The Little Doormaid: An Initial Literature Review Toward a Video Game About Mentoring, Social Innovation and Technology

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HAL Id: hal-01771302
https://inria.hal.science/hal-01771302

Submitted on 19 Apr 2018

The Little Doormaid: An initial Literature Review toward a Video Game about Mentoring, Social Innovation and Technology

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Abstract. The Little Doormaid is a fairy tale about mentoring, social innovation and technology. In order to shed light on the research questions of how to develop the fairy tale into a video game and how to evaluate the effect of the game experience for its audience, we run a preliminary literature review. This paper reviews related efforts that will guide the development and evaluation of the Little Doormaid game prototype. We report about an initial set of relevant papers and an initial organization of the literature according to trends, such as interactive fairy tale development, Video game design and play as a space of resistance, creativity and sociability; Crowdfunding for production; The learner/player experience; Designing for diversity by evaluating for diversity.

Keywords: Video Games· Mentoring· Social innovation· Technology· Gender· Women in Videogames· Crowdfunding· Literature review·

1 Introduction

The Little Doormaid is a story about technology, social innovation, and mentoring. This story, a modern fairy tale, has been presented in three workshops held with different demographics (one held with children age ten; one with immigrants recently arrived to Norway; and one with women) [10]. The purpose of this paper is to provide a preliminary literature review as part of the larger project of developing The Little Doormaid from a written story into a video game. The goal of this literature review is to identify research papers that may be used to answer either of the two research questions: 1. How could we develop this fairy tale into a video game? 2. How could we evaluate this video game?

2 Literature Review

The process started by searching Google Scholar using the following keywords: 'gender video games education' 'video games fairy tales' 'designing "inclusive video game" gender'. Searches were initially confined to results from 2012 or after, and were then repeated without that restriction. After establishing a narrower scope for the paper, further search terms were used: 'video games, technology, mentoring and social innovation.' This search was used to curate a bibliography of recommended

resources for the next phase of research and development for this project. The following trends emerge from an initial revision of the literature.
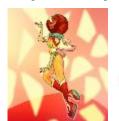

Fig. 1. Doory Mentor, Iva Aggressi, Sissi, and The Little Doormaid (Tappetina).

[17] reports about NeuroWander, an example of **interactive fairy tale** (Hansel and Gretel) development. NeuroWander utilizes a BCI interface with the objective to realize the principle: "think and make it happen without any physical touch". The interactive story implemented in [5] corresponds to a short story in the genre of swords and dragons.

Fisher and Jenson [6] posit digital game creation as a way in which **participants (girls) can be active in the construction** of their own subjectivities, leveraging different aspects of their identity and/or exercising an institutionally sanctioned (albeit temporary) autonomy to resist discursive positioning.' [3] explores the relation between gender and computer games. Christou et al. [4] proposes a framework for video game design and evaluation aimed at enhancing knowledge about the **creativity and sociability structures** they place into their online games

One new tool or space for resisting the gendered nature of digital gaming – both in the production of video games and in the games themselves – may be **crowdfunding**. Marom et al [13] investigated crowdfunding, as a new form of venture finance, that can reduce the barriers of female entrepreneurs to raise capital. [13] shows that both the gendered nature of technology development and the persistent (and false) perception of gamers as male contribute to a continuing lack of games designed for inclusion. Crowdfunding may then provide a significant alternative route for people seeking more diverse gaming experiences – both consumers-as-funders and game leads – to fund and produce games designed for inclusion.

Young et al [18] found that evidence supporting the positive impact of **the learner/player game experience** on student academic achievement was consistent. This finding was based on a thorough review of more than 300 articles and studies related to interactions between video games and academic achievement. De Lima et al [5] describe the creation and evaluation of an innovative system for creating interactive narrative storytelling, arguably a type of video game. The authors note that motivation for the project was partly based on the observed enrichment leant to online games by the mid- and post-game discussions held among players, discussions which 'gamers love' and which 'contribute to the culture of the game.' This study focuses on how integrating social media into a video games user interface can change the experience of the game for its players. This study sets a useful precedent for novel ways of involving learner/players in in-game storytelling. In the experimental game

created by De Lima et al, the nature and appearance of the world were essentially fixed, but the story as a "text" was uniquely open to interpretation and elaboration. The world and stock narratives created by De Lima et al were founded on "swords and sorcery" story-telling building blocks. The use of social media integration by De Lima et al was a deliberate attempt at accessing players' expectations and ease of discussing the game and collaborating socially.

Lacasa et al [12] investigate video games primarily in relation to how they contribute to the development of narrative thought. Their study employs gender as a context, but questions more deeply how mass media messages – specifically video games – 'create an environment that can teach people about the rules, attitudes, values and norms of society.' The main results of the study show that 'children's reconstructions of videogames stories are dependent on specific contexts; for example, whether they are re-elaborating the content of the game while they are playing it, writing a script some days later, or developing a web page.' This study's conclusions provide a useful answer to research question one: designing a game with interactive narrative elements that require or invite the player to contribute elaborations could make that game more engaging for a diverse audience and/or facilitate stronger positive outcomes for the game as a learning tool. Admiraal et al [1] hypothesized that although [digital] 'game-based learning is more acceptable to boys than to girls… game-based learning might improve the performance of both boys and girls, depending upon the instructional design.' On completion of the authors' experimental study, they found that, 'Analysis of covariance revealed that both boys and girls of the game intervention group showed a higher test performance, compared to students of the control group.'

Mora et al. [14] proposes a framework for developing interactive board games based on barcodes and RFID technology. To develop a game for learning starting from a game concept, one has to define the logic and rules, the interactions of the players with the game tokens, and the interaction among them as well as customization of the software libraries, production of objects that are not computerized, like the board and cases to tailor the appearance of tokens, e.g. using 3D-printing.

Prior research has established video games as effective pedagogical tools for Second Language Acquisition [1]. However, Rankin et al [15] found that 'few game studies evaluate the gameplay experience from foreign language students' perspective,' and 'even fewer game studies specifically examine women's perceptions of language learning video games.' To foster better understanding of how to **design for diversity by evaluating for diversity**, it is important that future educational games developers pay attention to learning outcomes and reception of the game environment among a diverse group of participants. Beltrán et al. [2] report about a social innovation project, called "No One Left Behind" that evaluates how the software Pocket Code can become as attractive as possible to different female teenager user groups. Becoming creators of their own programs will transform them from mere consumers to active creators.

There is clearly a need to go a step further and run a systematic literature review (SLR) shaped by our revised research questions and position our SLR with respect to

other reviews, like [8], [11], and [18].

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