First-Timer Learning Experiences in Global Game Jam

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ABSTRACT

Game jams are accelerated game creation events usually taking place over the course of a short time period. A variety of learning outcomes from game jamming has been discussed in previous research, with learning being a common motivation for attending game jams. Despite this, there has been little research into the psychological mechanisms driving learning and participation. In this article, the learning experiences of four first-time participants in the Global Game Jam are examined through self-determination theory. Results suggest that a wide spectrum of learning is experienced during a game jam, and game jams offer at least a temporary heightened sense of creativity and competence. Assessment remains an issue, however, and learning benefits may be contingent on the jam setting. All three basic psychological needs listed in self-determination theory are potentially fulfilled by game jam attendance, suggesting the relevance of self-determination theory in further jam research.

KEYWORDS

Autonomy, Co-Creation, Competence, Games, Learning, Motivation, Relatedness, Self-Determination Theory

INTRODUCTION

As defined by Kultima (2015), a game jam is an accelerated, opportunistic game creation event in which participants create a game in a relatively short timeframe exploring given design constraints, with the end results shared publicly. Typically, the entire game creation process from ideation to publication takes place during the event, with 48 hours being a common event duration. While game jams often focus on digital games, other types of games such as board games (e.g. Pollock, Murray & Yeager, 2017) can also be created. Game jamming has gained popularity in recent years, and the 2018 instalment of the world’s largest on-site game jam event, Global Game Jam (GGJ), had 42800 participants in 108 countries (GGJ, 2018).

A game jam commonly involves working with several other people in a process of co-creation that both encourages and requires novel solutions to design problems because of imposed constraints such as limited time, a theme that the game needs to tie into or location-based limitations such as limited access to the internet (Kultima, Alha & Nummenmaa, 2016b). This makes game jamming inevitably a learning process for participants, especially first-time attendees. Some game jams are explicitly designed to have educational goals (e.g. Petri et al., 2015; GGJ NEXT, 2018) and at least one guidebook (Cornish et al., 2017) for using game jams in education exists.

The question of why game jams are, or are perceived as being, good venues for learning has not yet been fully answered. Much of the research on game jams and learning is based on case studies of individual events (e.g. Preston et al., 2012; Hrehovcsik, Warmelink & Valente, 2016; Pollock,
Murray & Yeager, 2017) with detailed descriptions of the events, often paired with either qualitative or quantitative data or both. It appears that many researchers studying game jams are also game jam organizers, which may in turn explain the approach taken: a notable part of game jam research focuses on the “what” and the “how”, and less on the “why”. While knowledge of game jam practicalities and large-scale survey data is vital to both the studying and hosting of jams, the lack of an established theory frame makes it difficult to position game jamming in relation to other activities.

In this study, game jam learning is examined through self-determination theory (SDT), formulated by Ryan and Deci (2000; 2004). Experiences of first-time participants are explored to discern what elements of the jam event motivate participation and learning and facilitate intrinsic motivation.

The aims of the study are twofold. Firstly, by examining participant learning experiences we gain deeper understanding of game jam learning. Secondly, using an established theory of motivation, game jamming and game jam learning are given added context. This promotes increased future comparisons with related areas of research such as playful learning (e.g. Kangas 2010) and learning by making games (e.g. Kafai & Burke, 2015).

Learning Through Game Jams

Many participants attend game jams to learn. Learning is a common motivation for attending Global Game Jam (Arya et al., 2013; Fowler et al., 2013; Smith & Bowers, 2016; Wearn & McDonald, 2016). This appears to be the case especially with first-time game jam participants: over 90% of the first-time attendees surveyed by Preston’s research group (Preston et al., 2012) were looking to increase their skills by participating in a game jam.

The educational value of game jams has been recognized in previous literature, especially regarding developing professional skills required in the game development industry. Examples of skill development through game jamming listed in earlier research include familiarization with a variety of design practices and strategies (Musil et al., 2010), learning of new game development tools (Fowler et al. 2013) and learning about the collaborative aspects of game development (Shin et al., 2012; Pirker, Economou & Gütl, 2016). It has been suggested (Hrehovalcik, Warmelink & Valente, 2016; Mikami et al., 2016; Pirker, Kultima & Gütl, 2016) that game jams help bridge the gap between formal game development education and the game industry.

In addition to game development skills, game jamming has been viewed as being conducive to promoting STEM (Science, Technology, Engineering, Mathematic) and STEAM (STEM + Art) learning (Arya et al., 2013; Fowler et al., 2016; Pollock, Murray & Yeager, 2017). The multidisciplinary nature of game jams, bringing together students from for example computer science and arts and humanities, can promote interest in a variety of disciplines, potentially helping to bridge the gap between STEM and STEAM (e.g. Arya et al., 2013; Fowler et al., 2016; Pirker, Economou & Gütl, 2016; Pollock, Murray & Yeager, 2017).

There is limited research on learning resulting from game jam participation. Although the participants studied by Arya et al. (2013) had a strong experience of having learned new things during their participation in the Global Game Jam, this experience was not reflected in measurements of their skills pre- and post-jam. Hrehovalcik, Warmelink and Valente (2016) failed to get statistically valid constructions for measuring collaboration taking place during a jam event, which they noted as a challenge for game jam learning research. However, Reng, Schoenau-Fog and Kofoed (2013) found that attending game jams motivated future learning in participants, suggesting that jam attendance may drive learning after the event itself has ended. Game jam participation has been found to be associated with better academic performance, but the direction of causality is unclear (Preston et al., 2012). These examples highlight some of the challenges in assessing game jam learning.

Authors have addressed questions of motivation, learning and the appeal of game jamming, but the subject has been less commonly explored in depth or approached through existing theories of learning and motivation. This is not to say it has not been done: Preston et al. (2012) have discussed cognitive arousal in relation to games and Fowler et al. (2016) have looked at game jamming through
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