Neighborhood Making of Story Games: Accessible Joy in Low-Tech Design

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ABSTRACT

Neighborhood games to benefit the community are becoming more accessible and low-cost to build. Different approaches to design are necessary at the local level, including for authentic "locally made" games that connect residents to place, community, and local history. This paper is based on three years of co-design with more than 50 separate town and neighborhood partners. For accessibility, the technical approach included multimedia messaging and voice (MMS, SMS, branching voice trees). Each successful co-design partner sought to "engage beyond their walls" with cultural assets like murals and historic sculptures. For minimally-resourced partners, design models and patterns are especially needed. This study shows how game design often needs to be reframed for first-time designers, can be scaled through public libraries with minimal budgets, and can still retain the joy in making real games for local impact. The findings contribute to the study of democratizing game design for more neighborhoods and stronger places.

Keywords

Participatory Design, Mobile Games, Location-Based Play, Socio-technical Design, Socioeconomic, Community, and Serious Games

INTRODUCTION

Neighborhood games for public benefit are becoming more accessible and low-cost to build. With basic communication technology and playful storytelling, it is increasingly possible to make games that highlight local history, amplify the voices of real residents, and introduce players to new businesses and neighbors alike (Malegiannaki and Daradoumis 2017; Stokes 2020). But accessibility is very hard. Our central concern is thus: how can the design process be made more accessible? Research is especially needed in settings with minimal resources, including the large number of neighborhood organizations like libraries. At such sites, accessibility in game design may rely on finding pleasure in the design process, shifting the frame for what counts as "game design" itself, and centering the particular impacts

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associated with locally-made goods. We argue that all of this depends on a more intersectional understanding of the pleasure of play, especially if we want all neighborhoods to be able to tell their own stories playfully.

Basic mobile messaging remains surprisingly useful for outdoor game design – including multimedia messaging, branching voice systems, and print-based QR codes. Some common "low-tech" genres for physical space include scavenger hunts, interactive tours, geocaching, and outdoor escape rooms. The authoring tools for interactive experiences with mobile media are becoming more accessible, including to support participants with no training in computer science through visual interfaces. Rather than a static technology space, new innovations continue to emerge for telephony, such as triggering connected lights and participation in so-called smart cities. But accessible technology must match the kind of impact.

Prior research has established a wide range of potential effects for local games, including to shift local purchasing as part of regional economics (Murphy 2011), to amplify the voices of marginalized groups (Massanari 2015), to gather local data for city decisions in Mexico City (Sandoval-Almazan et al. 2017), and to build social ties between neighbors (Stokes 2020). Yet very few neighborhoods appear to have made digital games tied to their own streets.

Increasing access to the opportunities of game design is our goal. To be widespread, design must be understood by local organizations, including in rural areas, so they can participate in meaningful ways. The accessibility of design as a process is quite different from the usual focus on expanding the teaching of computer science, technical skills, and the accessibility of any one great game.

The most promising anchors to democratize game design may be the neighborhood library. Already, public libraries are at a massive scale for resident engagement and civic information. Libraries are increasingly crucial sites for social service delivery, board games, and placemaking. Yet they may also have their own barriers to what makes game design legitimate, especially for ordinary residents in their communities. This paper takes a bottom-up perspective to understand the possibilities of expanding participation in place-based game design.

CONTEXT AND LITERATURE REVIEW

Local cultural assets with place-based games

One of the most visible movements for stronger places is known as *creative placemaking* (Markusen and Gadwa 2010; Zitcer 2020); this includes events that activate the place and build a shared identity, beyond vibrant businesses and visual appeal. When placemaking seeks to retain local culture and marginalized voices (resisting gentrification), it is sometimes called place*keeping* (Schwartzman 2017; Bedoya 2014).

The outcomes of local play include strengthening places, from our attachment to place to the identity of a place and its human networks. Many social outcomes are tied to geography and the zip code where a person is born, from life expectancy to income and health. These outcomes are often called "neighborhood effects" (Sampson 2012), and addressing them can depend on making the place stronger – rather than "fixing" the people.

For game studies, outcomes tied to place have often been overshadowed and treated synonymously with location-based games. However, the ability to detect GPS location in longitude and latitude can be secondary to the cultural sense of place – which can center on landmarks, the cultural feel of a place, our attachment to the local community and its networks. Place-based games can help us connect to local cultural assets, history, and narratives about the identity of a place. The simplest way for game design to be place-specific is in terms of content, especially content that is at the heart of a neighborhood's identity – from images of contested monuments to the audio of real resident voices.

Placemaking with games has focused on universities (Harwood et al. 2024), urban environments and arts with a playful approach (Innocent 2016), and some low-tech tools like mobile messaging (Stokes et al. 2018). Yet there is little research on how we can significantly expand the conditions of design to include more ordinary residents and neighborhood institutions.

This paper therefore investigates how neighborhood organizations like local libraries approach game design, the kinds of impact they pursue, and the joys they find in the process despite very minimal resources.

Participation in Game Design – Conceptual Framework

Research on game design with communities is expanding to underrepresented communities (Mark et al. 2011), and to address social exclusion in game design (McArthur 2014), alongside broader reflections on values like accessibility in the process of game design (Flanagan and Nissenbaum 2014). This paper argues for game design as part of community-based PD or *participatory design* (DiSalvo et al. 2013). PD is concerned with sharing power in the design process, and treating participation in design as an ethical and epistemic stance. Compared to prior research on PD in game design, this study emphasizes all ages (rather than focus on youth), new creations (rather than modding existing games), and local culture (not just online and gamer cultures).

As the tools for game production become more accessible, equity shifts from technology access to *participation gaps* (Jenkins et al. 2009). Increasingly, the social conditions for participatory design may be more important than technical training. Earlier work on 'modding' games for community participation is just beginning to be applied to modding communities in cultural heritage (Majewski et al. 2023).

Analog game design in cities has been applied to systems like participatory budgeting (Lerner 2014), the emancipatory approaches of popular education (Boal 2002) and the artistic modes that Mary Flanagan has described as *critical play* (2009). Localized game jams have been explored as one way to localize design (Shin et al. 2012), but they are rarely for those who do not identify as gamers or amateur game designers. Most work in participatory game design for neighborhoods is focused on youth and app-based experiences that are "location-based" (e.g., Mark et al. 2011).

Libraries are an especially important site for neighborhood game design. There are more than 320,000 public libraries worldwide, according to the IFLA (the International Federation of Library Associations and Institutions).[1] Within the US, where this study is focused, there are over 17,000 public libraries serving

[1] See https://sdgs.un.org/partnerships/contribution-libraries-sdgs

communities with a continually evolving role in public life according to the federal Institute of Museum and Library Services in 2022. According to Gallup, visiting a library is America's most common cultural activity "by far" (McCarthy 2020). Libraries are already hubs for game media, including board game collections and more than 20 years of videogame nights (Neiburger 2007). Libraries have long served as important third places and for play (Leorke and Wyatt 2022), and that movement is expanding, including through movements for smart and playable cities (Nijholt 2020).

Libraries are engines of cultural production, and media-making programs and tools are a significant draw for public libraries (Mattern 2025). The future of libraries is evolving with play, and they are transforming as institutions. The notion of libraries using games to reach new patrons dates at least back to 1975 and even to the 1800s (Nicholson 2013). Today, libraries are increasingly using play for their policy agendas around their municipal economic and cultural development (Leorke and Wyatt 2022). But different technologies might make sense for libraries, where the emphasis is on near-universal access; for mobile media, technologies like SMS and MMS (short messaging for typical texting, or multi-media messaging for sending images, etc.) are of particular interest. Such technologies can increasingly be part of "technologically sustained" play and pervasive games (Waern 2009).

STUDY PURPOSE AND QUESTIONS

For access to game design at the neighborhood level, research is needed on low-tech approaches to design and whether new theory is needed to explain it. Three connected needs are identified below. Addressing them together is necessary for generalizable findings, first to other public libraries, and then to other neighborhood groups working with mobile messaging.

Need #1: Game forms with mobile messaging

The public imagination of outdoor play with mobile media is expanding, but few are popular enough to be known by the public. Aside from the iconic *Pokémon GO* (Niantic, Inc. 2016), few outdoor games with interactivity have achieved widespread visibility. Analog scavenger hunts are popular, but their use of mobile media is frequently limited to the mobile web and fixed resources, without interactivity. Scavenger hunts are popular (including geocaching phenomena, with more than 300,000 cache owners worldwide[2]), but most hunts remain primarily analog with the exception of clues on mobile websites (informational) and determining exact longitude and latitude (geolocation) – but the interactivity is growing.

Street art is also increasingly complemented with mobile interactivity, often via QR codes placed nearby or through the instructions of local organizations. Research has shown street art to increasingly be part of "digital placemaking," and often involves social media like Instagram for mobile devices (Polson 2025); the audience is asked to share and photograph, and sometimes to view augmented reality visuals, but the game and narrative content is rarely interactive.

For new designers, it can be hard to know where to start. A list of game types and templates makes it much easier for libraries to imagine the possibilities. Game forms

[2] According to the Geocaching.com community hub, accessed November 26, 2025, see: https://newsroom.geocaching.com/fast-facts

or templates provide important scaffolding with implicit design principles for an associated set of mobile affordances and game mechanics. The idea behind such principles is to articulate simple rules-of-thumb to guide future design (Sas et al. 2014), including for games (e.g., Schaffer 2008). This study seeks to identify several design principles with a focus on placemaking/cultural assets and will validity-test them with the community partners. We investigate:

RQ 1: What **forms of low-tech games** emerged as viable models for the placemaking goals of neighborhood institutions?

Need #2: Gratifications to sustain game design

Local play is distinct for how it can align the pleasures of making and playing, including the pride of playing locally-made games. When the goals are to build a sense of neighborhood connection and identity, it matters who made the game and whose voices are included. For scholars of participatory game design, the goal of resisting gentrification may depend on identifying joy that is accessible to existing residents and neighborhood organizations like libraries – not just game enthusiasts.

One way to study joy is through the study of the uses and gratifications of design tools and processes. In game design, uses and gratifications theory (Ruggiero 2000) has more often been applied to understanding how *players* perceive game platforms, such as with *Pokémon GO* (Ghazali et al. 2019). However, the bottom-up perspective can also be used to understand how makers perceive the process of creating their own games, including to understand supposedly accessible authoring tools that require no coding skills (e.g., block coding tools like Scratch, narrative game tools like Twine, and more point-and-click tools like GameMaker and Construct). This paper draws on Uses and Gratifications theory to study low-tech authoring tools as part of participatory design, asking:

RQ 2: For neighborhood librarians, what are the gratifications of low-tech game design and what **intersectional pleasures help them sustain participation in design**?

Need #3: Frames for Game Design

To frame participation, the very term "game design" is contested – with high stakes that include shaping who is seen as a legitimate game designer. Few librarians identify as game designers. Given the many definitions of games (Stenros 2016), and the goals of neighborhood librarians to engage beyond their walls, we ask:

RQ 3: How might game design be reframed to be more accessible to the identities and skills of neighborhood librarians, and other neighborhood organizers who are not expert in games or design?

APPROACH

Method

The methods include textual analysis of interview transcripts, focus groups informed by Most Significant Change (Davies and Dart 2005) for bottom-up analysis, and participant observation. In the tradition of action research (Bilandzic and Venable 2011), the findings – including several design principles – were validity tested with the study participants, and provide preliminary identification of common barriers to participation in game design alongside communication frames that can help to scaffold game design as a group communication process.

Case Study: 50 Towns

This study considers a significant number of sites making games in order to "Engage Beyond Our Walls" (EBOW), all led by public library staff. Over three years, the authors specifically trained local libraries in more than 50 towns and cities to design their own games and interactive stories. The budget for each of the games was remarkably low: under $300 USD.

A snapshot of the geographic distribution of projects with their own recruiting posters is shown in Figure 1. The project reached national scale in three phases. In the first year (2022), five "exemplar libraries" in the Mid-Atlantic region of the United States (including rural and small libraries) were trained to create games or host workshops in their own libraries. Our second year pivoted to Zoom training (2022-23), and the third was entirely asynchronous (2023-24). Each brought in an additional 10-20 libraries in new cities/towns/tribal regions.

Figure 1: Map of completed library creations (2022-2024)

To illustrate the range, some of the projects included: texting with the ghost of a real train caboose parked outside the library; a bike tour of library branches and their history with trivia at each location; a downtown storywalk on architectural shapes;

an augmented voice tour of a history exhibit on Black feminism in the region; a main street historical scavenger hunt; a historical texting tour of the town; and plenty more.

Three design principles anchor the project: (1) Low-tech for patron accessibility. Patrons can access the games with ordinary phones. (2) Do it ourselves. The projects were made by ordinary librarians, using a curriculum designed by game design faculty at a university. (3) Amplify community assets. All participating libraries sought to strengthen the connection to place-based sculptures, murals and cultural history.

We focused on low-tech approaches like voice trees—commonly used by automated phone services that ask callers to press numbers for different services—and SMS messaging because they are more accessible and cost less than smartphone applications that require data plans. Most mobile phones can use text messaging to let people access interactive storytelling (including with picture messages and audio clips) with no apps required.

The authoring tool was held constant as a control, and to increase the ease of providing accounts and support to a wide number of towns. Specifically, the game engine in this case study ("Hive Mechanic") emphasizes low-tech communication. Hive Mechanic is a free, open-source engine that focuses on SMS-based /app-free mobile games and stories. The game engine allows for coordinating teams of players by SMS, voice trees through regular phones, and more advanced integration with city data flows (e.g., bus arrival times). Alternative low-tech solutions for libraries include tools like Twilio's *Studio* to create branching text and audio experiences, but such systems are typically for more technically advanced users.

The interface for Hive Mechanic uses a "fill in the blank" approach (see Figure 2) that requires no programming. Users see previews of the photographs the system will send, and can create branching narratives using the card-based interface.

Figure 2: Annotated screenshot of the interface for Hive Mechanic to demonstrate sending a welcome message and multimedia message of a sculpture.

Until recently, few libraries have the capacity to engage with mobile game design for community use, especially with low-cost tools. The authoring interface uses visual cards to show actions – like sending a historic photograph as a text response to a secret keyword. It is free and open source software that builds on the legacy of tools like ARIS (Holden et al. 2014).

ANALYSIS / FINDINGS / RESULTS

We conducted site visits to ten locations. Detailed interviews were conducted for about half the libraries that made significant progress toward completing a project (12 in-depth interviews); plus more basic exit interviews for another 10+ participants. We also analyzed usage data on the authoring servers, and regularly asked participants to send us their news clippings, social media screenshots, and reflections.

The findings below reflect three years of co-design with more than 50 different local libraries. More than 20 partners launched their projects publicly. Each year yielded considerable data in field notes, which was coded for our research questions along with the interview transcripts and our participant observations in the design process. The models below were tested iteratively with participants, and refined each year.

Obstacles emerged immediately. Many libraries struggled to even begin the training. Approximately a quarter of accepted applicants (22) never began the program. We trace this over-optimism to finding even the basic time to begin - let alone finish something. Our interviews repeatedly document the limits faced by librarians, including that most have a full-time job handling a desk. Some we discovered were signed up by their boss, and lacked the motivation to dive into something new.

1. Typology of Placemaking Games for Mobile Messaging

The first research question concerned the game types that emerged for libraries with mobile messaging. All participants focused on neighborhood cultural assets, from sculptures and buildings to local myths tied to the community identity. From the pool of more than 50 towns across the US that were accepted into the project, 26 made a significant project, and 17 of those completed playtesting.

Each game had its own phone number. More than 38,000 SMS messages were sent to players over the three years, according to server logs. Successful creations were analyzed for alignment with established placemaking practices, including through detailed walkthroughs with participating libraries who described what they had made and its significance. The resulting three core types are identified in Table 1.

All three of the major game types featured a 'protagonist' who responded to the player's texts and calls. The protagonist as a respondent brought voice and character to the experience. The range of protagonists include neighborhood ghosts, murals that talk back, neighborhood legends, and quirky tour guides. The protagonist emerged as highly valuable for librarians in making the experiences more playful (see the following section).

Placemaking model	Protagonist to playfully drive the story	Core mechanic that is typical, and the playful space it opens
1. **Bringing to life an outdoor cultural asset**	**Sculpture or mural comes to life as the protagonist** (ANTHROPOMORPHIZED OBJECT), especially to help imagine the surrounding place	**Choosing your own adventure**; cognitive playground to joyfully appropriate space (fictionalizing space; role-play)
2. **Connecting places** and the relationship between them	GUIDE: **Playful tour guide** gives you a multi-site quest or hunt and talks you through it	**Crossing town together**; the joy of movement and discovery on a place-based quest or hunt.
3. **Deepening a singular connection** with a specific cultural asset	HOST: **Fictional host** asks what you notice and invites you to look more closely	**Looking closer together**; joyful noticing

Table 1: Applied Typology for Placemaking Games with Mobile Messaging

The first placemaking model is ***bringing to life an outdoor cultural asset,*** such as a sculpture or mural. To illustrate, consider the "Three Birds" project, created by the Milton Public Library. Players begin at an outdoor sculpture, which has a sign to "chat with the birds" (Figure 3). After scanning a QR code, the participant receives a text message to begin the branching story, and can pick which of the three birds they wish to begin speaking with. The story quickly goes beyond the sculpture to tell about the surrounding place. This small-town library in the US state of Wisconsin serves approximately 11,000 people, and created the experience to activate an outdoor "story garden" that is just outside the library.

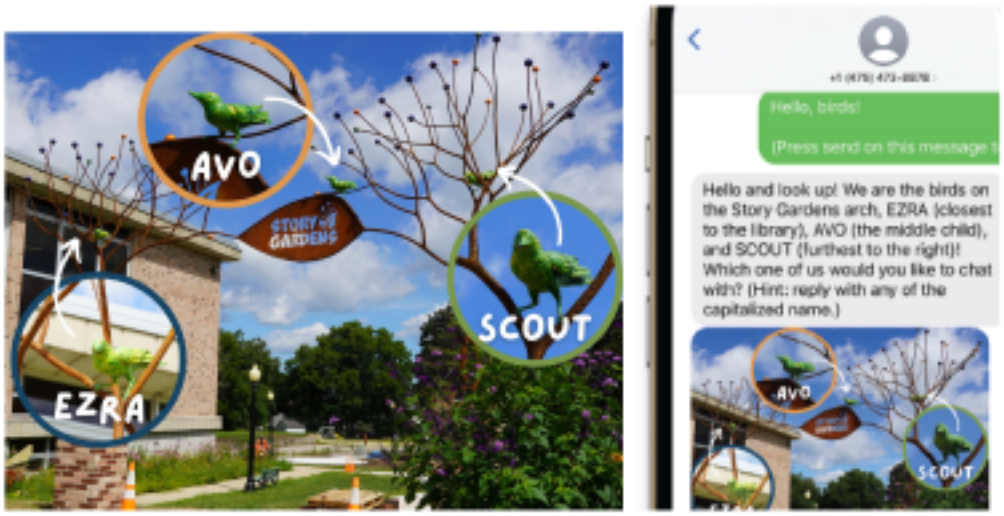

Figure 3: Annotated photograph of the bird sculpture used by the Milton Public Library for their project (courtesy of the library, on left); at right: screenshot of SMS messages sent by the birds to a player

For this game, three unique personalities were developed for each of the birds by library staff and each was given a unique name: Ezra, Avo and Scout. A choose-your-own-adventure story game was created by anthropomorphizing each of the three birds and writing an original script for each. The dialogue of one comedic bird was written by students from a local school; a second gives a tour of the grounds; a third gives some of the library's significant history – and features photographs texted directly to the participant's phone. By inscribing the outdoor story garden with a fictionalized adventure, the designers brought new and deeper meaning to the place (see Tuan on the distinction of space-versus-place, 1977). For some games, this included appropriating myths and space to foreground marginalized voices and update established history.

The second placemaking model involves ***connecting places*** such as sites of historical significance with a playful guide. To illustrate, consider a game made in Brookings, South Dakota, by a team of first-time designers. They created a texting game designed to connect a series of unique sites located across the historic downtown of their small prairie town (see Figure 4). In their game, local assets were connected by guiding players in crossing town together on a texting scavenger hunt.

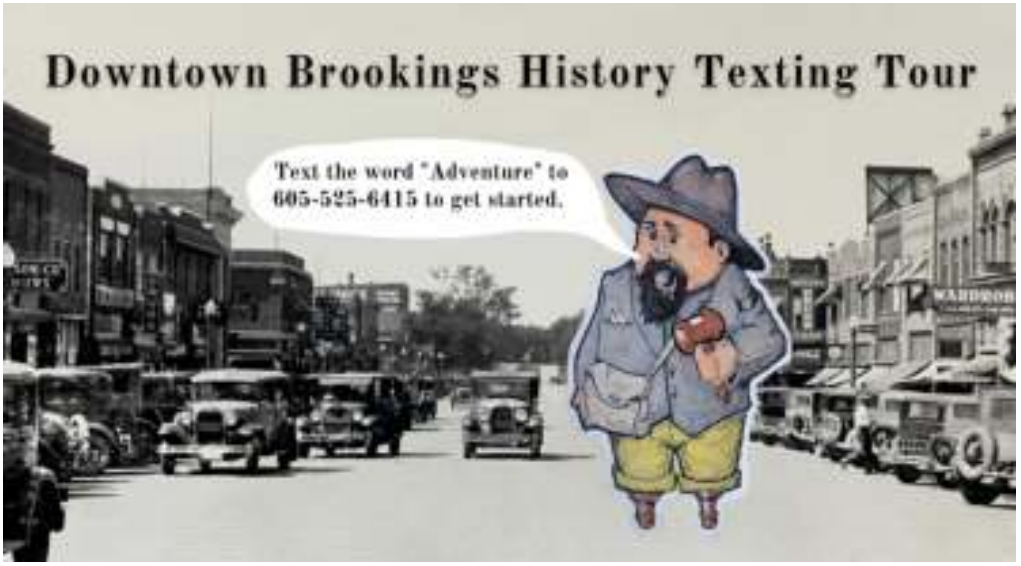

Figure 4. Marketing image created for the *Downtown Brookings History Texting Tour*, featuring the legendary town founder

The design team found the character for their protagonist in the eccentric legend of the town founder, Wilmot Brookings. More than a century earlier, Wilmot had walked around town on two squeaky wooden legs – and he continues to be celebrated. A local alehouse favored by the design team is called the Wooden Legs Brewing Company. In the game, Wilmot led players around to rethink how several places in town were connected - including through narrative.

One outcome was to build the social capital of the team, in the spirit of what participatory design scholars call infrastructuring (Le Dantec and DiSalvo 2013). The three team members came from very different backgrounds: a professional historian, a lifelong Brookings resident and library professional, and a highly engaged library employee and alum of Brookings-based South Dakota State University. According to their interviews, making the game together cemented meaningful bonds formed through joyful collaboration between community partners.

The third placemaking model involved ***deepening a singular connection*** with a specific cultural asset. To illustrate, consider the game made by the library and history museum in San Leandro, California. They created a bilingual audio hunt around a prized set of outdoor tiles depicting the story of Don Quixote. Although many people are familiar with the story of Don Quixote, they have never received a phone call from him. In this outdoor experience, the player's cell phone rings and they hear a voice (English and Spanish) talking straight to them – and inviting them to look at the tiles in front of them.

Figure 5: Photograph of the Don Quixote tiles at Casa Peralta in San Leandro, California (image courtesy of the History Museum of San Leandro)

Players were invited to closely investigate the finest details of the constellation of artisanal tiles throughout the property (see Figure 5). The original tiles were installed in the 1920s by a resident who was deeply inspired by Don Quixote. The bilingual options of the fictional protagonist not only served the large Spanish-speaking community of San Leandro, but made a cultural asset more visible. Both the museum and library shared the goal of helping the community to pay closer attention to the story, its connection to literature and the town's history.

2. Aligned Pleasures of Place-based Making

The second research question explored the pleasures and uses of game design for neighborhood libraries. Our findings below are based primarily on our 23 in-depth interviews (and the wider set of 30+ exit surveys) with participating librarians. Drawing on Uses and Gratifications frameworks (e.g., Ruggiero 2000), we asked about the motivations of participants to join the program; what they used the training for; and what they found gratifying in both participation and their impact.

The most frequent source of joy in the program came from making their creations, according to our interviews. Process was emphasized by a clear majority of interviewees (over 70% of our 23 interviews), as opposed to the joys of hosting their games or even their impact on patron engagement. The strength of this finding surprised us, yet aligned with theories of libraries as community catalysts and connectors that similarly emphasize process over products – e.g., see the US federal strategy for libraries as community catalysts, (ORS Impact 2022). Three themes emerged for joy in making, beginning with the most commonly asserted. They are:

Joy as Makers: (a) Functional, (b) Playful, and (c) Story-based

The first source of joy was simply in ***making something that worked***. We repeatedly observed the emotional power of librarians receiving their first text message back; one librarian described it as their most satisfying experience. More broadly, the interviews revealed a palpable sense of achievement and joy from the learning and problem-solving associated with making a functioning interactive game for the first time. The problem-solving was expressed in terms of making the interactive functional; one expressed their greatest satisfaction in "the first time seeing it actually run all the way through without an error, that was pretty nice." Another library staffer described their sense of achievement from making their interactive conversation with a fictional bird by saying "(the) first time… I actually was able to

interact with it just put a big smile on my face." Together, these answers echo a sense of accomplishment that is common with experiential learning, according to library funders in the US (ORS Impact 2022).

Second, librarians found joy in ***making something that is playful and engaging***. One librarian described their ability to "weave in kind of a playfulness" as the source of their satisfaction with the program. Many talked about the joy of making something "fun," like one in the state of Alaska who described it as "being able to create this fun interactive project." These gratifications often emphasized creativity as a source of joy, like one who said it was "satisfying to know that there was a route to be creative and think outside the box... and that other folks will be able to do that too." In other words, this joy was often felt about the group or creative team.

A third group of librarians found primary joy in ***making the story***. This included writing the script and developing the characters. One librarian described the pleasures of fictionalizing a real historical figure as "being able to flesh out this person whose photographs I've got, whose letters I have… I [even] have her physical items." We repeatedly met librarians in our Zoom office hours describing the joy of writing their script; as one interviewee put it, "it was really, really, …really fun."

Joy in Hosting Games, Partnerships and Positioning

Some 40% of librarians described their primary joy as coming from the impact or launch. One described it as the joy of "finding people actually playing it without me, without me having to persuade them; oh my goodness – somebody's doing it! …that was fun!" In its simplest form, this joy was about observing their project reaching an audience. Sometimes it was about the joy of seeing their protagonist engaging with the public, like a librarian who described how she had heard "kids across the library. …I've heard them being like 'the cat is calling us!'"

Many librarians found their greatest joy in the collaborations and relationships. For some this was an interpersonal connection ("this is one of our first projects that we [two] had worked on together. So that was really really fun"). Many emphasized the satisfaction of building stronger ties externally, which is important for placemaking; one described how "the partnership part was great .... we all really complemented each other;" a second described the value as being "able to make connections between the library and community stakeholders on the building-the-game side." Overall, this joy seemed less about counting the number of patrons reached as individuals (many reached hundreds, and a few reached thousands), and more about deepening ties to the community overall, connecting across associations, and strengthening networks. Most were only able to join the program because their institutions sought to expand the range of opportunities to engage residents, but as the weeks of the program went on, we observed a transition to *celebrating the external partnerships* involved in making the games – whether it be collaborating with local business to promote the activity, community partner institutions to produce the game together, a perceived strengthening of the reputation of the library with community organizations, or demonstrating to local government officials the innovative gaps that libraries are able to fill. Such partnerships did not follow a template, but rather took their own shape in each town, as library staff organically created important new connective tissue between the institution and community partners.

3. Reframing Game Design

The third research question investigated frames for "game design" that might be more accessible to librarians.

The need to de-center "game design" was confirmed in the pilot year, based on the level of intimidation and mismatch we observed. We heard variations on the refrain of, "I am not a gamer, let alone a game designer" in interviews with librarians. To be clear, we anticipated this and so never pushed librarians toward the identity of "game designer." Yet the same librarians found it compelling to "borrow" from game design and the power of games. This is a delicate balance; without care the attempt to borrow from games can lead to shallow attempts of gamification that exploit the idea of games without solid grounding (Bogost 2015); we pushed instead toward game principles like meaningful choices, as described below.

Our direct observations also supported the difficulty of teaching computational thinking or even design thinking. Relatively few libraries appeared to find joy in these modes abstractly. Similarly, game design principles were often too abstract for this non-gamer audience; most had no prior experience with user-centered design, let alone working through game concepts like meaningful choices, productive failure, careful feedback loops, balancing – or any number of principles taught in university game design programs (e.g., Fullerton et al. 2004).

By contrast, the librarians immediately found joy in crafting narrative and characters. Narrative approaches were especially appealing when they could be linked to creative placemaking techniques, like connecting to local history and amplifying local cultural assets. Over the three year period, we experimented with several frames for the narrative forms they used, including "interactive stories," "lightweight games," "mixed reality," and "playful activations."

"Story Games" as the Product

The most useful framing to emerge was calling their creations "***story games***." This phrase iteratively emerged to make it easier to speak *with* librarians and their creations - it matched their understanding and avoided several pitfalls. To be clear, we are not arguing in an essentialist way that "story games" are what the creations "actually are," since there are plenty of other game studies definitions and constructs with deeper academic roots. Rather, the goal was to identify a framing that helped librarians to participate comfortably and reflected their values and joy as observed in the findings above.

The term "story games" emphasizes the story as the visible and distinguishing force in their creations, matching what was important to the joy and pleasure of librarians as participants, including for placemaking impact (see findings above). Story games as a term also aligns with the central use of "protagonists" in the typology of placemaking games used in this study (e.g., texting with a ghost, tour guide, host). An emphasis on story aligns with plenty of game studies as well; places already have their own *story worlds* (from the early work of Janet Murray (1998) to Henry Jenkins' work on game design as narrative architecture (2004)), and the use of 'game' reflects the central concern with bringing the place to life playfully.

The use of "game" also opens the door to draw on game dynamics and principles. Game as a term was more accessible to them than the 'playfulness' of Miguel Sicart (2014) and others, despite our careful work to move the librarians beyond didactic informational games into more genuinely playful experiences.

"Conversational Playfulness" as a Transformative Experience Goal

The second finding is to frame the experience goals around "***conversational playfulness***." Librarian creativity and comfort greatly accelerated when they were invited to write dialog for their protagonists (e.g., text with a mural, as described in the findings on joy above). This was not automatic.

Initial attempts by librarians in the first year were often described by outsiders as insufficiently fun or engaging. Their writing often felt like encyclopedia entries - with neutral facts about the place or cultural assets, but no personality or playfulness. The gap was clear: librarians as first-time designers lack the bandwidth to take a full university course on game design, or even read game design books.

Specifically, playfulness was useful as an *experience goal* tied to game dialog and conversation with the protagonists. Experience goals are a core approach to game design, as articulated in Tracy Fullerton's widely-used *Game Design Workshop* (2004); clear experience goals help designers stay focused on the felt experience that players should experience. For the librarians in this study, playfulness in the abstract was hard and even stressful.

Fortunately, playful *conversations* proved much easier to create. One effective method looked similar to the role play of improv comedy. Specifically, we would invite a librarian to roleplay their protagonist with a colleague, and insert one silly or highly exaggerated line of dialog. For example, if their game featured a neighborhood ghost, then have it tell a silly joke, brag about something silly from the world of the dead, or tease the player about something silly and undead. In other words, we encouraged librarians to be campy and over-the-top (or even "stupid silly"). Almost immediately, they found some of the fun of writing playful dialog - and we could then start extending it to the game mechanics and dynamics. Even mechanic-forward games like scavenger hunts felt more playful when the narrative layer featured a playful conversation.

The approach makes particular sense with the conversational affordances of text messaging. Many other kinds of games are possible, no narrative required. But the research goal was to identify how game design might be reframed to expand participation, and match the local goals which tended toward placemaking/keeping. This case supports framing design around role-play and storytelling to increase accessibility without losing the power of playfulness and game design.

DISCUSSION

As more towns invest in creative placemaking (Markusen and Gadwa 2010), including to prevent cultural gentrification, it is clear from this study that the design process itself is powerful in bringing organizations together, and that special support is needed for libraries to be at the center when technology and media-based storytelling is involved.

One implication of this study is that there is a need for game scholars to study production by outsiders, beyond the established traditions of game education and amateur production. Outsiders do not consider themselves gamers (and so the identity stakes are quite different), and do not seek to become game designers (and so the learning goals are quite different).

For research on participatory design with games, this study provides a bridge to working with community-based organizations. In this sense it contributes to the specific tradition of participatory design with communities (DiSalvo et al. 2013), and argues for going beyond user-centered design and even co-design to empowering local organizations to make their own design choices. This matters for libraries in particular, as they are some of the most pervasive democratic institutions and are increasingly transforming to go beyond their walls and relate to local places and municipal life (Leorke and Wyatt 2022).

As a constraint, the budgets of local libraries are frequently very small. For research on the democratization of game design, one implication of this paper is that low-tech and low-budget games deserve separate study. Unlike larger budget serious games, there has been little study of digital games that are deliberately low-budget.

The need for templates and clear game types like those in Table 1 is supported by the incredibly scarce time available to librarians. Most of our librarians were required to spend their hours facing the public -- like staffing the front desk *while* working on their game projects; they had to alternate between checking out books and answering patron questions while writing the game script. In contrast to the nights and weekends associated with indie game design, off-hours were not seen as compatible with librarians' role, union terms, and professional culture. Especially in small towns where staffing is limited, librarians often have very little ability to redirect their time toward design - even if the outcomes are expected to align with their institutional goals.

To open the imagination of first time designers, game typologies like those identified in this paper can be valuable. This paper contributes to game design by helping to articulate the possibility space, based on one of the largest controlled efforts to train community groups in game design. For society to pursue games at the neighborhood level, the greatest need may simply be to expand the civic imagination (e.g., as articulated by Jenkins et al. 2020) to include a wider range of non-commercial games and design practices with local impact.

For game design with mobile messaging, the utility of centering design around a "protagonist" who responds to messages and calls overlaps with prior work on agents, chatbots and non-player characters. Yet this paper shows some of the narrative value distinct to placemaking and the parallel traditions of roles like tour guide and site host. For participatory design, this study showed that protagonists as the focus of design can accelerate the focus on playfulness and increase pleasure in the design process.

One implication for player studies is that the intersectional pleasures of neighborhood games may be distinct. Specifically, the linked pleasures of playing and making games may have powerful alignment at the local level. This study identified how first time designers often connected the pleasures of making games with the desire to have an audience and catalyze the connections of place. Yet there is good

reason to expect that players will similarly find distinct pleasure in local games that embody principles of local pride, including being locally made. This is a kind of "double bottom line" pleasure that already exists in the field of creative placemaking/placekeeping. Clearly the game must still be fun and high quality - but it can simultaneously be enjoyed for the ways it symbolically celebrates place and community. Such dynamics of local pride may be especially strong in shared public space, and contrast with the global fan dynamics of pride in the game studios behind their favorite games. Future work should therefore examine more of the intersectional pleasures of making and playing games that celebrate local community.

Each of the game types in Table 1 might have its own joys of production that deserve future research. For example, we might expect one set of joys for bringing a sculpture to life; but these are different from the joys in planning a route through physical space like a tour, such as connecting with different businesses and building owners to pick story elements for each tour location. To take a third example, we might expect distinct joys from inviting the player to look more closely, including the joy of facilitating a close reading and working with experts on a particular cultural artifact. Further research could explore the extent of these differences, and the extent of their overlap and intersection.

CONCLUSION

This paper advances our understanding of how game design can be made more accessible for all neighborhoods.

The findings of this study include identifying three game types to serve the placemaking goals of community organizations, including to activate public space, to connect across places, and to look more closely at valued landmarks and cultural assets. Just as importantly, this paper identified some of the satisfactions that might sustain design in under-resourced organizations, including the intersectional pleasures of making something that works, engages an audience and catalyzes local partnerships. Finally, this study identified two ways to reframe game design for mobile messaging in more accessible ways for first-time designers, including to articulate the goal as making "story games" and the experience goal as "conversational playfulness."

Future work is needed to understand whether these findings on libraries apply equally to community-based museums, neighborhood art spaces, and community centers that similarly want to design playful experiences around mobile messaging.

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