Solidarity through difference: Speculative participatory serious urban gaming (SPS-UG)

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Abstract

This article discusses the methodology and results of the Maslow's Palace workshops project, which engages with current debates surrounding the democratisation of digital urban design technology and stakeholder decision making, through the implementation of a speculative oriented approach to serious gaming. The research explores how serious games might be used to help marginalised communities consider past, future and present community experiences, reconcile dissimilar assumptions, generate social capital building and design responses and prime participants for further long-term design engagement processes through a new approach called Speculative Participatory Serious Urban Gaming. Empirical material for this research was gathered from a range of case study workshops prepared with three landfill-based communities and external partners throughout 2017. Results show the approach helped participants develop shared norms, values and collective understandings of sensitive topics and develop ideas for future action through 'collective tinkering'.

Introduction

Participatory design is conventionally used as a strategy to engage those most marginalised in slum-upgrading processes.[1–4] However, a tension exists in the participatory design literature between participatory processes that seek to facilitate social outcomes, such as social capital building, and those that seek only to implement an urban development or upgrading project as the outcome.[5] *Social capital building* participatory design processes are those motivated by increasing 'shared norms, values and understandings'.[3,6] They aim to improve the conditions for those disempowered through building stakeholder understanding and cooperation, but can struggle to interface effectively with urban design processes – such as participatory

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slum-upgrading – that meet the diverse needs of communities.[5,7,8] In terms of urban design processes, social capital building exercises might include understanding the importance of an urban system or service, the mediating of personal and collective values surrounding an urban upgrading project or understanding or accepting disparate points of view as legitimate on key topics. While stakeholders might see significant increases in their social capital through such processes, the often-long duration and lack of focus on pragmatic design outcomes can mean that those increases are not easily transferable to urban design processes. Design projects implemented on the ground can subsequently be subject to the same patterns of social conflict, power disparities, and suppression that necessitated the social capital building process in the first place.[5] In addition, merely being included in a participatory design process does not always result in active design participation; rather, the literature indicates that increased social capital supported by shared norms, values, and understandings, is both a predictor and an precursor of civic engagement and design participation.[7]

The democratisation of design participation processes that consciously integrate both social capital building and design processes, and that encourage social discourse and design ideation, may help alleviate this tension and foster collaborative action. To explore this, the article discusses combining serious gaming with future-oriented speculative urban design through a new approach called *Speculative, Participatory, Serious Urban Gaming (SPS-UG). Urban-development* focussed serious games have been shown to foster participant collaboration, allowing players to experiment with difference ideas, perspectives, design alternatives, and solutions within a medium that has a low failure cost.[9] Future-oriented stakeholder discussions reveal their values and tacit needs through a speculative framing of current and future issues.[10–12] This article explores this theoretical framing through analysis of 14 participatory design workshops held with three landfill-based informal settlement communities in Delhi and Mumbai, India, as part of the Maslow's Palace project which utilised the SPS-UG approach. The approach explores ways in which serious digital games might be used to help marginalised communities consider past, present, and future community experiences, reconcile dissimilar assumptions, generate social outcomes and in-game design responses, while priming participants for further long-term slum-upgrading design engagement processes.

Serious urban gaming for social capital building

The use of *serious games* in participatory design activities in architecture and planning has received growing attention in recent years.[13–16] Serious games – or those designed for a specific purpose other than entertainment – have been shown to increase cooperation between participants, learning, engagement with participatory processes, facilitate ideation and provoke discourse around key issues.[17–19] They can have a direct impact on increasing civic engagement and decision making, giving disparate stakeholders, designers, and planners new avenues to converse, shape how opinions get organised, become informed, collaborate, and take action.[19,20] Like other examples of new media approaches, serious games also offer new ways to gather data that is difficult to gather – such as tacit knowledge of participants about context – allowing for more comprehensively informed and participatory decision-making processes. Foth et al.[21] found that parallel development in the use of new media, such as narrative-driven serious games can 'democratise' urban development by allowing stakeholders to collaboratively express tacit 'lived experience' through in-game interactions.

Serious games have been shown to enable participants to explore multiple perspectives, reveal values and refine group norms. Salen and Zimmerman,[22] in *Rules of Play: Game Design Fundamentals*, define *games* as 'a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome'. Through rule guided conflict, serious games can act as what Carl DiSalvo[23] calls 'spaces for agonism', which are platforms that enable diverse perspectives to be brought forward and debated by stakeholders. Drawing upon the agonistic political theory of Chantal Mouffe, DiSalvo argues that by revealing the

conditions of political issues and relations, this type of 'adversarial design' can identify new terms and themes for contestation and new trajectories for action – by purposefully provoking contestation of ideas between participants.[24,25] They can also, as[26] show, help to establish communication among diverse participants with different values.[26]

Facilitating design ideation

Serious games have been shown to be well-suited to communicating a shared understanding of design problems, because they allow participants 'to experiment with potential solutions in a safe setting and generate their own mental frames and responses to problems'.[27] This participatory experimentation can be described as 'collective speculative tinkering' and can help stakeholders collaboratively generate ideas.[28] Within the safe, restricted, and structured realm of multiplayer serious games, stakeholders can gain feedback from others on each experimental iteration, accumulating new knowledge from the game system and player interactions.[29] Another benefit of serious games is that they facilitate a playful and subversive environment, which is conducive to encouraging greater exploration of ideas between players.[22,30] Serious games not only have the ability to deliver messages, but also to simulate experiences.[31] Collaboratively simulating urban design ideas can be transformative, because participants can rehearse scenarios with a low cost of failure and then interpret game events' personal experiences.[32]

Positioning participatory urban speculation

Visioning, foresight, or speculative urban design exercises can reveal values and tacit and latent needs of stakeholders through discussion and experimentation that are conducive to building mutual understanding, networks, and relationships between participants.[33] This can help establish common ground for future collaboration. A number of useful examples of this exists in the literature. Pollastri et.al, for example, enabled participants to explore new sets of values through visualising a city designed to promote slow mobility. They created 'composite scenarios' – compositions of real elements into a fiction – within fictional boundaries.[34] Forlano and Mathew[11] argue that conceptual future-oriented space explored through the concept of 'design friction' is useful in understanding the ways in which stakeholder conflicts, tensions and disagreements can move complex socio-technical discussions forward. While Natalie Collie draws a parallel between Science Fiction and community engagement in urban design, so-called 'cities of the imagination' have been shown to provide a means of understanding, communicating and enriching the connections between stakeholders, place and communities and thus enriching 'social sustainability'.[10]

These projects notwithstanding, much of the criticism towards speculative design practice is related to the perceived elitist nature of speculative architecture and its perceived inability to include those central to the speculations. Forlano and Mathew argue that most unbuilt works of speculation do not move beyond 'the museum exhibit'.[11] This is what Tharp and Tharp referred to as a terminal form of speculative design; the design is the terminus of the designer's direct effort and control over an observer's or participant's reflection or interaction.[35] The serious gaming approach can help structure instrumental speculative design – where the game designer provides in-game 'prompts' to participants, and then they themselves construct the majority of the speculation through gameplay and interaction.[35]

The Maslow's Palace project explored using future orientated discussions within the gaming medium as a means of facilitating social capital building and ideation as a 'priming' participatory design activity. The intention of this future orientation was to loosen the pragmatic restrictions of the participants' everyday lived experiences in order to encourage creativity, discussion, and openness to new ideas that might be contentious or unfeasible. Drawing on futures theory, the authors utilised Voros's Foresight framework to provoke

Table 1. Speculative strategies for urban design serious gaming.

| Strategies	Work
Consider the design of the serious game's connection and position to temporality – from probable to impossible;	(30, 36, 37)
Present players with alternative presents, futures, systems or worlds to provoke values-based discourse;	(11, 34, 35, 37)
Facilitate stakeholder-oriented *instrumental* speculative design within the serious game;	(35)
Engage the players in contextual issues through in-game typological familiarity;	(38)
Engage communities in the process of connecting to, imagining and remembering place;	(10)
Raise questions instead of solve problems;	(23, 24)
Limit pragmatic contextual factors that might constrain the design process or discussion about the design or socio-political ideas;	(11)
Research, model and capture the complexities of experience across multiple stakeholder perspectives for analysis.	(10)

participant speculation though the design of the virtual environment within the Maslow's Palace.[36] The framework allows in-game representation of urban systems to be located on a continuum of likelihood – between probable, or what is most likely to become reality, and the impossible representing the design's hardest to perceive becoming reality in the future. Intentionally, speculative designs are usually positioned between the plausible and the possible in order to break outside the realm of reality and pragmatics. The plausibility of such fictions comes by achieving the right blend of typological familiarity from the present when scaffolding provocative diegetic visions.[30] Maslow's Palace adapted a number of strategies from the literature for the creation of a speculative-approach digital participatory design serious game to scaffold social capital building and urban design ideation discussions. They are detailed in Table 1 below.

Constructing SPS-UG

In order to synthesise the literature outlined above, we employed an approach which we call 'Speculative Serious Participatory Urban Gaming' or (SPS-UG), which is a design framework drawing together participatory design processes, speculative architecture, and serious gaming literature. The framework goes beyond the mere visualisation of design options, thinking about single speculations or aiding learning about collaborative design processes; rather, it aims to help participants reflect upon a plurality of possible futures that might help stakeholders explore perspectives and corresponding goals surrounding the upgrading of their communities.

The framework identifies six essential components that are critical to the design of successful games (Figure 1). The first is the *purpose* of the game. Serious games are purpose-based game systems so the purpose should have pivotal influence over all elements of the game design. The purpose of SPS-UGs in this investigation is to generate useful urban upgrading oriented social outcomes and related architectural design outcomes for the players, who are disparate stakeholders in marginalised communities. The aim of the game, or the goal the players are driven to reach within the gameplay, should directly reflect this purpose. The SPS-UG should also be clear as to its intentions in terms of the impact or outcomes, so there is no confusion about its objectives to the players. If this investigation's SPS-UG has no impact on the player in a real-life context, it misses its pivotal purpose. For this reason, the game's purpose acts as the driving force that shapes the dynamic and the coherence of the game system as a whole.

The *content and information* can be understood as being oriented towards opening up space for design ideation, which requires a degree of typological familiarity – the in-game representation of familiar spaces,
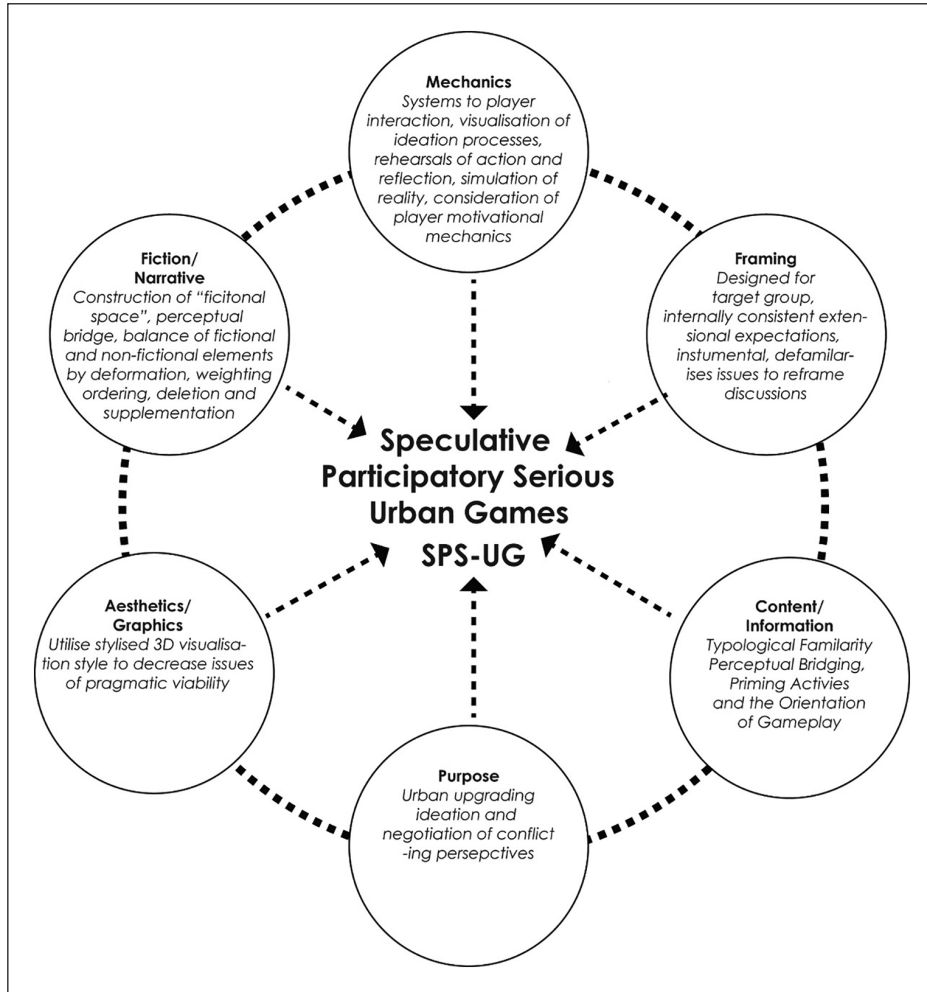
Figure 1. Synthesising the SPS-UG approach, contributing game elements.

buildings, artefacts or systems – in order to provoke design thinking and debate among players. In addition, content and information relating to the implications or consequences of decisions made in-game by the players is important – such as cost, spatial requirements, or the use of resources necessary for players to form ideas and future visions. The literature also suggests that pragmatic contextual factors – such as the exact location of an individual's home or a community space, or the exact cost of a design option – represented in-game might constrain the design processor the exchange of socio-political ideas by creating discursive impasses. SPS-UGs are intended to function as a 'priming' activity or a 'design orienting scenario' at the pre-design phase. It may be useful for gameplay to gradually introduce typologically familiar elements to help this priming.

The *framing* of the SPS-UGs includes ensuring the game is designed for the target group, their play literacy, and the broader topic of the game. The play literacy can especially influence the gameplay experience if the target audience has trouble using the controls, understanding the user interface, or recognising the

fictional game elements. These are important as they help ensure that legitimacy of the representations within the SPS-UG is maintained, by ensuring internally consistent extensional expectations.

Game mechanics are methods invoked by players and designed for interaction with the game state, thus providing gameplay.[39] The mechanics involve the establishment of the rules that define the possible space for operations in the game world.[40] In SPS-UGs in this this research, these align with two main objectives: provoking dialogue surrounding conflicting stakeholder perspectives and facilitating upgrading ideation. In SPS-UGs, in this research, these align with two main objectives: provoking dialogue within conflicting stakeholder perspectives and facilitating ideation about upgrades. The SPS-UG approach must also include mechanics that allow players to visualise and communicate their ideation processes to other players in real time for discussion and contestation. These should include allowing for cycles, or 'rehearsals', of action (gameplay) and reflection (discussion) in order to ground ideation and any configured values. While the content of the game holds the provided information and the 'mechanic' impacts the gameplay possibilities, the dimension of 'fiction and narrative' introduces fictional elements or the overall narrative arc to structure gameplay activities. The careful balance of 'fictional' and 'non-fictional' elements can open up 'fictional space' and allow players to navigate around pragmatic discursive impasses by utilising strategies such as composition and decomposition, weighting, ordering, deletion, supplementation and deformation.[41,42]

Finally, the *aesthetics/graphics* refers to the audio-visual language. The aesthetics and graphics define the overall formal aspects that frame the purpose, the content/information, the framing (target group), the mechanics (instructions, rewards) of the game, and the fiction/narrative (the world and characters of the game). SPS-UGs should utilise simplistic or stylised 3D representation in order to reduce issues regarding the pragmatic viability of in-game design decisions from the perspective of the participants.[43] Such styles can reduce the computational resources required to run the software.

The empirical study

The research may be understood within the notion of a qualitative Action Research methodology centred three case studies.[44–51] This is used to evaluate the approach through the development of an exemplar SPS-UG called 'Maslow's Palace' which is operationalised in participatory gaming workshops. Data were gathered from 14 participatory urban design workshops held in November 2017 with the Ghazipur, Bhalswa and Shanti Nagar informal settlement communities in Delhi and Mumbai, in collaboration with Chintan Environmental Research and Action Group and Apnalaya, respectively. Maslow's Palace is a multiplayer, turns-based digital participatory urban design game designed by the authors, and with the collaborative input of the communities, for the purposes of generating social discourse and urban design ideation.[14,52] The game is based on the above criteria to help build social capital and to construct slum-upgrading ideas among disparate stakeholders through gameplay and discussion. The game focuses on representing urban design problems in Shanti Nagar, Ghazipur, and Bhalswa, and revealing disparities of opinions within the communities, to help them move towards a common vision regarding their slum-upgrading challenges.

The main goal of the game is for players to collaboratively design speculative community upgrades through five levels of gameplay that ascend in representational realism. Players collaboratively respond to increased numbers of challenges, modules, and details of context as the game unfolds. Level 1 is designed to be situated at the less plausible end of the temporality spectrum, representing a significant departure from reality. This is designed to remove the pragmatic discursive impasses embedded in reality and foster collaboration between participants through an abstract task. Subsequent levels gradually introduce more familiar contextual elements. Level 5 includes a simple in-game economy and a range of identifiable site features, buildings, and spaces to which the participants respond. Through an inventory system, participants are provoked to address issues such as access to adequate housing stock, water and electricity infrastructure,

Figure 2. Maslow's Palace. Image by authors.

Table 2. Demographic information about participants.

	Ghazipur	Bhalswa	Shanti Nagar
Gender			
Male	–	1	9
Female	16	7	11
Age			
<20	1	–	16
20–29	11	2	4
30–39	2	4	–
40–49	1	2	–
Religion			
Muslim	15	8	19
Hindu	1	–	–
Years lived in community (year)			
0–5	1	1	–
6–10	1	3	1
11–15	4	1	7
16–20	2	1	10
>20	8	2	2

sanitation facilities, adequate roads and drainage, availability of public and community spaces, and health facilities and schools. Players are instructed via in-game prompts to construct a home for each player, as well as to design the surrounding area to incorporate necessary changes, wants and needs. Each level is completed when all players are satisfied with the chosen actions within a particular level by moving their character to a specific area of the map. Through this consensus mechanic, the game seeks to provoke discussion on differences in norms, values, and understandings of social and urban design issues, to better understand one another's point of view. Employing agonistic and adversarial design theory of Mouffe and DiSalvo, the game purposefully provokes contestation of ideas between participants and acts as a 'boundary object' between disparate participants to facilitate the development of mutual ground (Figure 2).[24,25,53]

Participants were recruited by Chintan and Apnalaya's local community-based staff 2 weeks in advance of the workshops (Table 2). Most of the participants were Muslim migrants to the communities from Kolkata with the remainder arriving from other areas of Delhi or nearby Uttar Pradesh or Mumbai. All participants engaged in the formal or informal recycling sector in some capacity and resided within the informal housing cluster adjacent to the landfill within each community. The 44 participants were aged between 19 and

40 years with a mean age of 26.75 years. Staff from the partner organisation were trained to facilitate the workshops.

The gathered data – pre-test-post-test interviews, video recordings, photographs, game screen capture and focus group discussions – was analysed using thematic analysis detailed by Braun and Clarke,[54] which has been used by many participatory design researchers [55–58] to identify themes or patterns in the data when exploring new participatory design methods. Once data have been collected and transcribed where appropriate, thematic analysis was used to identify, analyse and report patterns (themes) within the data using inductive coding procedures.

Results

Analysis of the process of the workshops revealed themes that highlighted how the serious gaming approach within *Maslow's Palace* helped build *social capital* by increasing shared norms, values and understandings by helping participants to explore a range of issues and each other's positions and to increase understanding around some of those issues. The approach also allowed for a number of slum-upgrading ideas to manifest. From the workshops, a number of tends were identified.

Trend one: slum-upgrading ideation

All workshop groups explored urban issues, created a diverse range of in-game spatial responses, discussed the political and economic considerations, and social implications of each – indicating that the game is conducive to provoking a range of urban discourses. Participants across the workshop groups and communities actively debated the importance of housing in close proximity to landfills, the problems associated with issues of security of tenure, the role of Waste-to-Energy plants, and the importance of locating public space and amenities centrally within communities. For example, Ghazipur workshop group 4 debated the role of the Waste-to-Energy plant within the community when constructing their living areas within Maslow's Palace. It was argued that while it provides a means of livelihood, it causes social tensions as only women are employed due to drug and alcohol issues within the community, and it also endangers livelihood generating opportunities for others due to decreased access to solid waste streams for informal recycling. The participants suggested out-of-game action in the form of lobbying local politicians for help in gaining alternative modes of employment as well as access to childcare to reduce strain on working mothers. Chintan, the facilitating organisation, stated they could help with this process. Here participants exhibited collective planning for future actions outside of the workshop. In another example, one of the most prominent slum-upgrading outcomes of the Shanti Nagar workshops was in relationship to environmental concerns related to waste. Workshop groups 3, 4 and 5 discussed the prominence of waste in and around living areas. Participants discussed several strategies for dealing with this problem. Participants in group 3 explored the reduction of housing density and the construction of a recycling centre in their community to alleviate the disposal of waste around housing areas (Figure 3).

Trend two: exploring conflict, values and misunderstandings

When conflict arose between participants – generally around more complex socio-political issues such as livelihood generation and security, or the placement of toilets within the community in relationship to gender or lesbian, gay, bisexual, queer/questioning, transgender/transsexual, intersex, and ally/asexual (LGBQTIA+) rights – peripheral issues or other facets of the issue were voiced and explored, allowing for players to gain a better understanding of each other's perspectives through discussion and develop shared values and norms. For example, debate within the Shanti Nagar workshops centred on the positioning of toilets within the
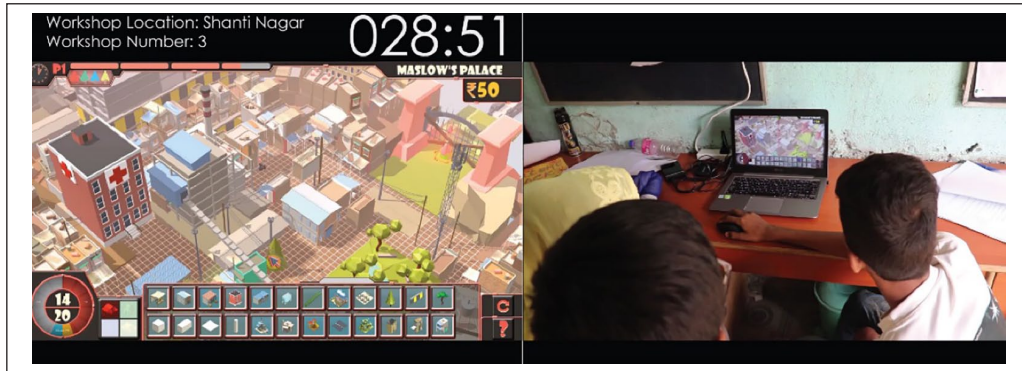
Figure 3. Phase 3 research procedure. Shanti Nagar, group 3. Image by author.

Figure 4. Maslow's Palace outcome, workshop group 3. Shanti Nagar. Image by author.

game. After some discussion with the rest of the group, participant 4, a single male, proposed building a toilet close to the homes of other players for convenience of access as 'it will be simpler for each person to reach the toilet' (participant 4, group 3). However, this positioning was rejected by the two female participants within the group. Participant 2 stated, 'we should put it in the back of the area because it won't look nice near the houses' (participant 2, group 3). After some probing by the two male players, it was discussed that the underlying reason for wanting the toilet further away was due to the stigma surrounding menstruation. Participants discussed why the stigma exists. One of the male participants, who identified as homosexual, raised the issue of the prevalence of violence against the LGBTQIA+ community around public toilets. He offered that 'toilets should have good views and cameras to catch violence' (participant 3, group 3). All players then agreed to design a park that had good visibility and public toilets as a central component of the composition (Figure 4).

The recursive nature of the digital game allowed for players to reflect on their past actions and the actions of others, enabling further exploration of conflict and cooperation. For example, an interesting point of tension arose between players from Ghazipur workshop groups 3 and 4 regarding the usage of in-game financial resources, when one player used all of the available in-game funds for themselves. The players were then

able to discuss the outcomes, and play again, while learning to cooperate with one another. During the focus group, they talked about the implications of not discussing the consequences of the moves they make with the other participants.

During focus group discussions, players of the Ghazipur and Bhalswa workshops reported that the informal nature of the game made them feel comfortable raising and discussing sensitive topics with strangers, and that they now understood other issues within their community that they had not considered before. Participant 3 said during the focus group that it was 'important for the players to talk about and share opinions; otherwise nobody knows why you need something' (participant 3, group 3). This aspect became a design consideration for participants, where the real-world implications of their design decisions were considered within the context of the game. This added discursive considerations to the organisational problems faced by participants in-game and facilitated more complex discussion.

One of the main strengths of the methods adopted in this research is that by not being overly fixated on producing a 'design outcome' as part of the participatory workshop, participants' tacit and latent feelings and values are incorporated into discussion due to the informal nature of the gameplay. The SSP-UG approach can function as a tool for capturing and understanding not only explicitly articulated information from participants, but also forms of tacit or experiential knowledge expressed by participants organically throughout the course of the workshop process.[34,59] The 'temporary world' created by the digital SSP-UG environment within each workshop allowed the processes and artefacts to be less likely to appear to be 'owned' by one player at the expense of others, and thus allow players to feel comfortable revealing their knowledge, values, and goals. The temporary worlds allowed the creation of distance from the real world by introducing fictional 'make well-known situations appear as something new' to the participants; this approach can allow participants to suspend assumptions.[60]

'Defamiliarization' or making the design situation or context 'strange', was effectively achieved by combining speculative design strategies within a serious gaming framing. The novel speculative game elements, as well as providing a digital environment conducive to recursive participant action permitting experimentation enhanced collaborative space for critical reflection and opened up new possibilities for slum-upgrading agency among participants. Grounding of the in-game design responses was achieved through a process of 'bricolage' – the construction of concepts that are combinations of various participant ideas and real-world experiences into a scenario that they collectively believe will work. This was achieved as a negotiation between 'blue-sky conceptualising and pragmatic issues of development and implementation' within cycles of 'doing and reflecting' or 'joint reflection-in-action'.[28,61–64] Specifically, the knowledge values and goals of participants were grounded in the users' experiences through creative artefacts produced by the participants during each workshop through 'collective tinkering'[65,66] with 'matters of concern'.[24,67]

The nature of the data recording – specifically the screen capture software – allowed for data to be captured somewhat covertly to avoid affecting participant's actions. The nature of this data collection, combined with its strength of revealing tacit and latent knowledge through gameplay, was instrumental in creating an environment conducive to participants raising and discussing sensitive or controversial ideas, developing preliminary planning proposals and more clearly defining urban problems to interface with future design processes. One of the main strengths of the approach is that it functions as a participatory design 'icebreaker', but in a way that doesn't have any immediate implications. Participants reported being happy expressing their opinions because they felt they weren't going to offend anyone while playing a game. The Action Research approach allowed the researcher to establish partnerships for conducting action and research simultaneously, with the goal to improve an aspect of reality,[68] empower the subjects of enquiry and foster social change.[69] Following this approach, Maslow's Palace and the SSP-UG framework (and its implementation in Ghazipur, Bhalswa, and Shanti Nagar) became unique opportunities to evaluate the factors that contribute to community engagement with digital approaches to slum-upgrading participation.

The participants experiences within the SPS-UG and Maslow's Palace become a reference point for future participatory discussions by creating 'relations of solidarity through the recognition of difference'[5]

through a discussion of a portfolio of options. These experiences documented through video recordings of the SPS-UG process can also useful in future Participatory Design processes – showing participants what ideas they had previously and what tensions or synergetic ideas exist.

Unsurprisingly, higher levels of digital literacy allowed players to progress to experimentation within the game more quickly, which opened up new avenues for discussion in earlier game levels. Increased digital literacy also increased 'collective tinkering' with fictitious and realistic spatial systems, which resulted in better conflict resolution and more in-depth conversations. In addition, while SPS-UG process is a digital modelling tool in some respects, the workshops revealed that it is important to manage participant expectations regarding the viability of workshop outcomes developed within the game as not all are implementable.

Conclusion

Maslow's Palace was effective in creating 'spaces-to-think-with' – allowing participants to discuss many social and design issues, develop understanding around sensitive social topics, and resolve conflicts through iterative ideation and discussion. The approach was instrumental in creating an environment conducive to participants raising and discussing sensitive or controversial ideas, developing preliminary planning proposals, and more clearly defining urban problems which might help them interface with future design processes. The workshop also compared favourably with other participatory planning methods in terms of cost, time, and benefits such as enjoyment, creativity, and engagement. One of the main benefits of the gaming process was the rapidness of the workshops when considering the number of ideas explored by participants in a short time period.

Dindler and Iversen argue that the trouble with practising participatory design as the art of solving immediately identifiable problems is that the designers risk coming up with great solutions for erroneous problems.[70] The speculative serious gaming technique in Maslow's Palace acted as a problem setting process, which simultaneously strives to develop as well as address what Schön refers to as the design and social capital building 'problem'.[71] The process of participants building hybrid-state urban environments within the game was akin to conceptual design processes and helped to democratise the creation of ideas and planning of future actions. The workshop process also acted as a catalyst for cooperative action through the recognition of difference. The strength of the approach is therefore to provoke discussion surrounding what Holt et al.[72] term 'the imaginative leap beyond what already exists'.

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