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# Sustaining Stories: Story in games for social impact

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**Abstract**

Storying in games can effectively promote pro-social purposes by bringing complex systems, social issues, cultural knowledge and practices to life. This paper considers a case study of the game 'Bumper Crop' developed in a specific socio-cultural context with small farmers in India aimed at communicating the real life issues and challenges they face, along with those of rural development and maintenance of sustainable agricultural practices. In particular, it will discuss the way that stories operate within the game and in social impact games in general and how they are an effective mediated environment for knowledge integration and identification.

**Author Keywords**

Serious games; Social impact games; Storytelling tools; Participatory design; Game-based learning;

**ACM Classification Keywords**

K.4 Computers and Society: K.4.2 Social Issues and K.4.3 Organizational Impacts: Computer-supported collaborative work; K. 8 Personal Computing: K.8.0 General: Games



**Figure 1.** Farmers playing Bumper Crop in Rajgarh

### **Bumper Crop Objectives**

The objective of 'Bumper Crop' is to be the first player to complete the harvest of three crops. Players roll a dice to move backwards or forwards on a game board where they land on spaces and then complete tasks to grow crops through a cycle of agro-food production. Other spaces representative of the kind of personal, cultural, political, environmental and economic obstacles that small farmers in India must overcome to survive, for example, power outages, drought, weddings, road developments and corrupt distributors.

### **Introduction**

By bringing complex systems, social issues, cultural knowledge and practices to life, games can be particularly powerful story-telling mediums to promote knowledge integration and behavioral change. This paper considers how storying operates to this effect within the physical and digital board game 'Bumper Crop', developed by a research team of UK/India academics and practitioners working in partnership with Digital Green, a Delhi-based non-profit that combines technology and community engagement to improve the social, economic, and environmental sustainability of small farmer livelihoods.

The design and structure of 'Bumper Crop' aims to simulate events in farmers' lives as well as the agro-food production cycle as a whole. Events like water shortage, power failure, drought, floods and family situations like wedding and birth of a child are integrated into the game to create its own narrative. Thus, resolving conflicts is a part of the game play together with understanding the problems faced by an Indian farmer.

'Bumper Crop' belongs to the distinct genre of interactive media commonly understood as serious games, integrating informational content within games technology for purposes other than entertainment, such as educational and advocacy opportunities. In general, serious games can do more than just represent or advocate issues. They offer participatory learning by employing games as social actors that build relationships through dialogue, feedback and behavior modeling [4]. They can create immersive, situated and experiential learning opportunities that facilitate

constituent training and organizing. Indeed, understanding underlying assumptions about reality modeled within a simulation gives access to a key factor of political power from which demands can be made for more direct channels of communication, representation, and economic and political feedback [5].

Storying in games operates as a 'complex-process' metaphor through the immersion of the player in a 'field of practice' where knowing unfolds by movement within an environment [1]. As 'mediated enactive experiences' they have been proven to influence self-efficacy or impact on motivation, perseverance for success or recovery from failures [3].

Originally, 'Bumper Crop' was created as part of the *Play to Grow* research project, which aimed to design and test a digital game based on the experiences and challenges of being an Indian farmer as a method of storytelling and learning to promote young urban adults' awareness of issues facing small farmers in India. However, the initial results of playtests with both Indian farmers and young urban adults revealed that the game also affords impactful learning and knowledge sharing opportunities amongst farmers. This paper considers the potential of this new direction in the research and its contribution to the understanding of how game design might best take advantage of these experiences.

### **Method**

A participatory approach was first initiated to involve consultation with 40 farmers around the village of Sanchi in the region of Madhya Pradesh. Stories of farmers' daily lives and the challenges they experience



**Figure 2.** Farmers harvesting wheat in Rajgarh, March 2014.

### **Socio-cultural Context**

Madhya Pradesh is one of the least developed states in India with food insecurity, literacy rates below the national average, and poor nutrition and health indicators (UNDP Millennium Development Goals). Their livelihood and survival is threatened by inequalities in bargaining powers of growers, financiers and distributors of food. Market-led economic reform in India threatens to intensify inequalities directly linked to hierarchies of power that prevail across rural Indian religion and politics. Indian media often portrays farmers as poor and plagued by suicide.

were incorporated as narrative content of a live action game prototype created to explore different game mechanisms. Following this, a board game mechanism was selected that is similar to the popular game of Monopoly for its familiarity and the opportunities it provides for a combination of role-playing, simulation and strategy. The game was then evaluated with focus groups in India including 15 young urban adults in Mumbai, and 24 farmers from Rajgarh in Madhya Pradesh. With this initial feedback we are now developing a digital version of the game for an android platform.

### **Serious Play**

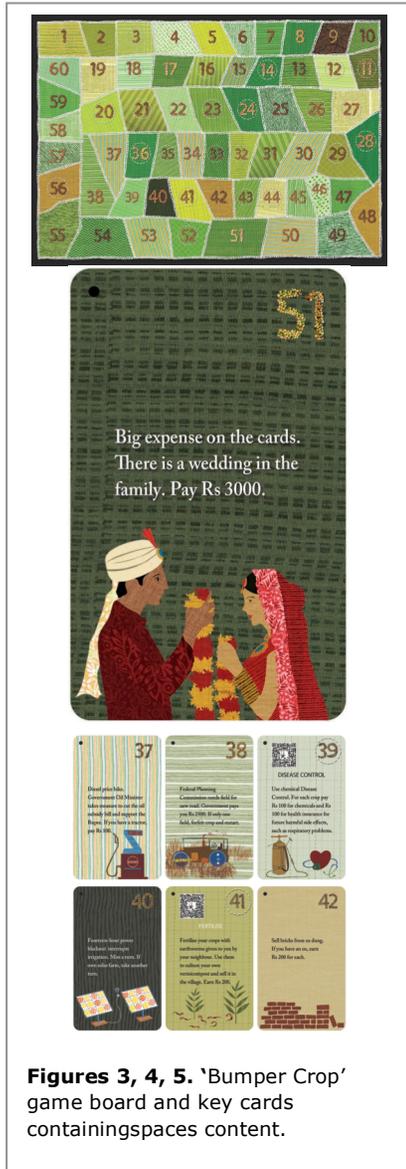
An ongoing challenge with serious games is how to engage identification and intrinsic motivation within the game in a way that balances the real world with the game world. During the design process, we explored different game concepts and mechanisms that would maximize and balance factual or serious content, while encouraging different levels of engagement [2]. The board game format enables opportunities for creativity through adopting roles in the simulation of real life experiences, challenge through strategy, social and competitive engagement with multi-player interaction and meaningful communication of the issues through the content. The inclusion of strategy was important not only to afford opportunities for mastery and sense of accomplishment, but also for more critical thinking. Communicating the stories gathered from farmers within the constraints of sixty board spaces without trivializing them was a particularly difficult challenge.

### **Playtest Findings**

In the two weeks before meeting with farmers for the playtest in Rajgarh, unseasonable rain and hailstorms

devastated the wheat crops being harvested at that time. Farmers elsewhere in the region were staging 'chakka jams' on highways in protest of delayed relief payments and unsatisfactory crop loss surveys by the government. These were the kind of challenges we aimed to communicate in 'Bumper Crop'. However, asking the farmers to play a game at such a time of crisis did raise questions about what direct benefit such a medium could actually bring for them and how it could possibly capture the complex issues they face daily.

Nevertheless, the results surprised the research team and opened up new possibilities for the board game developed. Findings from evaluations with both urban young adults and farmers suggested that the game was effective at promoting learning about agricultural practices. While originally, not the target audience of the project, the following farmers' responses to questions in the evaluation about what they learned from playing the game reiterated the game's efficacy at promoting their own knowledge of farming: 'Learned what are the different things we can do for our farm with the money that we have'; 'I learned about the things which are needed for farming practices'; 'If children played from an early age, they would have a clear understanding from the beginning of their life how to be a good farmer'; 'Learned the right way of doing things and do tasks after applying one's mind'. Other responses to questions regarding their enjoyment of the game and its relevance to their lives indicated an identification with the game world: 'This game correlates with situation of farmers and gives us understanding how can we move ahead in those tough circumstances'; 'It's about my life, so I like it'; 'It relates to our life very much and all the upheavals that



**Figures 3, 4, 5.** 'Bumper Crop' game board and key cards containing spaces content.

come into our lives'; 'We have to pay for weddings and we run out of money, have to borrow from people'; 'Our crops are attacked by insects'.

As experts it provided them an opportunity safe from real consequences to practice and learn new strategies to overcome the challenges they face everyday. One particular comment recognized the immersive experience and the impact this has on motivation: 'While playing, I felt that it was really farming not just a game. So I took it seriously to play well'. Another recognized how the game promotes an integration of knowledge through doing: 'One can learn something from this game. When you do something, only then you can learn'.

Some spaces in the game were intentionally placed as dramatic pitfalls where a player may be close to winning, but then has to negotiate with other players to take out loans and sell off assets to continue playing. The social realism of these moments demotivated some urban players' engagement with the game, but was important for generating empathy. However, for farmers' their responses suggested that this narrative was important in promoting self-efficacy and influencing a sense of perseverance in their own lives: 'In real life if you lose something, don't be disheartened. Do not give up, but try a better strategy'.

These responses to the game suggest that it does more than represent issues of poverty and marginalization or provide instructional learning or received knowledge. The farmers' gameplay drew upon the participatory and dialogic advantages of digital gaming, revealing how game and games thinking can be employed to leverage the power of positive peer-to-peer identification and

feedback and to create engaging opportunities for learning and sharing 'storied knowledge' [1] and lived practices within fields of play.

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