Games for Development: Using the SGDA Framework to Assess Serious Games in ICTD

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Abstract: Serious games are intended to fulfill a purpose beyond the self-contained aim of the game itself. The emergence of serious games as tools for international development calls for the tools to evaluate these games from both game design and development perspectives. This poster examines two serious games designed to leverage awareness of conditions in developing communities for socio-economic development in Sub-Saharan Africa. Using the framework by Mitgutsch and Alvarado (2012), we conclude that Games for Development (G4D) are uniquely challenged to respond to the objectives associated with good game design and the practices of effective development.

Introduction

This poster identifies the application of serious games within ICTD research and practice as "Games for Development" (G4D). ICTD is the research and practice that focuses on the use of information-communication technologies (ICTs) to improve the quality of life of people in developing regions of the world (Heeks, 2009). This poster applies the Serious Game Design Assessment (SGDA) Framework (Mitgutsch & Alvarado, 2012) to two games specifically designed for international development in Sub-Saharan Africa: *Freerice* (Breen, 2007), and *Raise the Village* (Sasvari & MacMillan, 2010). The authors chose to analyze these specific G4D because of the developers' intention to use monetary investment from the games' framework for social and economic development in Sub-Saharan Africa. This analysis considers how each G4D addresses design elements in relation to the game's intended purpose within the SGDA Framework and also considers the potential challenges in meeting ICTD social and economic objectives through a game.

Effective G4D: The SGDA Framework

Although prior work has focused on serious game design and design strategies (Kankaanranta & Neittaanmäki, 2009), only recently has assessment of serious games become the focus (Mitgutsch & Alvarado, 2012). Mitgutsch and Alvarado (2012) offer a template for assessing serious games in *Serious Game Development (SGDA) Framework*, proposing seven components of the conceptual structure underlying an effective serious game: the game's Purpose, Content & Information, Mechanics, Fiction & Narrative, Aesthetics & Graphics, Framing and the Holistic Game System.

Assessing "Purpose" of G4D:

Freerice is a free online game developed in partnership with the United Nations World Food Programme (WFP). Its purpose is to "help end world hunger by providing rice to hungry people for free" and to "provide education to everyone for free" (Breen, 2013). *Freerice* players play quiz games, and for every correct answer, collaborating sponsors donate ten grains of rice through the United Nations WFP. *Raise the Village* (Sasvari & MacMillan, 2013) is a city-building game intended to "help the population of a poor village in Uganda" (Sasvari & MacMillan, 2013). Players build a virtual village and help "build" the real Ugandan village of Kapir Atiira through in-game donations.

Assessing "Content" in G4D:

Freerice draws its information about world hunger from the research and statistics on poverty and starvation provided by the United Nations WFP (Breen, 2013). The information presented fact-based and accessible. In contrast, *Raise the Village* only provides information about the specifics of the Kapir Atiira village, poor living conditions, and everyday struggles with poverty (Sasvari & MacMillan, 2013).

Assessing "Mechanics" in G4D:

The goal of *Freerice* is to gain the highest level and highest score one possibly can, which in turns provide the maximum amount of rice donated to the WFP. The reward system draws on multiple levels of intrinsic motivation, incorporating the "feel good by doing good" motivation as the player supports relief-aid while learning new

educational material. The goal of *Raise the Village* is for players to strategically build structures and balance beneficiary tradeoffs between items. However, neither game has an explicit "win-condition." The authors note the absence of a way to "win" reflects the complexity of socio-economic development problems addressed by the games.

Assessing "Fiction & Narrative" in G4D:

Due to the inherent quiz-nature of *Freerice*'s gameplay, the fictional context of the game remains limited. The fictional context behind *Raise the Village* is designed around the non-fictional setting of the Kapir Atiira village. Although the game allows players to interact with a fictional "virtual village," the game's surrounding context repeatedly links the virtual-village to the real community in Uganda, and characters within the village are modeled after real people in Kapir Atiira.

Assessing "Aesthetics & Graphics" in G4D:

Appropriate cultural representation in G4D must reflect real people in the real developing communities. *Raise the Village* displays digitized images of real people in the Kapir Atiira village. The use of these images raises question relating to personal identity protection, protection the rights of vulnerable populations (especially children), and informed consent. Further, this blurring and melding the real "site" (Nakamura, 2002) and the virtual "sight" (Nakamura, 2012) may tend to anchor the game player in a Western, and even colonial, perspective. In contrast, *Freerice* uses only "real" images of people in developing communities.

Assessing "Framing" in G4D:

As is true for entertainment-oriented games, it is important to balance the difficult levels and incitements for game replay in G4D. *Freerice*'s level of difficulty increases from level to level, which balances the appropriate level of play depending upon the player's play literacy, enabling gameplay to be challenging yet suitable for a variety of target audiences. In the case of *Raise the Village*, the game appears to be designed for experienced game players who are familiar with simulation-city based games and social-networking technology.

Assessing "Holistic Game System" in G4D:

Both *Freerice* and *Raise the Village* present a coherent and cohesive game system. *Freerice*'s framework is consistent with the content and core mechanics of the game. More could perhaps be done to utilize narrative to structure the learning experience of development issues for players. *Raise the Village* presents an environment for players to learn about the harrowing conditions and humanitarian crises through entertainment; these efforts can inform, and ultimately lead to an increased awareness and activism related to those crises.

Conclusion

Games for Development represent a potentially powerful and effective tool for achieving development objectives. Games' ability to immerse players in experience, to simulate entire worlds, and most importantly, engage and inspire broader audiences, offers an engaging vehicle for ICTD. However, G4D also pose unique challenges in both design and implementation of the design and technology. Future research is needed in order to assess whether G4D can truly engage and educate players about serious topics, and how G4D are interpreted and reified by people within and outside the developing communities.

References

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