Sacred Springs: Teaching Children Local History via a Game Jam

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ABSTRACT

Game Jams are planned events in which attendees engage in practices of co-creation in an attempt to devise a game concept and prototype. They are designed to be fun, participatory, and stimulate creativity over a short intense period of time. We report on a recent Game Jam, *'Sacred Spring'*, aimed at educating children on the medical and scientific history of the Roman Baths in the city of Bath, UK. In this paper, we describe the event and its output, with some brief discussion on what we learned from organizing and running the game jam with a group of children aged 6-9 years old. Our aim is to discuss our Game Jam with the inclusive participatory design (PD) community, contextualizing novel

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game design and game play based learning strategies in the PD space, and devising ways to reach a broader audience in future workshops.

CCS CONCEPTS

• Applied computing → Collaborative learning; **• Human-centered computing → Participatory design**;

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GAME JAMS AS LEARNING EXPERIENCES

We present our experience organizing a Game Jam (GJ) with young children to initiate a dialogue on the potential of GJs as hands-on educational tools and participatory practices. GJs are team based participatory activities where people learn new skills through processes of creation and collaborative design. [2, 4]. They support creative thinking, collaboration, and active learning. While GJs are often organised for adults (most often young adults), the past 5 years has seen the rise of events designed for children specifically. In 2015, National Museums Scotland organized a GJ for young people that intended to promote engagement with their collections[1]. In addition, the Global Game Jam (GGJ) launched its first official event for children in 2018 with the aim of helping young people improve creative thinking and communication skills[2]. Hence, we consider GJs a promising format to educate children in a unique hands-on way. However, little information about how they are organized is documented, and if and how they are an effective tool for teaching topics in, for example, history and culture. While we were organising *'Sacred Spring'*- a GJ to teach children about the history of healing waters in the city of Bath in the UK - we could not find official guidelines and only a very limited number of research outputs on the topic. Based on our experience we discuss how to organise and evaluate a GJ as a co-design tool and learning experience for children.

ORGANISING A GJ FOR CHILDREN

Our format for *'Sacred Spring'* was four 90 minute sessions in total, with 1 session per week (See Table 1). Our GJ had a thematic constraint, meaning the children were tasked to design a game on a specific topic, in our case the history of Bath's spring waters. In **Session 1** we provided a brief history of the sacred springs, introducing facts, myths, and historical perspectives on the theme to stimulate curiosity and creativity. We also used the first session to introduce children to some basic concepts of game design by inviting them to play some games, following this with a group discussion on their basic rules.

Table 1: Breakdown of all 4 sessions of the Game Jam.

Session	Synopsis
1	Game Jam Overview Played Timeline Introduce concepts of game design
2	Timeline derivative Mindmapping Prototype
3	NFC Demonstration Sound recordings
4	Final Prototype Play test Closing Discussion

[1]https://igdascotland.org/2015/09/national-museums-scotland-game-jam-project-opportunity/

[2]http://www.kidsgamejam.org/it/

[3]https://www.boardgamegeek.com/boardgame/128664/timeline

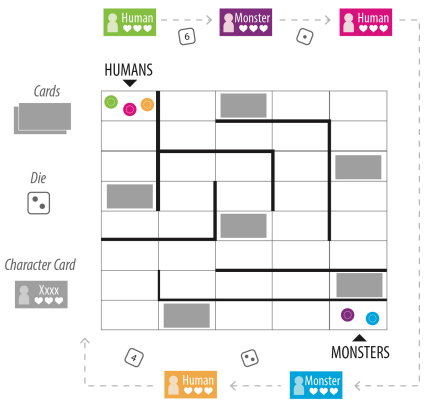

Figure 1: An illustration of Sacred Springs. Play begins with human team and alternates between teams. Shaded areas represent tiles that have an associated Action Card.

In **Session 2** the children began to develop their own game. To begin, we challenged them to adjust the mechanics of an already published game, Timeline[3] to make game play collaborative. In this way the children felt like game designers from the outset but without the creative barrier of starting from nothing. This promoted further discussion on game mechanics while fostering confidence as the children witnessed their own derivative game come to life. We then conducted a mindmapping exercise to help the group devise some basic game concepts, before providing various paraphernalia to facilitate a prototyping task. The result was a maze style game with two opposing teams: *'The Humans'* and *'The Monsters'*. *'The Humans'* team took on an archaeologists role, seeking out the elusive spring waters, and the *'The Monsters'* were tasked to thwart their efforts.

Session 3 introduced the children to various tools that we felt had potential to enhance their game. In particular we demonstrated the combination of NFC tags and smartphone apps to trigger media content e.g. text, sound and image, through simple tap actions. Once the children were clear on the system of interaction, we encouraged them to think about how NFC tools might make their game more compelling to other young people. Although this activity required a higher level of facilitator input than others, the children soon discovered that they were able to record event sounds for their game. As sounds could be processed in several ways, the results included the rumbling utterances of monsters, the urgent sound of traps opening, and of course, the cascade of 'sacred' waters onto rock. The results prompted much excitement amongst the team, and overall a renewed interest in the game.

Session 4 tasked the children to finalize and playtest their game. The group spent about 30 minutes tweaking the game, mostly adding further event sounds; indeed audio overall seemed to capture their imagination to a greater extent than text or image. The children also chose to name their game after the GJ topic itself, *'Sacred Spring'*. We concluded the GJ with a closing discussion on its successes and limitations. An illustration of the final game is shown in Figure 1.

EVALUATING GJS FOR CHILDREN

We collected data via direct observation and a brief questionnaire administered after every session to gauge feedback from the children. Although the GJ was rated highly by the children, and feedback was overwhelmingly positive, we realize that a questionnaire survey was not the most appropriate tool to evaluate their experience of the GJ because children may have difficulty verbalizing their thoughts [1]. Hence, we are considering other methods to collect data for future workshops, including small-group interviews to establish what skills participants may have acquired by engaging the GJ. Furthermore, we suspect that there is value in sending a post-event questionnaire to the parents of GJ participants to identify what aspects of their experience the children might talk about at home. Finally, we could plan for more playtesting across sessions. Besides the fact that playtesting is a key part of the game design process, this would also allow us to observe if and how a child's transferable skills improve across the GJ process.

LESSONS LEARNED AND FUTURE WORK

This experience provided us with a better understanding of what children can learn through a GJ and how. While the GJ did encourage the children to engage the history of the Bath spring waters, they nevertheless were unable to retain factual information across sessions. To combat issues related to information retention, we suggest two solutions: 1) use the first 10 to 15 minutes of each session to refresh perspectives on the topic, adding some new interesting facts to engage curiosity and 2) ask children to think about the topic at home and record the results, focusing in particular on how subject matter could be translated to a game. The GJ was however more successful in teaching children practical skills such as learning to work as a team and assigning roles. For example, some children were tasked with devising mechanics while others focused on the artwork or story writing. Although participants were somewhat haphazard in their approach to collaboration at the beginning of the GJ, we found them to be far more open and respectful of the ideas of others as the event unfolded.

We also acknowledge that our GJ engaged only with a small group of children: all attended the same school, shared similar abilities, and had comparable socio-cultural backgrounds. In the future, we want to explore how our GJs as co-design activities can be more accessible, engaging a diverse range of children to facilitate a more inclusive participatory environment. As such we have formulated five suggestions that aim to ensure that GJs can engage a wider number of children: 1) disperse the event across a wider geographic region and within multiple schools and community groups to improve access to GJ event sites; 2) ensure that teachers/facilitators are co-located with children, including trained professionals to support children with special educational needs; 3) instruct teachers/facilitators how to organise and manage a Game Jam event; 4) create a sense of community across locations by scheduling regular location 'check-ins' and enabling children to share content both during and after the GJ; and 5) form interdisciplinary teams to support the event, including pedagogical, game design, and technology expertise to name a few.

In the context of a growing literature base that explores games and GJs for the purposes of learning [3], we want to engage with the Interaction Design & Children, and Inclusive Participatory Design communities to develop a workshop protocol. Our goal is to incorporate the GJ scenario for young children with various physical and cognitive disabilities so that every child may take part in future Game Jams. By engaging children through the medium of play and the mechanics of game design, we hope to raise awareness of local heritage amongst the young generation and have a positive impact on participants and communities who take part in our GJs.

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