Adding Peer Interaction to Reading, Web-Based Ebooks with Computer Games

Glenn Gordon Smith
University of South Florida (United States)

Abstract

Recreational reading is vital for students’ educational and professional success (Share, 2008). Yet a literacy crisis has hit the Western world, in which recreational reading plummets starting in 6th grade (Mol & Bus, 2008). This decline of recreational reading may be caused by consumption of computer games and other digital media, which are more reactive than books and have a culture of social interaction. One possible solution is web-based eBooks, combining narrative text and computer games (IMapBooks) developed by Dr. Glenn Smith.

IMapBooks have been used as a research tool, for studies in three countries on areas other than literacy. This study investigates how web-based eBooks with computer games affect sixth graders’ attitudes towards recreational reading. Since peer social interaction is important in middle school, we will also investigate how secure online social interaction to IMapBooks improves sixth graders attitudes towards reading.

1 Introduction

Although recreational reading is vital to reading skill development (Share, 2008), more than half of adolescents across Western industrialized countries do not read recreationally (OECD, 2010), resulting in a downward causal spiral of disinterest in reading, decreasing time spent reading, and a decline in reading skills (Mol & Bus, 2011). This diminishes individual academic and professional success (Gottfried, Schlackman, Gottfried, & Boutin-Martinez, 2015; Mol & Bus, 2011; Notten, 2011; OECD, 2010; Taylor, 2013), and degrades society as a whole. Recreational reading particularly plummets as students hit sixth grade (OECD, 2010). There are numerous projects, studies and evaluations of interactive books for pre-readers, and early elementary grades (Takacs et al., 2016). However, there are very few for middle school students, the very population where recreational reading is first plummeting (Takacs et al., 2016).

My research investigates reviving recreational reading in middle school, by re-inventing the book with a technology called “IMapBooks”, which embeds computer games in cloud-based eBooks, for middle-school readers. In IMapBooks, students read pages of narrative text and then come to a computer game that assesses comprehension of the prior text. Readers cannot win the game without comprehending the preceding text, but cannot continue reading the story without winning the game.

Our rationale for embedding games in cloud-based eBooks is based on the hypothesis that the decline in recreational reading is partially caused by middle school children’s growing interest in digital media (computer games and social media), which displaces recreational consumption of traditional hardcopy books. One reason may be that computer games are highly reactive, and provide immediate challenges with clear-cut feedback on progress towards goals & winning. Reading narrative text is an act of imagination and also provides cognitive challenges, including constructing a mental model (situation model) of what happens in the story, and changing the situation model to accommodate events in the text narrative (Zwaan & Radvansky, 1998). However, traditional books do not have the same reactiveness as current digital media. Therefore, we have integrated computer games into web-based eBooks (IMapBooks). In an early study, fifth graders liked text stories more and comprehended and retained spatial aspects (locations of characters and objects in stories) better with IMapBooks, than with traditional hardcopy versions of the stories with maps (Smith, 2012).

The decline in recreational reading, in middle school, coincides with a period where students increasingly build their identities on peer social interaction (Hodgson, 2006). Currently digital media support social interaction better than do traditional hardcopy books. However, it is a misconception that reading is exclusively solitary. Social interaction is a motivator for successful recreational readers (Knoestler, 2010), who discuss books they are reading, or tip other readers to read books, or get hints from other readers on what to read. Although silent reading certainly has great value (Ware, 2012), it is worth investigating whether a social frame around silent reading adds value.
Research Questions

RQ1. How can face-to-face, and online, social interaction surrounding eBooks with embedded games affect fifth grade children’s recreational reading and attitudes about reading?

RQ2. How can face-to-face social interaction surrounding eBooks inform the development and addition of online social interaction to eBooks with embedded games?

RQ3. How can the addition of online social interaction to eBooks, with embedded games, improve fifth grade school children’s attitudes about reading, a predictor for recreational reading?

RQ4: What kinds of social interactions do fifth grade school children engage in when chatting online while reading web-based eBooks with embedded computer games, and what are the functions of these interactions?

2 METHODOLOGY

Participants will be teachers and students in elementary school in 5th grade. Students will include students designated as gifted, as well as the non-gifted students with whom they are mainstreamed.

Procedure

Students (either individually or in groups of two-four) will read stories or chapters, and play games, in web-based eBooks with embedded computer games.

Stage 1: To investigate what kind of social interaction is appropriate to add to web-based eBooks with computer games, we will investigate students small group face-to-face interactions with the following: (1) teacher observation notes, (2) student surveys (using anonymized ids) and (3) teacher-led class discussion (student focus group).

Stage 2: Students will read sections of an eBook with embedded computer games and be able to chat with each other electronically while reading the eBook and playing the games, in a synchronous (students will be reading/playing at the same time) condition, i.e., students will be at computers within the same classroom. Teachers will monitor, for appropriateness, the students’ chat conversations on a screen that shows up to four groups of chats simultaneously. Researchers will code chat conversations according to functions of the communications.

REFERENCES


[13] Ware, R. J. (2013). Middle school students' perceptions of their interests in reading as defined by engagement and social interaction when using sustained silent reading (SSR) and peer interests reading strategies (PIRS). Dissertation Abstracts International Section A: Humanities and Social Sciences.


[16] A.A. Author, Book Title. City/State: Publisher, Year of Publication.

[17] A.A. Author, "Chapter Title" in Book Title (Editors eds.), pp.-pp., City/State: Publisher, Year of Publication.