CHAPTER 3

Literacy

Using Video Games for Literacy Acquisition and Studying Literate Practices

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Key Summary Points

1. There are four areas typically addressed within the broader concept of literacy and games: (1) educational games to teach reading and writing; (2) commercial, non-educational games that instructors use for literacy acquisition; (3) commercial, non-educational games that unintentionally provide literacy practice; and (4) educational and non-educational video games as literate practices.

2. Research provides evidence that both educational and non-educational video games can be used for literacy acquisition and instruction.

3. Literacy researchers view media such as video games as literate practices worthy of their own study.

Key Terms

Literacy
Reading
Writing
Literacy practices
Literacy acquisition
Educational video games
Commercial video games

Introduction

Since the mid- to late-1980s, there have been video games created with the sole intent of improving the literacy acquisition of its users. Literacy acquisition here refers to early acquisition (e.g., phonemic awareness, an understanding of spoken language), advanced practices (e.g., formal writing), and even second language acquisition. Gee (2003) provided perhaps the strongest impetus for educators to explore the connection between video games and literacy. He developed principles associated with video games that could be applied to students' literacy learning, such as active engagement, motivation in literacy tasks, and exploration of discourse and affinity groups. For Gee, these principles existed in video game use and could also be applied in rethinking literacy acquisition and instruction.

Since then, a number of educators have begun to explore how video games can be used in the literacy classroom. There are four main ways to understand the relationship between video games and literacy. The first way is through literacy acquisition. Educators and video game designers have developed video games directly aimed at teaching students to read. These games, such as *Reader Rabbit* (1986) or *Smarty Ants* (2012) are specifically built to teach core reading concepts and developing reading skills in early readers. Concepts such as phonemic awareness, vocabulary, fluency, and comprehension are usually emphasized.

Second, educators have explored how concepts in commercial video games could be used to teach literacy concepts. The uses of commercial games here are pedagogically intentional with literacy teachers having specific rationales for using these particular video games in literacy classrooms. While these video games were not created solely for educational purposes, educators can conceptualize how the principles associated with video games are related to literacy acts. Literacy teachers view these games as a way to engage students in literacy practices while teaching specific concepts central to reading and writing. An example would include students creating characters in *The Sims* (2000) and then writing about those characters.

A third connection also relates to commercial games. The focus here, however, is not pedagogical. Researchers want to study commercial games for the purpose of understanding literacy outcomes without intentionally assigning the games in a learning environment. For instance, educators and researchers might be interested in how players in *World of Warcraft* (2004) are using reading, writing, and communication skills to interact with other players. Researchers and educators in these cases are simply interested in what is being gained by players who play without a pedagogical set of instructions surrounding the gameplay (Steinkuehler, 2008).

A fourth relationship between literacy and video games relates to an exploration of video games as literacy practices. Walsh (2010) acknowledges that researchers have used terms, such as "procedural literacy" (Bogost, 2007), "gaming literacies" (Salen, 2007), and "gaming literacy" (Zimmerman, 2008); however, Walsh uses the term, "systems-based literacy practices" defined as "an understanding of how to configure the machine or device the digital game is played on, in addition to knowing how to play the

game and having the knowledge of where to find information that allows a better understanding of the system (game, program, virtual world, etc.) itself" (p. 27).

It is important for anyone exploring the notion of video games and literacy to first understand the purpose of the examination. These four relationships are summarized in Table 1 and provide an examination of the specific conditions necessary for literacy learning through video games. These relationships also provide insight into how researchers define literacy: whether it is viewed as a skill-set or a broader view of literacy as multimodal practice.

Table 1. The relationship between video games and literacy

Relationship between Video games and Literacy	**Example**
1. The pedagogical use of literacy games to improve reading, writing and speaking skills.	A teacher uses Reader Rabbit to attempt to improve reading scores.
2. The pedagogical use of non-literacy games to improve reading, writing, and speaking skills.	A teacher uses *The Sims* (2000) to have students write fan fiction.
3. Studying the existing use of non-literacy games to explore literacy practices of users.	An educator or researcher studies writing abilities and/or changes over time of *World of Warcraft* players.
4. Studying video game use and design as literate practices.	Researchers and educators explore tutorial gameplay within *Lego Star Wars: The Video Game* (2005) as negotiations of existing novice and expert practices.

Case Study One: *Writing Pal*

Writing Pal, an intelligent tutoring system, is directed by Danielle McNamara at Arizona State University's Learning Science Institute. This system explores how students acquire and develop writing skills. *Writing Pal* uses videos to introduce students to various writing strategies that facilitate learning across the writing process (e.g., brainstorming, drafting, revising). Students can engage in eight writing strategy modules, which have puzzles and competitive elements, as well as narrative elements, such as role-playing. *Writing Pal* also has options for students to engage in game-based strategy practice of their rhetorical writing skills. The essay tools provide automatic feedback and students' scores. For example, one of the games included in *Writing Pal* is *Adventurer's Loot*, which helps students practice paraphrasing strategies by examining word choice, combining sentences and fixing run-on sentences (Roscoe, Brandon, Snow, & McNamara, 2013). Students become a treasure hunter and are given clues to decipher. Students earn treasures if they answer correctly, whereas a monster appears if they answer incorrectly.

Roscoe et al. (2013) explored the influence of *Writing Pal* on adolescents' persuasive writing. Of the 65 students involved in the study, 33 engaged in *Writing Pal* and 32 students were in the condition group, which only had students interact with the essay and feedback tools within the game.

Writing strategies, such as how to write an introduction, body paragraphs, concluding paragraphs, and revision strategies were embedded within the game. Students' knowledge was measured through a pre-post writing strategy open-ended questionnaire, measures of writing, reading comprehension, vocabulary, and attitudes toward writing. Students who participated in the *Writing Pal* condition accumulated a greater number of new strategy concepts. Students also expressed enjoying the games, finding the games helpful, and rated the graphics as appealing. Overall, Roscoe et al. (2013) found that *Writing Pal* provided students with clear goals for their writing and motivation to achieve these goals. Students playing *Writing Pal* also learned more new writing strategies than those adolescents who wrote and revised their essays with feedback only.

While this study took place on a university campus in a laboratory setting, Roscoe et al. (2013) note that further research will take place in high school English language arts classrooms and will be used for longer periods of times, over the course of semesters or entire school years. Exploring student interactions with games in authentic classroom settings is important to understanding how educational games could benefit teaching and learning. Roscoe et al. (2013) contend that future research should continue to explore the many potential advantages of designing educational games to motivate and engage students in learning content, specifically writing. The authors also state that future research could examine how an increase in graphics, music, and other features might further engage students in educational games. This study is an example of an educational game created with the sole intent of improving literacy scores.

Key Frameworks

There are two key theoretical perspectives that deserve attention: new literacies and Gee's conceptions of cognitive learning with video games. Historically, literacy was defined as the acts of reading and writing and the cognitive processes that followed. New technologies have redefined literacy practices, however. Leu, Kinzer, Coiro, & Cammack (2004), defined new literacies for the 21st century as:

> The skills, strategies, and dispositions necessary to successfully use and adapt to the rapidly changing information and communication technologies and contexts that continuously emerge in our world and influence all areas of our personal and professional lives. These new literacies allow us to use the Internet and other ICTs to identify important questions, locate information, critically evaluate the usefulness of that information, synthesize information to answer those questions, and then communicate the answers to others.
> (Leu et al., 2004, p. 1572)

The concept of new literacies broadens our perspectives and definitions of literacy. In turn, it helps us explore technologies such as video games for multiple purposes. At the basic level, it is possible to understand video games for using and potentially improving core literacy skills like reading, writing and communicating. At a more enhanced level, we can also begin to explore video games as literate practices in and of themselves. We can begin to ask questions about the literacy practices of novice vs. expert gamers, and we can also explore transfer among multiple literate environments (e.g., games, work, home, classroom).

A second important framework comes from Gee's work on games. In his *What Video Games Have to Teach Us About Learning and Literacy* (2003), Gee explored the cognitive learning that occurs during video games and then explored how 36 learning principles could be applied to the learning of reading and writing. He specifically explores principles such as:

1. **Semiotic domains:** Gee makes the case for games and places where learning occurs. He contends that video games are semiotic domains, much like other activities in life (and as argued by those interested in new literacies).
2. **Learning and identity:** Identity here relates to the fact that games allow the development of an identity, but that games also allow you to identify with the game environment.
3. **Situated meaning and learning:** Like real life, games allow an exploration of a world. You can learn things about your world as you interact with it and the characters it contains.
4. **Telling and doing:** As pedagogical research has demonstrated, giving users opportunities to learn by doing, including making mistakes, provides more enhanced learning then just talking or discussion.
5. **Cultural models:** Games have implicit and explicit models and views of the world. They can embed cultural practices and norms as well as question those practices.

6. **The social mind:** The focus here is on the value of multiplayer and peer learning environments. Unlike many of our school practices, which are individualistic, these literacy practices are social connected and networked.

The theoretical perspectives presented here make a strong case that literacy acquisition, albeit intentional or unintentional and through educational or commercial games, can occur through video gameplay and video gameplay itself is a literate practice that is worth of study.

Case Study Two: MMORPGs for Language Learning

Kongmee et al. (2011) conducted a study of massive multiplayer online role-playing games (MMORPGs) and their potential for language learning. The multiplayer games selected by the authors for evaluation and those chosen by students were all commercial off-the-shelf games, or were intended for entertainment rather than solely for educational purposes. "Three MMORPGs were used in the study: *Godswar Online* (GO), *Hello Kitty Online* (HKO), and *Asda Story* (AS)" (p. 4).

The authors selected MMORPGs as a subject of study because they hypothesized that Internet-based games, such as MMORPGs, offered an opportunity to provide alternative social interaction to support language learning. These games provided tasks for players, which by their very nature, required interaction with others. Finally, because the objectives and challenges within a game are often repetitive, they believed the games would provide repeated practice on tasks within a motivating environment.

The researchers invited eight undergraduate students in a Thai university to participate. They introduced the MMORPGs and then watched the students' progress through both recorded sessions and by playing along with the character in the virtual worlds. The participants were then given various tests before, during, and after the MMORPG experiences.

The authors provided evidence in their study that learners who participated in a game-based environment produced positive achievements in reading, vocabulary, conversational relevance, writing, and public speaking. This was documented through a virtual ethnography measured with the support of screen recorders; however, participants also grew in their pre- and post-test scores on an *ELLIS Placement Test*. The authors conclude:

> The findings demonstrate that MMORPGs can successfully support language learning as illustrated by the improvements in the standard language tests and the participation and progression in the game itself. The students became more active in using English, showing greater patience in reading, being more motivated to write and also to produce dialogue when speaking and chatting.
> (Kongmee et al., 2011, p. 10.)

The authors attribute this growth to the authentic game environment and its ability to motivate players. This is not to suggest this literacy achievement could only be accomplished through MMORPGs. The fact that learning occurred naturally in an enjoyable situation, however, provided an impetus for continued participation from the students. This study is an example of how commercial games, which were not created with the sole intent of improving literacy scores, could be used pedagogically to achieve desired outcomes.

Key Findings

This section reports researchers' findings as they explore the links between video games and literacy. The findings below represent the four ways in which literacy and games intertwine:

1. The use of educational games for literacy acquisition;
2. The intentional use of commercial games for literacy acquisition;
3. The study of unintended literacy practices in commercial games; and
4. Games as literate practices.

Educational games created to teach literacy

There are researchers and educators committed to creating video games specifically to advance students' reading and writing knowledge. These games are created for educational has suggested that educational games can improve literacy achievement (Calfee, Pearson, & Callahan, 2012; Rosas et al., 2003).

For example, *Smarty Ants* (Calfee et al., 2012) was created to engage elementary-aged students in effective reading instruction, incorporating the National Reading Panel's defined components of reading instruction including, phonemic awareness, phonics, vocabulary, fluency, and reading comprehension. In this video game, students' literacy skills are initially assessed. Students then engage in series of activities based on phonological awareness and literacy acquisition skills. In the preliminary data analysis, researchers found kindergarten students' engaged in *Smarty Ants* had higher gain in reading achievement scores on the CORE Phonics survey than students in control classrooms. In addition, the teachers reported *Smarty Ants* was successfully implemented into their literacy instruction. They noted that the program allowed their literacy instruction to be personalized and targeted, as students could work at their own pace. Teachers self-reported that it seemed students were motivated and engaged in the video game.

Similarly, Rosas et al. (2003) examined five research-designed educational video games using the platform of Nintendo's Gameboy in the context of economically disadvantaged schools in Chile. The five video games were *Magalu, Hermes, Tiki-Tiki, Roli, and Hangman*. A total of 1274 students were

placed in an experimental group, an internal control group, or an external control group. Students in the experimental groups played video games over a three-month period for an average of 30 hours, the students in the internal control group were in the same school as the experiment group, but did not play video games, and the external control group was in schools without any access to the experiment. Rosas et al. (2003) found significant differences between the experimental groups and internal controls groups in terms of reading comprehension, as compared to the external control groups. Researchers reported that students were motivated and wanted to play the video games not only during class, but also during free time during the day. Also, both the teachers and students had a quick appropriation of the video game, so it was easily incorporated in the classroom. These factors could have contributed to the finding.

These studies suggest that students' literacy skills increase when engaged with the specific educational video games employed. While there are significant numbers and varieties of educational games that aim to support literacy learning, there is still research needed that explicitly shows the benefits to students using these games for literacy skills acquisition.

Commercial games to intentionally teach literacy

Educators have begun exploring how commercial video games could be used to teach reading and writing. In the studies featured in this section, the intended design of the video game was for entertainment and commercial purposes. Educational researchers have documented how students' engagement in games—whether playing them in their personal lives or in the classroom—can be used as a scaffold for developing writing practices. For example, through playing and referencing commercial games, teachers can help students connect their knowledge of games to new knowledge about reading and writing. deWinter & Vie (2008) highlight how *Second Life* can be used in composition courses to explore narrative writing through creating avatars and interacting with others in a virtual world. Through these experiences students can consider the complexities of the term "identity," including what it means to have a writerly or literate identity. deWinter & Vie (2008) also contend that *Second Life* provides composition teachers with opportunities to engage students in discussions about ethics, power, and critical media literacy.

Similarly, Gerber & Price (2011) explored how games could serve as a platform for writing instruction in a variety of genres. The authors link traditional print-based genres to concepts in video games. For example, Gerber & Price argue that "walk-throughs" in video games are actually expository texts; therefore, students could learn the features of expository writing by composing their own walkthroughs for their favorite video games.

The key findings from these studies suggest that educators can use commercial games to teach particular literacy skills. Specifically, researchers have explored how video games can serve as a catalyst for writing instruction, particularly narrative writing. Video games are often based on fictional worlds and characters players design, a creative process that is similar with aspects narrative writing.

Unintended literacy outcomes of commercial game use

A third realm focuses on the examination of literacy practices within gameplay where no pedagogical instruction is provided. One of the main outcomes in this area is that game players will engage in literate practices on their own without the need for instruction to do so. Gumulak & Webber (2011) interviewed 28 young adults (24 males and four females) who regularly play video games such as *Grand Theft Auto, Call of Duty,* and *Resident Evil*. While players reported a number of benefits, such as awareness of problem-solving skills, they also noted that they were engaged in the paratexts, or supporting materials, which surround the game. Gumulak & Webber found that 80% of the young adults read reviews about the games. Young adults also reported a connection between books they enjoy reading and the games they enjoy playing. For instance, one of the participants self-reported that his reading skills increased because of his use of video games; however, this claim was not further measured or validated by the investigators.

Studies like this suggest that the act of playing a video game engages students in literacy practices and may influence their literacy habits even if the game was not played in an educational setting or with the specific intent of literacy acquisition.

Video games as literate practices

Finally, researchers have begun to explore how video games can be conceptualized as literate practices. Steinkuehler (2007) argues that video games "are not replaying literacy activities but rather are literacy activities" (p. 298). She surveyed the literacy practices associated with Massively Multiplayer Online (MMO) games and the paratexts that support players. Steinkuehler examined two notions of literacy: first, as a set of cognitive processes and skills and second, as more contemporary definitions of literacy being plural, situated, meaning-making activities. From both of these stances, Steinkuehler argued that MMOs are very much literacy practices. Players must read significant amounts of texts in the video game, as well as engage in blogs, websites, fan fiction, fan websites, and discussion boards.

In the classroom, Beavis & O'Mara (2010) presented case studies of two teachers who conceptualized literacy units with video games. The first teacher engaged students in close readings of images from video games, such as *Grand Theft Auto,* to conduct critical analyses. Their analyses led to the creation of multimodal compositions focused on an awareness of the games they play and their engagement with these games. The researchers found students

> frequently demonstrated their mastery of the review genre both in writing and in online multimodal form, a deep knowledge of specific games and the gaming environment, and the capacity to anticipate what new players would need to know, while also assuming a shared degree of internet savviness and knowledge. (Beavis & O'Mara, 2010, p. 67)

The second teacher, featured in Beavis & O'Mara's (2010) article, had students create games using *GameMaker*. Students relied on genre knowledge and narrative plotlines to design and construct video games. Students then engaged in peer-review to provide each other with feedback about their games. The two case studies revealed that the analysis of video games and engagement in the creation of video games allowed students to practice metacognitive tasks related to how video games are conceptualized and their personal engagement in video games. Teachers can draw on students' current knowledge about video games to help them connect to knowledge about writing. These case studies also represent examples of how video games become their own literate practices worthy of study. Video games have an entire literate practice that surrounds them as many players read and write paratexts, such as reviews, websites, cheats, walk-throughs, and discussion forums. Players are not just engaging with those pieces of texts, but also thinking deeply about how that information influences their future gameplay.

Case Study Three: *World of Warcraft*

Steinkuehler & Duncan's (2008) study documents and assesses the specific literacy practices within *World of Warcraft* by analyzing a random sample of approximately two thousand discussion posts on the "priest forum" on the official website. Specifically assessing "scientific habits of mind" (Steinkeuhler & Duncan, 2008, p. 532) the researchers used benchmarks from the American Association for the Advancement of Science (1993), Chinn & Malhotra's (2002) theoretical framework for evaluating inquiry tasks, and Kuhn's (1992) epistemological framework.

Steinkuehler & Duncan found that participants who play *World of Warcraft* and engage on discussion forums participate in social knowledge construction and argumentation. When analyzing the discussion forums, 86% of the "talk" could be considered social knowledge construction in that participants were sharing knowledge and discussing to solve problems. Participants also engaged in scientific argumentation by proposing theories and engage in a questioning and response type discussion. The authors also found that 58% of the *World of Warcraft* forum posts also displayed systems-based reasoning, while one-tenth of forum posts revealed model-based reasoning. The study found, "forms of inquiry within play contexts such as these are authentic although synthetic: even though the worlds themselves are fantasy, the knowledge building communities around them are quite real" (Steinkeuler & Duncan, 2008, p. 541).

Steinkuehler & Duncan have three implications for their work. First, they acknowledge that certain schools or educators might not see the benefits of games and the gaming culture. They hope research of this type might begin to break down those barriers. Second, they ask, who are the people engaged in this play and what resources do they have? Steinkuehler & Duncan emphasize that the digital divide might not be solely between the "have and have-nots," but the "do and do-nots" (542). This means that the digital divide might not only be between people who have access to technology and those who do not, but also those people who have access to technology, yet do not play video games. Finally, they

acknowledge that exploring video games as literate practices can bridge spaces between home and school practices. Engaging in video games at home, as well as school, might not only provide access to technology some may not have, but it also might encourage those who might not normally play video games to play them.

This study is an example of two uses of commercial video games. First, it is an examination of the use of a commercial game that has produced literate outcomes without direct pedagogical intervention. Second, it is an example of a commercial game whose play itself becomes a literate practice worthy of study.

Assessment

What does it mean to assess video games as literate practices? Theoretical perspectives can help researchers examine how video games are constructed and how players enact literacy practices through engagement in video games. Educators can also assess video games and literacy by exploring how certain principles innate to games can be applied to reading and writing practice. There are four main ways to assess the connection between video games and literacy:

1. Assess how video games, produced specifically for educational purposes, advance students' learning of reading and writing; pre- and post-test measures can examine students' before and after participating in video games.
2. Assess how literacy educators are integrating video games into reading and writing classrooms; focus on examining the differences in outcomes based on games created for educational purposes and games created for commercial use, but used in an educational setting; examine the conditions necessary for literacy learning through playing video games.
3. Assess the intended and unintended consequences of engaging students in video games in literacy classrooms; focus on the contexts in which games are played and how playing games outside of the classroom might engage students in meaningful literacy practices; this would also include examining how the curriculum might bridge students' in-school and out-of-school literacy practices.
4. Assess the impact of commercial video game use on traditional literacy outcomes and any literate practices of users who play in out-of-school settings (such as at home).

Future Directions

Advances in technological tools are changing the nature of reading and writing. Young adult literature is moving from solely print-based books to multiplatform books encompassing images, videos, and audio. Digital writing and multimodal composition are changing how we understand and define writing. These advances have led educators to conceptualize and recognize video games as literary

practices and have led to discussions about how the principles associated with video games could be applied to reading and writing instruction. As educators consider and redefine the notions of what it means to be a "reader" and "writer," they will need to learn effective instructional approaches for incorporating video games into the literacy curriculum. Researchers can continue to explore teachers' instructional decision-making regarding using video games in the classroom. Future work could explore how teachers decide the appropriate game to include in the curriculum and the question of whether video games should be implemented in ways that just replace traditional print-based activities, and the extent to which they are transforming educational practices. For example, how do video games create opportunities for cooperative and collaborative literacy learning, which traditional methods may not do as effectively, or may do differently?

The inclusion of video games into the classroom also brings up questions of access and power. More research is needed on the affordances, limitations, potentials, and constraints of using video games in reading and writing classrooms. Who are the teachers implementing video games in their classrooms and what are the challenges they face? Educators can explore the effect of parents and administrator's support or lack of support when in using video games for instructional purposes. Finally, as technological tools, such as haptics or tools applying motion or vibrations to engage participants' sense of touch, are becoming more advanced, educators will also have to consider how technology associated with video games might influence the ways we teach students to read and write.

Case Study Four: Understanding the Potential of Language-Learning with Mentira (written by Liz Jasko)

Today's language-learning games cover a diverse range of purposes, scopes, and applications. This holds especially true in the mobile sphere, where highly accessible casual mobile games such as *MindSnacks, Rosetta Stone Arcade Academy,* and *Duolingo* offer interactive, autonomous learning experiences to help any average person pursue a variety of language choices. These games tend to primarily focus on vocabulary and basic sentence structure, utilizing engaging ways to effectively achieve interest and retention. While the presence of such commercial games continues to grow, second language acquisition (SLA) researchers and teachers seek more complex, sophisticated ways to elevate foreign language classroom instruction through the use of games.

Chris Holden and Julia Sykes are among the pioneering effort behind *Mentira*—a place-based mobile language-learning game. The game was designed locally at the University of New Mexico, Albuquerque to be constructively integrated with a Spanish 202 course over a period of four weeks. This story-driven game presents a murder mystery plot that requires players to identify with a virtual family identity, seek clues through dialogue with non-playing characters (NPCs), and collaborate with other students to solve a mystery. The story unfolds in a real, nearby Spanish-speaking neighborhood, requiring both interacting in Spanish and physically visiting the town to find clues. Students are first introduced to it

in the classroom, and are either provided phones or use their own devices to collaboratively advance through the story in the classroom, at home, and ultimately in the town where the story takes place (Holden & Skyes, 2011a). It was built with the ARIS engine—a technology that uses GPS to create a hybrid world of virtual interactive characters, items, and media placed in physical space (Holden & Skyes, 2011b).

Over several years of designing, iterating, and evaluating *Mentira* based on its experimental use as a real component of classroom curriculum, Holden & Skyes emphasize the following goals and outcomes in their publication, *Prototyping Language-Based Locative Gameplay* (Holden & Skyes, 2011a).

1. **Situated language learning** extends the subject of Spanish out of the classroom and into a nearby Spanish-speaking community, accomplishing the notion that "since knowledge occurs in conjunction with context, the learning process should be tied to a meaningful situation" (Schrier, 2005). Holden & Skyes (2011a) found this to be true, since the most well received aspect of the game integration was at the end, when students took a field trip to finally use the augmented reality game in the actual town.
2. **Narrative** created a higher-level connection to the content. Holden & Skyes (2011a) formatted the game into a murder mystery based on historical fiction because it created authenticity and a real-world connection that still allowed them flexibility to create the simple and direct goal of the game, which was solving a murder.
3. **Pragmatics-approach** attempts to address language learning in the context of "critical learning"—when learning is not just limited to understanding meaning in a particular realm, but also invites the reproduction and active use of the learning (Gee, 2003). Holden & Skyes explain, "Instead of revolving around the assimilation of vocabulary, the conversations work in terms of pragmatics: knowing the social setting and acting appropriately" (2011a, p. 119). They accomplish this by integrating a fair amount of vocabulary unfamiliar to the students, and by structuring the conversations of different NPC family identities to require specific ways of social interaction, such as programming NPCs to withhold important information for advancing through the murder mystery if the student speaks to them in a rude tone. Where the game falls short is the way in which these dialogues take place through *Mass Effect* style textual multiple-choice responses. Instead, the use of voice, audio, and language construction could potentially be used, such as the voice communication with real players that drives Babbel's mobile language learning game, *PlaySay*.
4. **Task-based language teaching (TBLT) approach** also focuses the content predominantly on meaning and secondarily on form, as outlined by Purushotma, Thorne and Wheatley (Purushotma et al., 2009; Reinders, 2012). Ellis (2003) identifies the key components of TBLT as perspective, authenticity, language skill, cognitive processes and outcome—which are propelled in *Mentira* through the first three points. Rather than designing a game to learn things about a language, a game is designed to use a language as a means to achieving a goal.

5. **Collaborative play** is also executed through what Holden & Skyes (2011a) refer to as "jigsaws." The family identities assigned to each student behaved as a crucial constraint in the game, because no player was able to access the entirety of information. To move forward through the story, students had to collaborate to piece together the clues. Holden & Skyes (2011a) found, however, that the actual collaboration between students in the classroom was not naturally instigated and that it usually required the direct intervention of the teacher.

In addition to these key points, Holden & Skyes (2011a) emphasize:

1. The importance of iterating the design based on student feedback.
2. Maintaining continuity by using the mobile game over time and outside the classroom.
3. Promoting risk-taking by bringing students in a real-world setting to practice language.
4. Recognizing how the execution of the game matters and not just the vision.

Overall, they found that the behaviors they wanted *Mentira* to provoke, "playfulness, inventiveness, collaboration and risk-taking—the behaviors that did not manifest in the classroom—emerged spontaneously in surprising ways during the field trip portions of the game" (Holden & Skyes, 2011a, p. 125). Holden and Skyes continue to push the boundaries, incorporating the positive takeaways and addressing the weaker areas. While the scope of this experiment was limited in regards to platform and distribution, the potential for future development based around this concept is immense.

Resources

Articles

Alberti, J. (2008). The game of reading and writing: How video games reframe our understanding of literacy. *Computers & Composition,* 25(3), 258-269.

Apperley, T. (2010). What game studies can teach us about video games in the English and literacy classroom. *Australian Journal of Language & Literacy,* 33(1), 12-23.

Bradford, C. (2010). Looking for my corpse: Video games and player positioning. *Australian Journal of Language & Literacy, 33*(1), 54-64.

Gee, J., Levine, M. H. (2009). Welcome to our virtual worlds. *Educational Leadership,* 66(6), 48-52.

Gumulak, S. & Webber, S. (2011). Playing video games: learning and information literacy. Aslib Proceedings: *New Information, 63*(2/3), 241-255.

Hui-Yin H. & Shiang-Kwei, W. (2010). Using gaming literacies to cultivate new literacies. *Simulation & Gaming*, 41(3), 400-417.

Hunter, R. (2011). Erasing "property lines": A collaborative notion of authorship and textual ownership on a fan wiki. *Computers & Composition, 28*(1), 40-56.

Leonard A., Meng-Tzu, C. Holmes, S. (2010). Assessing twenty-first century skills through a teacher created video game for high school biology students. *Research in Science & Technological Education, 28*(2), 101-114.

Meyers, E. M. (2009). Tip of the iceberg: Meaning, identity, and literacy in preteen virtual worlds. *Journal of Education for Library & Information Science, 50*(4), 226-236.

Miller, M. & Hegelheimer, V. (2006). The SIMs meet ESL: Incorporating authentic computer simulation games into the language classroom. Interactive Technology and Smart Education, (2006), 311-328.

Ranalli, J. (2008). Learning English with The Sims: Exploiting authentic computer simulation games for L2 learning. *Computer Assisted Language Learning, 21*(5), 441-455.

Robison, A J. (2008). The Design is the game: Writing games, teaching writing. *Computers & Composition, 25*(3), 359-370.

Schrader, P. & McCreery, M. (2008). The acquisition of skill and expertise in massively multiplayer online games. *Educational Technology Research & Development, 56*(5/6), 557-574.

Sewell, W. & Denton, S. (2011). Multimodal literacies in the secondary English classroom. *English Journal, 100* (5) 61-65.

Smith, G. G., Li, M., Drobisz, J., Park, H. R., Kim, D., & Smith, S. D. (2013). Play games or study? Computer games in eBooks to learn English vocabulary. *Computers & Education, 69,* 274-286.

Steinkuehler, C. (2010). Video games and digital literacies. *Journal of Adolescent & Adult Literacy, 54*(1) 61-63.

Steinkuehler, C. & Duncan, S. (2008). Scientific habits of mind in virtual worlds. *Journal of Science Education Technology, 17*(6), 530-543.

Thorne, S. L., Fischer, I., & Lu, X. (2012). The semiotic ecology and linguistic complexity of an online game world. *ReCALL, 24*(3), 279-301.

Wohlwend, K. E. (2009). Early adopters: Playing new literacies and pretending new technologies in print-centric classrooms. *Journal of Early Childhood Literacy, 9* (2), 117-140.

Games/Simulations

Book Worm (https://www.nintendo.com/games/detail/PPPdYw-fw9kLv55iYhT5Llgo6XxFQRGQ)
Grand Theft Auto (http://www.rockstargames.com/grandtheftauto/)
Mentira (http://www.mentira.org/)
Playtime Theatre (https://itunes.apple.com/us/app/playtime-theater/id411289693?mt=8)
SimCity (https://www.facebook.com/SimCity)
Smarty Ants (http://www.smartyants.com/)
Storybook Workshop (https://www.nintendo.com/games/detail/8P8tfzT9FHjnkyhfreEvpnnKpxtngOvO)
World of Warcraft (http://us.battle.net/wow/en/)
Writing Pal (http://129.219.222.66/Publish/projectsitewpal.html)

Websites

ABCya (http://www.abcya.com/)
ICT Games (http://www.ictgames.com/literacy.html)
Literacy Sites Literacy Games (http://www.literacysites.com/litgames.htm)
PBS Kids Reading Games (http://pbskids.org/games/reading/)
The Dictionary Project (http://www.dictionaryproject.org/resources/word-games-puzzles-and-interactive-literacy-games)

References

Beavis, C. & O'Mara, J. (2010). Computer games—pushing at the boundaries of literacy. *Australian Journal of Language & Literacy, 33*(1), 65-76.

Bogost, I. (2007). Persuasive games: *The expressive power of digital games.* Cambridge: MIT Press.

Brake, D. (2008). Shaping the 'me' in *MySpace*: The framing of profiles on a social network site. In K. Lundby (Ed.), *Digital Storytelling, Mediatized Stories: Self-Representations in New Media* (pp. 285–300). New York: Peter Lang Publishing.

Calfee, R., Pearson, P.D. & Callahan, M. (2012). *Smarty Ants*. Retrieved from, http://www.smartyants.com/research/research-reports

deWinter, J., & Vie, S. (2008). Press enter to "say": Using *Second Life* to teach critical media literacy. *Computers & Composition, 25*(3) 313-322.

Eleá, I. (2011). Fanfiction and webnovelas: The digital reading and writing of Brazilian Adolescent girls. *The Handbook of Gender, Sex and Media*, 24, 71-87.

Ellis, Rod. (2003). *Task-based Language Learning and Teaching.* Oxford: Oxford University Press.

Gee, J. P. (2003). *What video games have to teach us about learning and literacy.* New York: Palgrave Macmillan.

Gerber, H., & Price, D. (2011). Twenty-first century adolescents, writing, and new media: Meeting the challenge with game controllers and laptops. *English Journal, 101* (2), 68-73.

Holden, C, & Sykes, J. (2011a). *Mentira*: Prototyping language-based locative gameplay. S. Dikkers, J. Martin, & B. Coulter. (Eds.) *Mobile Media Learning: Amazing Uses of Mobile Devices for Learning.* Pittsburgh, PA: ETC Press, 112-129.

Holden, C., & Sykes, J. (2011b). Leveraging mobile games for place-based language learning. University of New Mexico, ARIS Games, 1-22. Accessed at: http://arisgames.org/wp-content/uploads/2011/04/Holden_Sykes_PROOF.pdf.

Kongmee, I., Strachan, R., Montgomery, C., & Pickard, A. (2011). Using massively multiplayer online role playing games (MMORPGs) to support second language learning: Action research in the real and virtual world. In: *2nd Annual IVERG Conference: Immersive technologies for Learning: virtual implementation, real outcomes, 27-28 June 2011.* Middlesborough, UK.

Leu, D. J., Kinzer, C. K., Coiro, J. L., & Cammack, D. W. (2004). Toward a theory of new literacies emerging from the Internet and other information and communication technologies. In R. B. Ruddell & N. J. Unrau (Eds.), *Theoretical Models and Processes of Reading* (5th ed.), pg. 1570. Newark, DE: International Reading Association.

Purushotma, R., Thorne, S., & Wheatley, J. (2009). "10 Key Principles for Designing Video Games for Foreign Language Learning."

Reinders, Hayo, ed. (2012), *Digital Games in Language-Learning and Teaching.* Houndsmills: Palgrave Macmillan.

Roscoe, R., Russell, B., Snow, E., & McNamara, D. (2013). Game-based writing strategy practice with the *Writing Pal.* In K.E. Pytash & R.E. Ferdig (Eds). *Exploring Technology for Writing and Writing Instruction.* IGI-Global; Hershey, PA.

Salen, K. (2007). Gaming literacies: A game study design in action. *Journal of Educational Multimedia and Hypermedia, 16*(3), 301-322.

Schrier, Karen. (2005). Revolutionizing history education: Using augmented reality games to teach histories. MIT Thesis, Accessed at: http://karenschrier.wordpress.com/publications/cms.mit.edu/research/theses/KarenSchrier2005.pdf

Steinkuehler, C. A. (2008). Cognition and literacy in massively multiplayer online games. *Handbook of research on new literacies. Mahwah NJ: Erlbaum*, 1-38.

Walsh, C. (2010). Systems-based literacy practices: Digital games research, gameplay and design. *Australian Journal of Language & Literacy, 33*(1), 24-40.

Zimmerman, E. (2008). *Gaming literacy: Design as a model for literacy in the 21st century.* Retrieved from http://ericzimmerman.com/files/texts/Chap_1_Zimmerman.pdf.