 1 depicts the field where interventions take place) reveal the embodied nature of this participation, from co-sketching and model-building to live workshops and collective site decisions.

Figure 1. University students and community field researchers walking through the informal settlement.

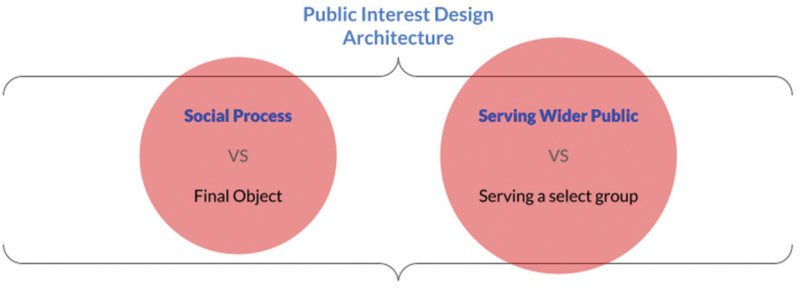


Figure 2. Diagram of Public Interest Design (PID).

Rather than casting students or academics as service providers, the CoDesign Studio positions them as embedded co-learners in everyday spatial struggle. As participants shift between roles, the idea of authorship becomes increasingly fluid. This article uses this CoDesign Studio as a critical case to explore how CoDesign processes were structured, experienced, and negotiated, and how these shaped perceptions of authorship, ownership, and spatial agency.

While Public Interest Design (PID) has long advocated for participatory practice (Figure 2 depicts PID's core issues), there remains a gap between these ideals and their implementation, especially in contexts of informality. Few empirical studies explore how collaborative authorship is enacted or sustained over time. This article addresses these gaps by illustrating how authorship in the CoDesign Studios was mediated across different participants, tools, and project phases.

The aim is to illustrate how participatory design distributes and contests authorship within collaborative frameworks. The argument is that CoDesign holds transformative potential but only when adapted to context, supported through capacity-building, and understood as a relational practice shaped by long-term agency rather than short-term outcomes.

As outlined in Figure 3, the article begins with a literature review on CoDesign engagement frameworks, then outlines the mixed-methods approach used to collect role-sensitive data from studio participants. Findings are presented thematically and followed

Figure 3. Research structure.

by a discussion that reflects on future CoDesign practice. In doing so, the article contributes a context-sensitive account of how authorship in participatory design is co-constructed, negotiated, and occasionally transformed.

2. Literature review

The role of engagement in architectural design has shifted towards more inclusive, community-led approaches, with CoDesign emerging as a key method for fostering spatial justice. This review explores how authorship and ownership are mediated within CoDesign, particularly through the lens of Public Interest Design (PID). It examines power dynamics, barriers to meaningful participation, and the evolving role of architects as facilitators.

2.1. Role of architects and professionals

2.1.1. Shifting authorship in architectural practice

CoDesign recognises the unequal power dynamics within architectural practice and seeks to give marginalised communities a voice in shaping their environments (Bannon and Ehn 2013). Built on mutual learning, it enables professionals to gain contextual insight from users' lived experience, while users engage through universal tools such as sketching (Robertson and Simonsen 2013). This exchange allows non-professionals to contribute meaningfully to the design process. CoDesign reframes expertise as co-produced rather than owned solely by professionals (Steen and Tuurnas 2018). In informal contexts, mediated authorship is key; architects serve as facilitators, not sole authors, enabling communities to assume spatial agency (P. R. Perold and Donaldson 2018). Here authority shifts across phases of the project, disrupting the hierarchy and aligning with Schön's (2014) concept of reflective practice (Awan, Schneider, and Till 2011). In this paper, the architect as mediator is understood as an agent who holds technical power, who must actively redistribute it through tools and translation.

Design is repositioned as a collective, socially embedded process. Community-based participants engage due to identity and place attachment, rather than professional obligation (DiSalvo, Clement, and Pipek 2013). However, even in participatory settings, professionals often retain control (Feldman et al. 2013; Steen and Tuurnas 2018). To realise shared authorship, architects must fully embrace collaboration as central to their practice. Figures like Patrick Bouchain exemplify this by involving stakeholders from the outset, ensuring collective input shapes outcomes (Awan, Schneider, and Till 2011). Mutual learning bridges the gap between technical and contextual knowledge (Bratteteig et al. 2013).

Empowerment plays a critical role in sustaining engagement. Participation becomes meaningful when communities are equipped with tools and knowledge (Jo and Nabatchi 2018), yet many studies focus on short-term outcomes, neglecting whether empowerment is maintained (Feldman et al. 2013). For lasting impact, co-production must continue beyond the design phase (Hamdi 2010; Kim 2018).

2.1.2. Public interest design and grounded architectural practice

Public Interest Design reframes architecture as socially responsive, shifting from designing for communities to designing with them (Anderson 2014). Grounded Architectural Practice applies this in informal settlements through in-situ upgrades and negotiated

expertise (R. Perold, Donaldson, and Devisch 2019), with architects acting as facilitators (Hamdi 2010). This reflects Lefebvre's (1974) theory of the social production of space (Ferdous and Bell 2021).

2.2. Barriers and challenges to engagement

2.2.1. Power imbalances in participatory settings

Power imbalances remain a persistent challenge to democratic CoDesign, often resulting in superficial engagement rather than meaningful collaboration. Arnstein (1969) argues that genuine participation requires a restructuring of power to enable equal contribution, an ideal rarely realised in practice. Participation remains uneven across social groups, with certain actors benefiting more from decision-making while others are excluded (Verschuere, Steen, and Brandsen 2018).

Professionals may unintentionally reinforce exclusion by favouring participants who are more accessible or agreeable (Agger and Larsen 2009). This leads to discursive exclusion, where marginalised voices are underrepresented despite claims of inclusivity. Ballinger and Silva (2021) highlight how architectural education and practice reinforce hierarchical norms, often positioning designers as experts with ultimate authority, thereby limiting community influence.

A related concern is the absence of effective knowledge management in participatory projects. Without proper documentation, lessons are lost, and collaborators unintentionally repeat mistakes (Ferdous and Bell 2021). Bratteteig et al. (2013) define democratic CoDesign through real influence, mutual learning, and co-realisation. However, decision-making power often remains with professionals (Awan, Schneider, and Till 2011; Feldman et al. 2013). As illustrated in Figure 4, their framework helps expose hidden structures, such as agenda-setting and resource control, that constrain genuine collaboration.

Even when participatory methods are used, these deeper control layers remain intact (Blomberg and Karasti 2013). Most projects stall at the middle rungs of Arnstein's (1969) Ladder of Participation, as seen in Figure 4, rather than enabling true co-decision-making. To shift from an expert-client model to one of shared agency, CoDesign must invest in capacity-building. Figure 5 illustrates how degrees of authorship can range between facilitation or a role of primary author; negotiated authorship becomes possible when professionals act as facilitators, not authors, allowing users the opportunity to become primary authors (Steen, Brandsen, Verschuere, and Vanleene 2018).

Deliberate inclusivity requires not only the proactive recruitment of marginalised participants (Durose 2011) but also the cultivation of trust (Simmons and Birchall 2005) and the use of cyclical, responsive communication to foster co-ownership and sustained engagement (Ballinger and Silva 2021; DiSalvo, Clement, and Pipek 2013).

2.2.2. Institutional and structural constraints

Bureaucratic systems, legal frameworks, and professional norms often prevent CoDesign from becoming embedded in formal decision-making (Okyere and Kita 2015; Steen and Tuurnas 2018). Architectural education reinforces top-down approaches (Delport 2016), while efficiency-driven models favour rapid delivery over long-term empowerment (Anderson 2014; Hamdi 2010). Without institutional change, CoDesign risks remaining a symbolic gesture rather than a transformative practice.

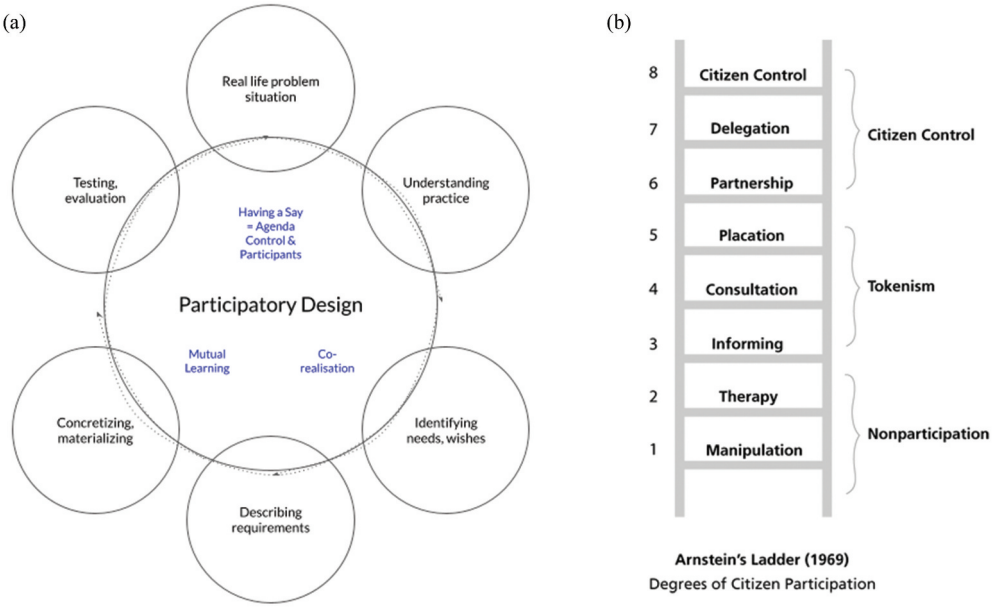


Figure 4. (a) Bratteteig et al.'s participatory framework (b) Arnstein's Ladder.

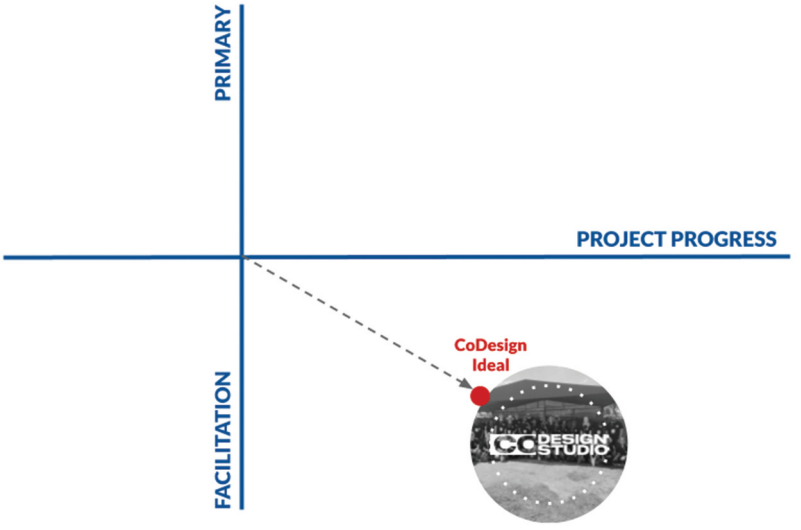


Figure 5. Authorship spectrum with architects' ideal position.

2.3. Methods for effective engagement

This section outlines various frameworks and tools used to facilitate engagement in CoDesign. These approaches provide insight into how authorship is mediated, central to understanding how CoDesign was experienced in the university's 2023–2024 studios.

2.3.1. CoDesign and co-production frameworks

CoDesign operates through flexible guidelines that respond to context (Bratteteig et al. 2013). Co-production occurs when community members actively shape interventions that affect their lives (Steen, Brandsen, and Verschuere 2018). In studio settings, this unfolds through collaboration between students and community field researchers. Pilot projects and structured experiments offer ways to test and refine participatory approaches in situ (Steen and Tuurnas 2018).

Methodologies in CoDesign are typically defined by three elements: the application area, process guidelines, and organisational principles (Anderson 2014). Participatory tools like sketching, prototyping, and games facilitate engagement, though these should not be treated as fixed toolkits but adapted to evolving needs (Brandt, Binder, and Sanders 2013). In informal settlements, local knowledge systems, such as incremental building practices, should be integrated with participatory processes (Okyere and Kita 2015).

2.3.2. Telling, making, and enacting

Brandt, Binder, and Sanders (2013) categorise CoDesign tools into three modes: telling, making, and enacting. Telling techniques, which include storytelling, narrative sharing, and design games, enable participants to express lived experiences and articulate collective values. Design games help structure dialogue and encourage speculative thinking about alternative futures. Future Workshops, as developed by Jungk and Mullert (1987), build on this by guiding participants through a three-phase process of critical reflection on current challenges, envisioning utopian possibilities, and developing concrete action plans.

Making centres on prototyping and material exploration, allowing participants to work with tangible design elements. Models, maps, and locally sourced materials become shared artefacts, boundary objects, that support collaboration across different knowledge domains (Brandt, Binder, and Sanders 2013; Hamdi 2010). Generative tools like cognitive maps elicit tacit knowledge, supporting early-stage ideation.

Enacting involves roleplaying and scenario-building to explore future use. Techniques like participatory theatre invite participants to co-author alternative narratives (Brandt, Binder, and Sanders 2013). Video is increasingly used to support reflection and iterative engagement.

2.3.3. Ethical and community-based approaches

Ethical design tools prioritise equity and reflexivity. Robertson and Wagner (2013) stress that participatory methods should challenge dominance and give decision-making power to communities. Ambiguity, play, and reflection can provoke critical dialogue (Gaver, Beaver, and Benford 2003).

Community-based CoDesign focuses on shared decision-making, iterative prototyping, and interdisciplinary collaboration (DiSalvo, Clement, and Pipek 2013). Designers take on hybrid roles, as facilitators, learners, and consultants, and immerse themselves in context to foster deeper engagement (Blomberg and Karasti 2013).

These frameworks show how CoDesign mediates authorship and why evaluating their application in the CoDesign Studios was key to shaping the survey instruments for this study.

2.4. Evaluating success in engagement processes

Success in CoDesign must extend beyond project completion to include long-term community ownership, structural support, and sustained participation. While often framed as a method for inclusive, user-centred outcomes, its deeper value lies in meeting participants' expectations and enhancing their agency (Osborne, Strokosch, and Radnor 2018). This includes the skills, confidence, and social capital gained through participation, which Osborne, Strokosch, and Radnor (2018) refer to as value-in-use.

CoDesign redistributes authorship through a reflective, creative exchange between professionals and participants (Robertson and Wagner 2013). It validates everyday knowledge (Shapiro 2005), builds capacity (Feldman et al. 2013), and relies on flexible, community-led processes such as re-blocking and enumeration (Cooke 2014; R. Perold, Donaldson, and Devisch 2019). When communities lead and adapt spaces over time, design becomes more sustainable (Ferdous and Bell 2021).

However, meaningful participation requires clarity and structure. Poorly defined roles, excessive meetings, and group pressure can result in disengagement, reinforcing existing hierarchies (Verschuere, Steen, and Brandsen 2018). Empowerment must be ongoing, not symbolic, enabling communities to manage and shape their environments beyond the design phase (Jo and Nabatchi 2018).

In informal settlements, CoDesign supports resilience by recognising these areas as adaptable urban systems, not problems to be fixed (Okyere and Kita 2015). Citizen-led processes improve relevance and foster socio-economic development, from skill-building to public safety (Vanleene and Verschuere 2018).

Yet institutional barriers persist. Legal, bureaucratic, and political structures often restrict participatory outcomes from being implemented (Robertson and Wagner 2013; Verschuere, Steen, and Brandsen 2018). Even successful projects risk being undermined by top-down systems that sideline community influence.

CoDesign, as Bannon and Ehn (2013) argue, is a form of social innovation. Its success must be measured not by delivery, but by the transformation of authorship and agency, embedding collaboration into the broader structures that shape everyday life.

2.5. Gaps in the literature

Despite growing interest in CoDesign, several critical gaps remain. While its potential for empowerment is well-theorised, there is limited empirical research on long-term outcomes and sustained community authorship (P. R. Perold and Donaldson 2018). Most studies assess short-term successes rather than whether communities continue adapting and managing spaces post-intervention (Okyere and Kita 2015).

Institutional constraints, such as bureaucratic systems, professional norms, and funding structures, frequently hinder implementation, yet are underexplored (Steen, Brandsen, and Verschuere 2018). Evaluative models often prioritise design outputs over long-term empowerment or redistribution of power (Ballinger and Silva 2021; Feldman et al. 2013). Persistent power asymmetries also remain, especially where technical expertise is privileged (Awan, Schneider, and Till 2011).

Additionally, the lack of centralised knowledge-sharing limits cross-project learning (Ballinger and Silva 2021). Future research should focus on longitudinal evaluation,

institutional reform, and knowledge management to support sustained, equitable CoDesign practices and enduring community agency.

3. Method and results

3.1. Methodology

This study investigated how CoDesign methods mediate authorship and power dynamics in a 2023–2024 university-led CoDesign studio in an informal settlement and contributed documented empirical insight into how authorship shifted across phases. It responds to calls for more empirical evidence in PID by drawing comparative insights from architecture students and community field researchers.

The studios formed part of a three-year collaborative initiative with a local community-based organisation (Figure 6 depicts this parallel process). A politically marginalised informal settlement in South Africa served as a living lab for participatory experimentation. Students and community researchers worked together in mapping, sketching, workshops, and construction activities (Figure 7 depicts the design process that the students outlined before engaging with community researchers).

A mixed-methods approach was used to combine broad participation with qualitative insight. Following Brown's (2012) evaluation of data capture methods, a structured survey was selected for its accessibility and consistency, especially given potential language and power imbalances.

A non-probability purposive sampling method targeted participants from the 2023–2024 CoDesign Studios. Inclusion required active engagement in at least one project phase. The sample included 19 participants:

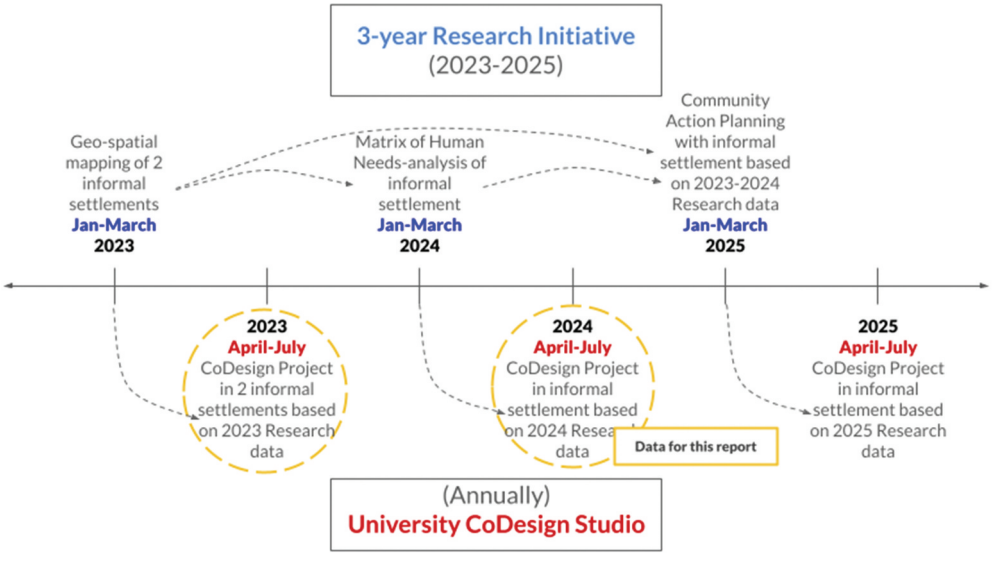


Figure 6. Timeline of university-community projects.

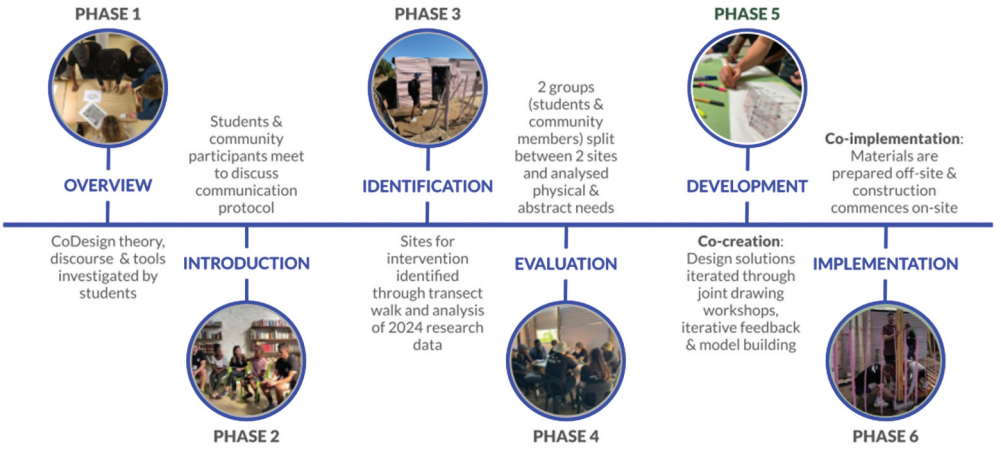


Figure 7. University CoDesign Studio sequence of activities.

- Architecture students from the university, who carry institutional responsibilities, assessment pressures, and an implicit facilitation role.
- Community field researchers affiliated with the community-based organisation, who are distinct from general community members through their paid role and long-term engagement with the university, serving as research partners and knowledge contributors.
- Academic lecturers from the university, who withdrew from the process as scaffolded participants.

Administered via *Google Forms*™, the survey was completed online or in person using university-provided devices. Participants identified their role and responded to a mix of Likert-scale and open-ended questions across four themes:

1. Co-Creation (design phase)
2. Co-Production (implementation phase)
3. Power dynamics and barriers
4. Long-term impact and ownership

Quantitative data were analysed using descriptive statistics in *Excel*™ and qualitative responses were coded inductively on *AtlasTI*™. Themes were compared across roles to trace tensions and overlaps.

Ethical clearance was granted by the university (EBIT/274/2022). Informed consent, voluntary participation, and support for community respondents ensured ethical data collection.

3.2. Results

Analysis of the survey responses revealed four key themes: mediated authorship, barriers to participation, engagement tools, and long-term ownership

3.2.1. Mediated authorship and role fluidity

Roles shifted across phases. Students typically facilitated early design; community members increasingly led during implementation:

> *Levels of authorship change during different periods.* Power dynamics also come into play at different stages.
>
> PD014, Lecturer

In some cases, community members assumed full authorship:

> They were given the authorship to appropriate the design in a way that suited their needs best.
>
> PD005, Student

3.2.2. Barriers to participation

Despite collaborative aims, time pressure, unclear communication, and unfamiliar tools limited involvement:

> Sometimes the students engaged more, and the community were left out because of a lack of proper communication.
>
> PD007, Student

Visual tools helped bridge language gaps:

> Sketching helped the community understand the spatial concepts. . . and models were even better because it's universal.
>
> PD004, Student

3.2.3. Engagement tools and techniques

Sketching was consistently the most effective participation tool (Figure 8 depicts how sketching was implemented in the field as well as in the studio):

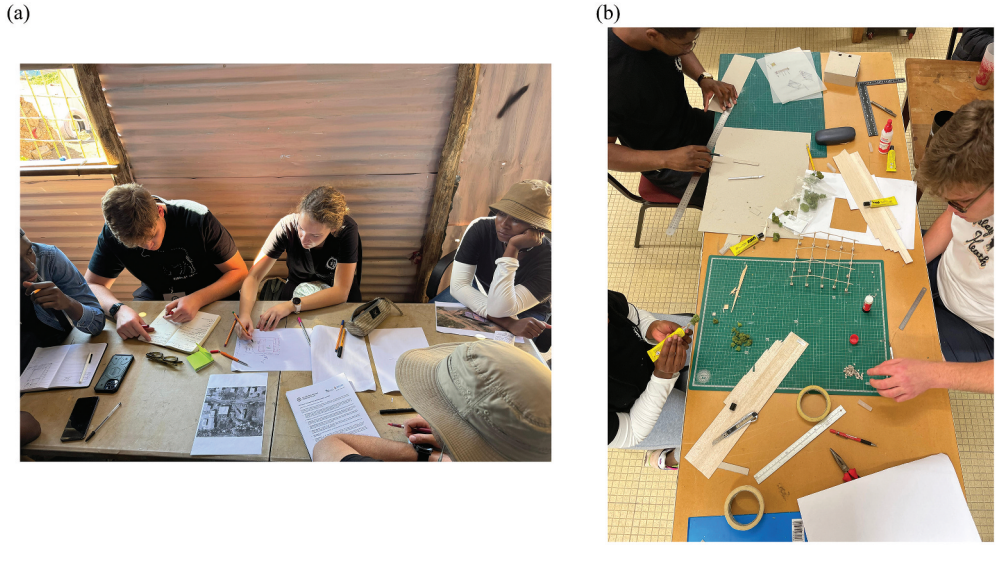
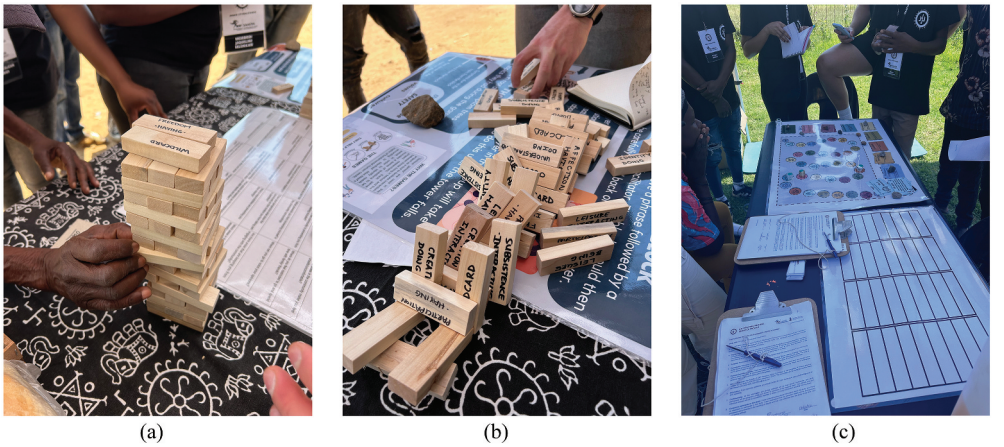


Figure 8. (a) Collaborative sketching in the informal settlement (b) Model building in the university studio.



(a) (b) (c)

Figure 9. Design games during 2024 research.

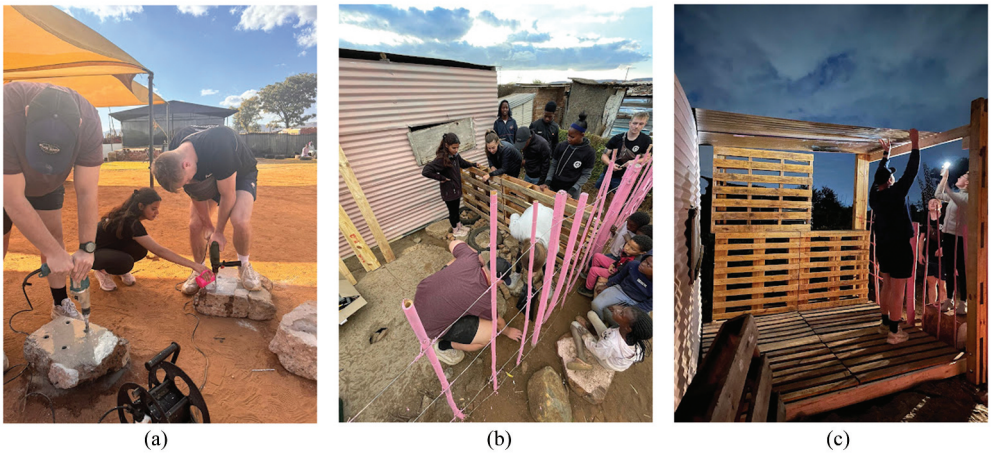
> Sketching fostered a sense of belonging and trust, which freed them to express their thoughts.
>
> PD008, Student

Design games built confidence and eased group dynamics (Figure 9 depicts the wide involvement games allowed in the field):

Those who couldn't talk ended up talking after playing a game . . . that's where they felt free.
P7, Community Field Researcher

Hands-on workshops and live prototyping supported learning by doing (Figure 10 depicts the interest generated through live prototyping):

> It allowed us to learn how to build together . . . troubleshoot any issues. It allows for CoDesign on a practical level.
>
> PD012, Student



(a) (b) (c)

Figure 10. Hands-on workshops and live build in the informal settlement.

Figure 11. Live-build projects in the informal settlement.

3.2.4. Long-term impact and ownership

Participation had emotional and practical impacts:

> It offers a unique opportunity to bridge theory and practice – but most importantly, it changes lives.
>
> PD008, Student

Ownership was strongest where continuity existed:

> The community took complete control . . . and adapted it to suit their needs.
>
> PD004, Student

They came to us while our community lost hope . . . now [those things] are still valuable to them.

P2, Community Field Researcher

In all the projects of the CoDesign studios, small-scale permanent structures were conceptualised as a result of the CoDesign process; however, not all proposed designs were constructed (Figure 11 depicts the structures built during the 2024 engagements, the structure to the left by students and community field researchers, the structure to the right by community field researchers).

The findings suggest that accessible methods and consistent engagement can cultivate agency, while short timelines and unclear roles remain key limitations.

4. Discussion

Following initial coding using *AtlasTI*™, four key themes emerged from the qualitative survey data: *Negotiated Authorship, Structural Barriers, Learning Through Making*, and *Emergent Ownership*. Among these, *Negotiated Authorship* emerged as the most dominant,

encompassing subthemes such as knowledge sharing, shifting responsibilities, and role fluidity. These findings suggest that engagement within the CoDesign Studios was not a neutral or linear process, but a dynamic negotiation of power, expertise, and identity.

4.1. Negotiated authorship

Figure 12 illustrates how authorship oscillated across different phases of the CoDesign process, reinforcing the finding that control and creative agency were not held consistently by any one group. Rather, authorship was a shared and shifting entity, an evolving practice shaped by contextual demands and interpersonal dynamics. This aligns with Bratteteig et al.'s (2013) argument that mutual learning is fundamental to democratic CoDesign and with P. R. Perold and Donaldson's (2018) framing of informal design as a continuous negotiation of roles and responsibilities.

Students described processes of reciprocal learning where conventional hierarchies were often disrupted. Community members, with deep contextual and technical knowledge, frequently introduced insights that students had not anticipated. This exchange enabled participants to blur the boundaries between expert and learner, professional and resident. Authorship was no longer defined by control, but by the co-creation of meaning, aligning with Robertson and Wagner's (2013) view of participatory design as an ongoing reflective dialogue rather than a rigid, predetermined process.

However, this fluidity also introduced friction. Some students, expecting to play facilitation roles, were surprised by the level of responsibility they had to assume. As lecturers stepped back to promote self-direction, students reported confusion and stress due to unclear leadership. While PD010 recounted effective collaboration in their group, others struggled with uneven expectations and imbalance. These findings echo DiSalvo et et al.'s (2013) observation that participation is shaped more by relational dynamics than formal roles. Although formal roles and responsibilities were defined early in the process by the

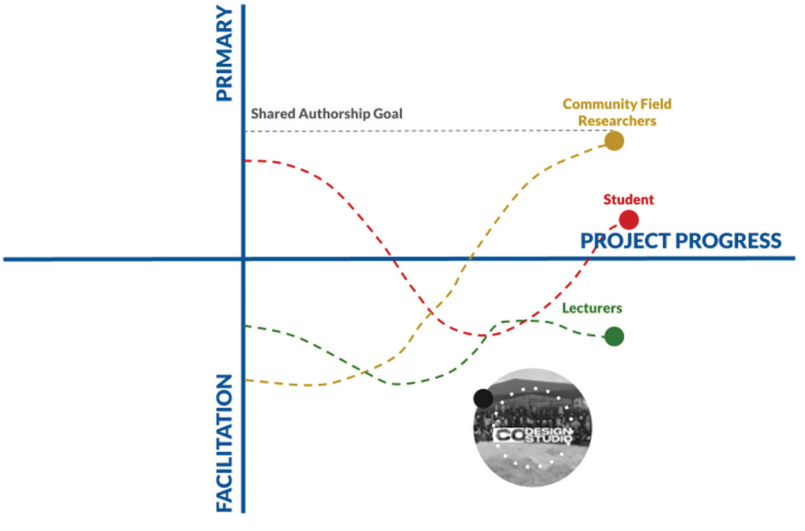


Figure 12. Oscillating authorship during participants' CoDesign process.

students, based on their interpretation of a broadly framed brief outlined by the lecturers, community field researchers and members acted fluidly across responsibilities. This misalignment between intended and enacted roles required students to adapt their participation, contributing to a more negotiated and dynamic distribution of authorship.

In some instances, unclear roles led to withdrawal. PD004 noted that stepping back to make space for community leadership sometimes left the team without technical scaffolding. Facilitation, without active support, failed to empower. Steen and Tuurnas (2018) caution that professionals often retain hidden control even while appearing to step back, especially in the absence of mechanisms for knowledge transfer or shared decision-making.

While students tended to self-identify as facilitators, community field researchers more often described themselves as designers or researchers. This suggests a shift in how authority was distributed. However, perceptions of influence were less equal. Participants felt heard, but decision-making power remained uneven, especially in early phases. PD014 (Lecturer) noted that authorship shifted depending on the project stage; students leading during design, community members taking over during construction. This fluid transition supports Awan et et al.'s (2011) notion of reflective practice as responsive and iterative.

Participants often highlighted processes, not products, as the most meaningful part of the experience. Knowledge exchange, collaborative model-making, and construction workshops were valued more than final physical outcomes.

Still, the limits of shared authorship were clear. Technical decisions often remained in the hands of students or professionals. While intended towards inclusivity, the process sometimes reinforced familiar hierarchies. The CoDesign Studio demonstrates that shared authorship must be actively structured, not merely hoped for. As Figure 12 shows, authorship in participatory settings is not fixed; it oscillates across roles and phases, shaped by how relationships, knowledge, and tools are shared over time.

4.2. Structural barriers

Despite its participatory framing, the CoDesign Studio revealed that structural and relational constraints can undermine inclusion. Institutional timelines, ambiguous expectations, and inconsistent communication all shaped participation in ways that favoured some and excluded others.

The most cited barrier was time. The studio's calendar was tied to university deadlines rather than community rhythms. PD012 (Lecturer) remarked that academic deliverables often took precedence over community learning, echoing Blomberg and Karasti's (2013) concern that institutional structures can silently override participatory goals. Addressing this constraint could include multi-year studio overlaps, the introduction of post-studio stewardship roles, or embedding design studios within longer-term research programmes. This tension mirrors critiques by Awan, Schneider, and Till (2011) and Ballinger and Silva (2021) that design studios too often prioritise product over process.

Inexperience with CoDesign and vague expectations added to the challenge. With no shared framework, participants entered with different assumptions. Students described feeling overburdened; community members felt involvement was more balanced. This mismatch underscores how inclusion is shaped as much by perception as by structure.

Emotional labour emerged as a less visible, yet equally significant, barrier. When responsibilities were unclear or uneven, participants, especially students, described anxiety and fatigue. Participation became both effective and procedural, requiring relational investment that was often invisible and undervalued. As DiSalvo, Clement, and Pipek (2013) argue, meaningful participation is always entangled with emotion and identity.

Figure 13 illustrates how these barriers shortened the potential for deeper engagement, cutting short the CoDesign curve and limiting community authorship. Without tools for reflection or feedback, participants sometimes questioned the value of their input. When there is no visible link between contribution and outcome, trust erodes.

Ultimately, these findings reveal that participatory design is only as inclusive as its scaffolding allows. Inclusive intention must be matched by an inclusive structure. Without defined roles, clear communication, and adaptive timelines, participation can quickly devolve into tokenism. The CoDesign Studio underscores the importance of designing not just the project, but the process itself, with intention, flexibility, and care.

4.3. Learning through making

The third theme reveals how embodied and visual engagement tools played a crucial role in enabling participation. Sketching, model-making, and live construction were consistently praised for bridging divides in language, experience, and expertise.

Sketching and model-making were most effective in early design phases, serving as visual languages that participants could understand without needing technical training. PD004 described how models offered clarity where words failed. As Brandt, Binder, and Sanders (2013) suggest, these tools act as boundary objects: shared references that allow stakeholders from different backgrounds to collaborate meaningfully. PD008 noted that sketching together created emotional safety and trust.

However, visual tools were underused in later stages. Their absence during construction suggests that initial co-creation was not consistently carried forward into

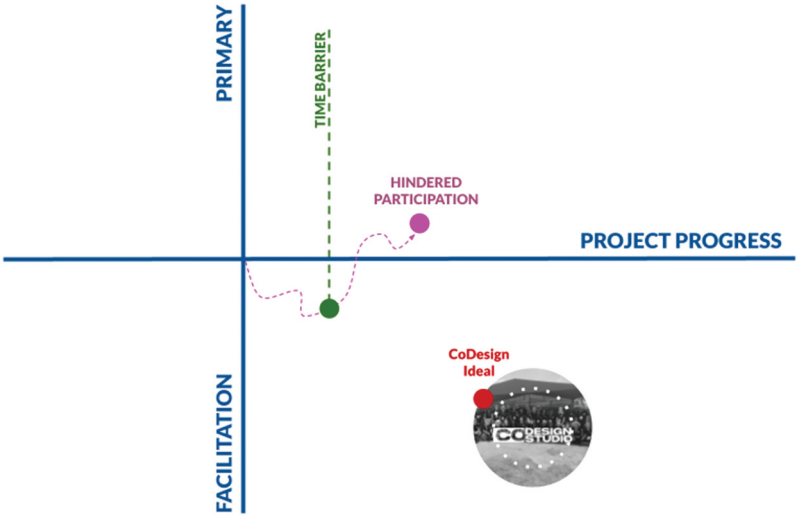


Figure 13. Effects of hindered participation.

implementation. This decline may have disrupted the continuity of participation and missed an opportunity to sustain inclusive momentum throughout.

Hands-on workshops were particularly powerful for co-production. Live prototyping allowed for real-time feedback and shared learning. As PD012 described, *it allowed us to troubleshoot issues and build together* a practical enactment of democratic design. This reflects Hamdi's (2010) emphasis on making as learning, and Brandt et al.'s (2013) claim that prototyping levels the playing field between designers and users.

One of the projects showed how continuity of involvement can enable genuine authorship. Community members completed construction independently after the students left, demonstrating lasting skill transfer. In contrast, where facilitation was inconsistent, technical control reverted to students, confirming Blomberg and Karasti's (2013) concern that design authority defaults to experts when support structures lapse.

Verbal tools, such as interviews and games, also enabled emotional expression and trust-building. However, these were not comfortable for all. PD011 noted that verbal participation could be intimidating. When combined with sketching, however, these methods became more inclusive. Participation was strongest when tools were adaptive, multimodal, and reflexively applied.

As shown in Figure 14, CoDesign tools shifted authorship along a spectrum, but unevenly. Their impact depended on context, timing, and facilitation. No tool guarantees equitable authorship. Their potential must be unlocked through continuity, responsiveness, and relational care.

4.4. Emergent ownership

The final theme reflects how participation translated into agency. As participants gained confidence, developed skills, and saw their contributions materialise, they began to take ownership, not just of outcomes, but of the process itself.

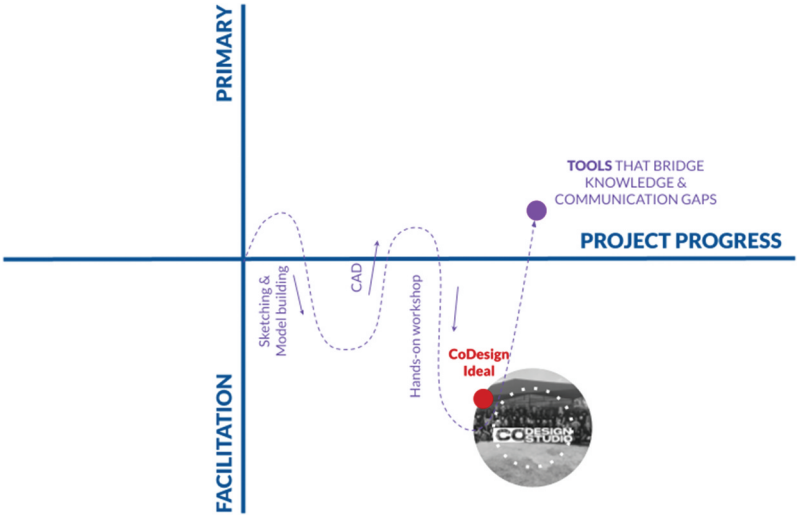


Figure 14. Students' authorship spectrum because of CoDesign tools.

Skill development was a major driver of this shift. Community researchers described gaining construction and facilitation skills. Students improved in collaboration and contextual design. These shared gains challenged assumptions about who holds design expertise. In some cases, students acknowledged that community members had more effective building techniques. This reinforces Shapiro's (2005) call to legitimise informal knowledge in professional practice.

As confidence grew, so did responsibility. In one project, the community independently completed and adapted the structure, a strong example of participatory authorship. As Vanleene and Verschuere (2018) note, people are more likely to maintain what they helped create. These trajectories of ownership are reflected in Figure 15, which shows community authorship increasing where long-term trust and inclusion were present.

Participation also produced effective outcomes. PD001 described how the process restored hope and demonstrated possibility. For others, it fostered a sense of belonging and mutual respect. This echoes Lefebvre's (1974) concept of the *social production of space*, where meaning is created through shared labour and negotiation (Ferdous and Bell 2021).

However, participants' empowerment was uneven. Some students described the process as emotionally taxing. When roles were unclear or responsibilities unbalanced, confidence faltered. Verschuere, Steen, and Brandsen (2018) caution that participation can inadvertently burden individuals when support is lacking.

The fragile nature of this empowerment was evident after the studio ended. In the absence of formal handovers or institutional continuity, some gains in agency risked being lost. Empowerment, as the literature suggests, is a trajectory, not a moment. It requires sustained facilitation and structural reinforcement. The CoDesign Studios planted seeds of ownership, but without long-term support, their growth remains precarious.

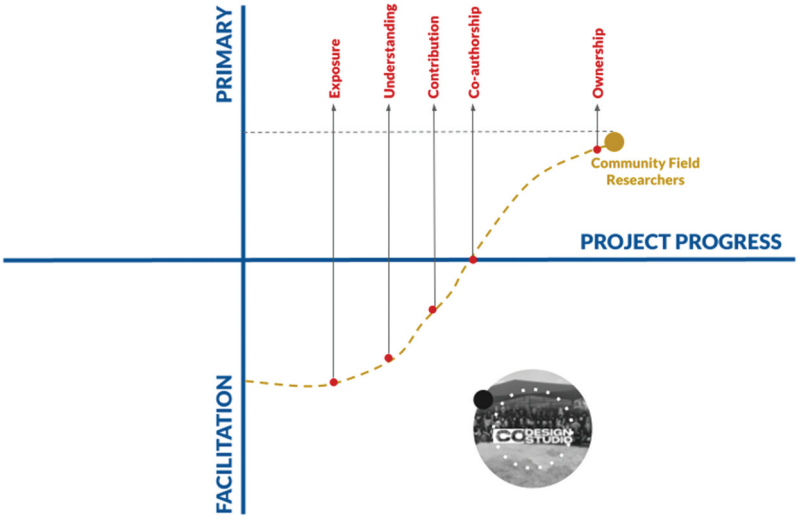


Figure 15. Community's authorship.

Together, these findings show that CoDesign can foster shared authorship, but only when it is deliberately supported. Skill-sharing, trust-building, and collaborative making are powerful mechanisms of inclusion. However, their success hinges on continuity, adaptive structures, and an ethical commitment to meaningfully shifting power over time.

5. Conclusion

This study investigated how engagement processes in the 2023–2024 university-led CoDesign studio were experienced in terms of mediated authorship. Drawing on survey responses from architecture students and community field researchers, the research found that authorship in participatory design is not a static role, nor can it be simply handed over. Instead, it is continually shaped by how people are invited into the process, how decisions are made, and how responsibilities are shared or withheld across time and context.

Participants described a fluid and sometimes uneven experience of authorship. While students often held early influence due to their familiarity with institutional expectations and technical tools, community field researchers assumed greater authorship during later stages, particularly when projects shifted into live construction. As illustrated in Figure 16, authorship was not fixed but oscillated across project phases, influenced by the nature of facilitation, role clarity, and the accessibility of engagement methods.

This research offers a more nuanced understanding of what it means to share authorship. It was not verbal recognition but moments of shared action, designing, building, and troubleshooting, that most strongly conveyed ownership. Where contributions became visible in the built environment, or where decisions were collaboratively made, authorship emerged as relational, earned, and co-held.

However, the findings also highlight how institutional constraints can limit the transformative potential of participatory design. Time-bound studio calendars,

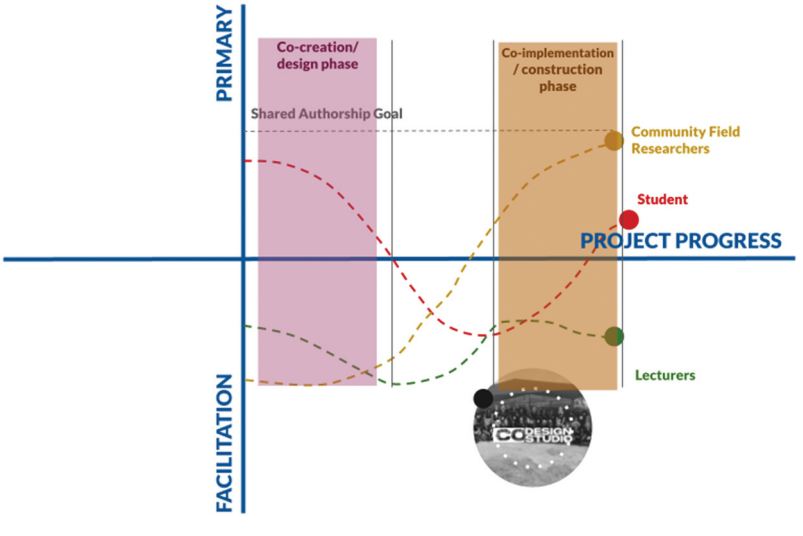


Figure 16. Authorship shifting over phases.

ambiguous roles, and resource limitations often created friction, leading to symbolic inclusion rather than sustained authorship. These challenges remind us that intention alone is not enough. Participatory processes must be underpinned by structures that support long-term involvement, acknowledge shifting power, and nurture local capacity.

The study contributes to ongoing debates in PID by shifting attention from product to process, from inclusion to authorship, and from involvement to stewardship. To move CoDesign beyond consultation, future projects must embed reflective tools, flexible roles, and inclusive methods throughout. Sketching, prototyping, storytelling, and mapping should not be isolated exercises, but integral modes of shared decision-making. Similarly, authorship must be reimagined as something negotiated over time, not granted at the outset.

Recommendations for future practice include planning for extended engagement, co-defining roles early, and revisiting them as relationships evolve, ensuring that skills development and leadership are built into every stage. Feedback mechanisms that surface power dynamics, rather than obscure them, can help guide more ethical facilitation. Crucially, project success should not be measured solely by what is built, but by the confidence gained, the relationships formed, and the capabilities left behind.

What this study ultimately reinforces is that mediated authorship is not a flaw in participatory design, but its most honest expression. It reflects the constant adjustment, negotiation, and shared labour that meaningful collaboration demands. In contexts of spatial inequality, where architecture intersects with informal realities, design is most powerful not when it is authored by one but when it is shaped by many.

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