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A Programme of Analogue Game Jams with Intense Cycles of Peer Feedback and Iteration

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Abstract

Initially, three analogue game jams (a time-limited non-competitive group game-making activity) were run with UK university art and design students as part of a doctoral research project investigating game-making as a teaching tool. These featured structured, intensive cycles of peer-feedback-led iteration to simulate commercial design practice and produce more functional products. Data gathered from these jams demonstrate that this method of game-making can instil best practice in students and better prepare them for creative careers.

CCS Concepts

• **General and reference** → **Design**; • **Applied computing** → **Collaborative learning**; • **Human-centered computing** → **Empirical studies in HCI**.

Keywords

Game Jam, Design Education, Iteration, Game Development, Creative process.

1 Introduction

The doctoral project that underpins this paper investigates the impacts of using board and card game-making as a teaching tool within tertiary education. This was inspired by a game-making project the author ran with final-year undergraduate students in 2018 and '19, in which participants experienced cycles of iteration and live product testing with their peers that offered a closer analogue to commercial design processes than conventional student projects. Three game jams have so far been delivered to art and design students investigating changes in attitude to feedback and iteration affected by game-making. This paper reports on how the
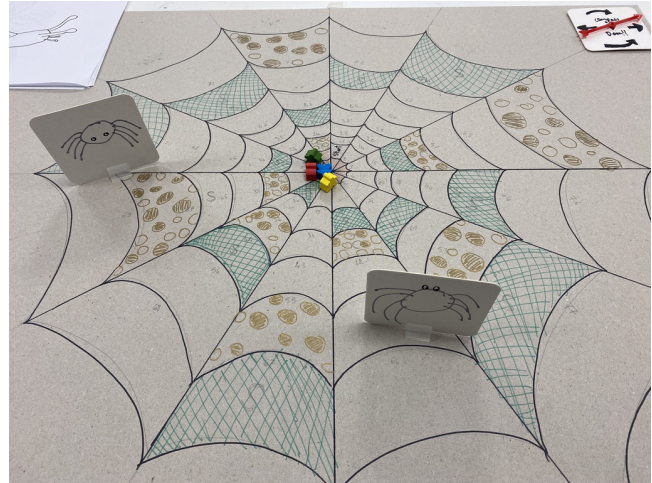
Figure 1: SA&DF: a relatively simple game of exploring a spider's web, with an interesting random movement mechanic and spiral board.

first three jams were structured, the data collection strategies employed, and the challenges faced. Images throughout this paper are of games produced during these jams.

2 Procedure

The growing body of game jam literature [14] [10] [4] [11] [12] [3] begins to develop a debate on best practice, and underpins this project. Conventionally, game jams are concerned with the production of digital games. However, as this project studies non-technical students unlikely to have coding skills, participants produced board and card games. This enabled wider participation, kept the materials required modest, made the most of the researcher's board game making experience and rendered it easier for others to run similar projects. The Salford Art and Design Foundation degree (SA and DF) and Manchester Metropolitan University product design undergraduate (MMUBA) jams were both delivered over two consecutive weekdays. The Manchester Metropolitan University design masters (MMUMA) jam was run over three consecutive Thursday afternoons due to timetable difficulties. Participants self-selected into groups of three and four. Following briefing and initial ideation, sessions cycled between periods of development work, and peer testing and feedback (see diagram) Informed by McDonald and Moffat [15], the jam prompt was 'bugs', chosen for its approachability, as well as its polysemy (a word with many possible meanings), allowing participants the freedom to make a game about covid '19, bugging out, Volkswagen Beetles, surveillance or flawed computer

code if insects did not resonate, whilst maintaining the 'freshness' of responding to a prompt.

3 Data gathering

To make the most of the research opportunity, and to address the difficulty of assessing attitudes [6] [7] [13] a battery of different data collection approaches was employed:

- **Pre-jam survey:** Participants initially completed a survey, collecting demographic information, measurements of experience with analogue games, and card sorting exercises to assess their attitudes towards design processes.
- **Snapshots:** Periodically throughout the jam participants completed a short survey assessing their confidence and enjoyment levels.
- **Observations:** The facilitator captured observations about the participants' game-making, engagement, and anything else worthy of note.
- **Photographs:** Pictures were taken of the participants developing games.
- Post-jam survey: Participants re-performed the card sort exercises from the initial survey and wrote reflective statements about their experiences.
- **Game analysis:** The facilitator wrote a short analysis of the games produced to capture their 'essence'.
- **Facilitator reflections:** After each session, the facilitator wrote reflectively about his memories, feelings, frustrations etc. This captures the emotional response and experience of the event in a visceral personal way [1].

Surveys were presented as Microsoft Forms accessed by participants via a QR code using their phones. This was efficient for participants and required minimal processing. The ambitious quantity of data gathered allows for both quantitative analysis of attitudinal change and qualitative insights using Braun and Clarke's [2] approach to thematic analysis, providing deeper insights and multiple perspectives.

4 Facilities

Following Macklin et al. [14], each jam was held in single large teaching spaces with tables, chairs, Wi-Fi and a projector for presentation. Snacks were provided for participants, as was access to hot drink making facilities. Participants were given standard office supplies as well as a selection of normal, polyhedral and blank dice, blank cards, boards, tiles, various counters, meeples etc. There was also a selection of board and card games available for participants to examine and play including those designed by the author, to address the modest 'game literacy' of most participants.

5 Sessions

Game jams have been delivered to distinct cohorts within Greater Manchester universities. These were organised in collaboration with course staff and were delivered in the host institutions. 22 women, 20 men and four non-binary people participated, with significant BAME, non-British and neurodivers representation, reflecting their cohorts and atypical for game jam attendance [5].

5.1 Salford, Art and Design Foundation

The inaugural jam participants were the researcher's own students, very early in their higher education journeys. Two groups of four formed organically from friends, and one group was 'everyone else'. Whilst all the groups produced workable and interesting games, only one of the teams (formed of friends) was an egalitarian collaboration, the others were led by one participant's vision and other group members were delegated tasks. Interestingly, one attendee did not meaningfully engage at all, though they arrived, promptly, attended both days and reported that they enjoyed the process. Another attendee, nominally a member of one of the groups, made their own parallel game in a fashion reminiscent of the parallel play seen in autistic children [9].

5.2 Manchester Metropolitan University, Product Design BA

Groups were formed from a pair of second-year friends and a pair of third-year friends as a team-building exercise; to the delight of the course leader this worked well. The games designed by this group were all self-aware developments of casual games such as Top Trumps, Dots and Boxes, and Snakes and Ladders. A couple of groups had distinct 'leaders' which led to a clear direction early on, but the less hierarchical groups maintained enthusiasm far more effectively into the second day.

5.3 Manchester Metropolitan University, various Design MAs

Due to timetabling restrictions, this jam was run over three Thursday afternoons. The first session of this jam was well attended, and energy levels were high; all the groups embraced the prompt in very different ways, but all designed in a very 'theme first' manner, which resulted in significant development effort before the core gameplay loop was securely established, requiring significant staff support. Attendance dropped precipitously for the second and third sessions reportedly due to other work pressure and unfortunate timetabling meaning that there were barely enough participants for the peer feedback mechanism to work. A multi-week mode of delivery does not appear practical for this game jam model.

One of the remaining games became the pet project of one of the participants, who spent considerable time working on the game between sessions, making it tricky for other team members to feel a real sense of ownership. The other remaining group had a strong concept for a game in which players were trying to escape from an entomologist collection by collecting bug traits, but struggled to translate this into game mechanics, largely due to a lack of exposure to the wealth of mechanics present in hobby games.

6 Participant feedback

Initial analysis of the data gathered from these jams suggests participants increase the importance they please on iteration based on product testing and improvement, a foundational tenet of any creative career. They also show promise as a team-building/ ice-breaking exercise.

Participant feedback was universally positive, almost all the responses to the optional question 'Is there anything else you want
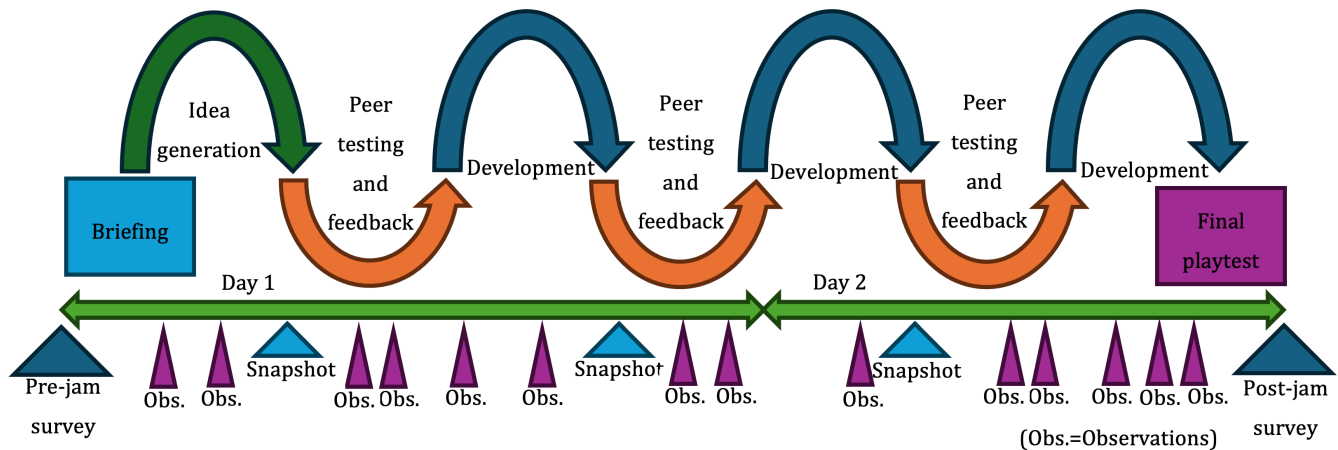
Figure 2: Game jam and data gathering cycle

Table 1: Attendance

Jam	Date	Day 1	Day 2	Day 3
SA&DF	Oct '23	13	12	NA
MMUBA	Nov '23	15	10	NA
MMUMA	Mar '24	14	6	4

us to know?' were expressions of thanks and reporting having fun. Three of the groups planned to continue working on their games after the jam and three participants were inspired to build games for their assessed modules.

Figure 4: MMUBA: Players overcame challenges to escape from an island, every playtest exposed exploits, that were patched live.
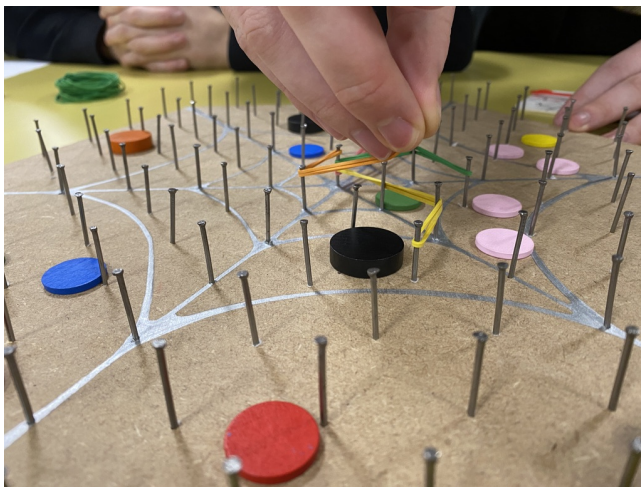
7 Challenges

The MMUMA jam showed that multi-week jams are not optimal, and the many failed attempts to organise jams in high school, entrepreneurship courses and outside the UK mean that this report only details three jams, rather than the six that were planned by this point, meaning data collection will continue into the following academic year. Fitting an intensive game jam with multiple cycles of testing into an existing academic programme is challenging, to be widely adopted as a teaching tool it must be compelling and convenient to course leaders.

Numbers completing the post-jam survey were lower than hoped, resulting in a smaller data set than ideal, also many participants had to be subsequently cajoled by staff in the following days, eroding the immediacy of their responses. In future jams, completion before
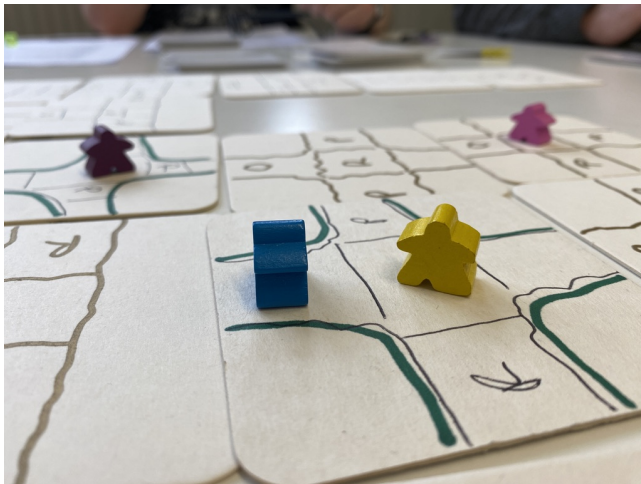

Figure 3: MMUPD: A tactile game inspired by 'dots and boxes'; players use rubber bands to collect bugs trapped in a web.

Figure 5: MMUMA: A post-apocalyptic survival game, where players race to a 'bug out' shack; it's unclear why it's not cooperative...

leaving must be rigorously enforced, it may help to communicate the typical time taken, as participants expecting it to be onerous will likely be reticent.

The quantity of observations and photographs taken was compromised somewhat by tension between the roles of facilitator and data gatherer. The role of facilitator was prioritised, likely due to the author's teaching background. If resources allowed, these two roles would ideally be performed by separate people able to focus on their respective responsibilities.

The quantity and complexity of data collected presents a challenge to comprehensively analyse and digest into the straightforward case for adoption that will convince design educators to adopt this pedagogic approach. This wealth of data does, however, offers a significant prospect of offering insights beyond a simple 'does it work?'.

8 Future sessions

In order to achieve saturation, so the studies' results can be generalised [8] at least three further game jams will be delivered. These will follow as close to the same protocols as the above jams, to produce comparable data, although there will inevitably be variations due to pragmatic considerations.

9 Conclusion

These first three jams have demonstrated a variety of benefits from using game-making as a teaching tool for 'creative' students.

- **Reception:** Jams have been very well received both by participants and their teaching staff. Every group finished the jam with a working game and many have gone on to use game-making in their wider studies.
- **Attitude modification:** Initial analysis suggests that the jams increased the value participants place on cyclic iterative improvement in response to feedback. This fundamental axiom of commercial creative practice is absent from most

conventional pedagogic approaches, and so students thus equipped will be better prepared for their subsequent creative careers.
- **Wider benefits:** This approach shows great promise as a team-building exercise, inclusion tool and method of bolstering student satisfaction.

Despite challenges with timetabling and attendance (especially with non-continuous jams), the author is confident that both the game jam and wider game-making practices have a great deal to offer educators. Further jams and other components of this doctoral research project will add depth, context and deeper insights building on those elucidated above.

Acknowledgments

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