

Breaking the Boundaries of Texts: Video Game and Literacy Curriculum Development for English Language Learners

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This study documents the partnership between a public high school English as a Second Language (ESL) teacher and three doctoral students, all former secondary school teachers, who collaboratively created a literacy video game for an English Language Arts class for intermediate-level ESL students. Informed by second language learning researchers and practitioners, including Krashen (1989) and Cary (2000), the video game was positioned as a means to provide various entry points to curricular texts by virtue of its multimodal features, including visual, aural, and interactive. The game provided scaffolds for ELLs to negotiate new vocabulary and unfamiliar language structures as they read about bullying. Observations show that the students' active engagement in the video game and related curricular material provided them with a sense of ownership in terms of their learning (Norton & Toohey, 2012) as they explored authentic literature through a digital world. The hope is for other educators to apply this game development process and/or adapt the video game to their particular contexts. *Keywords:* educational technology, English language learners, English (second language), literacy, scaffolding (teaching technique), secondary education, video games

New digital technologies are transforming how students engage in learning in various contexts. Researchers are examining the ways in which digital tools cultivate critical thinking and collaboration while bolstering opportunities to develop both content knowledge and technical skills (Simkins & Schultz, 2010; Stephens, Lehr, Thorp, Ewing, & Hicks, 2005; Tiene & Luft, 2001; Windschitl & Sahl, 2002). An investigation of the generative relationship between new technologies and learning is particularly important in literacy classrooms, where new digital tools necessitate distinctive combinations and interpretations of literacy practices that integrate myriad cognitive processes and sociocultural practices (Elkins & Luke, 1999, p. 213). In particular, Gee (2010) has explored the connections between literacy and video games, arguing that critical and active engagement in video games "situates meaning in worlds of experience—the stuff out of which the human mind is made—that is ultimately shared, collaborative, social and cultural" (p. 189).

Building on this foundation, a public high school English as a Second Language (ESL) teacher and three doctoral students, all former secondary school teachers, formed a partnership to create a literacy game using Gamestar Mechanic (www.gamestarmechanic.com). The game, which was specifically created for an English Language Arts class only for intermediate-level ESL students, is based on learning objectives and content in a semester-long unit on bullying that also provided a platform on which students were able to practice literacy strategies: making predictions, text connections, and inferences (Singhal, 2001). Because high school English language learners (ELLs) are commonly expected to simultaneously study the content areas and the English language, the video game followed an approach that incorporated both content

and language objectives by focusing on the subject of bullying and literacy strategies (e.g., Echevarria, Vogt, & Short, 2007; Schleppegrell, 2004). Informed by second language learning researchers and practitioners, including Krashen (1989) and Cary (2000), the video game was positioned as a means to provide various entry points to curricular texts using its multimodal features, including visual, aural, and interactive. The game provided scaffolds for ELLs to negotiate new vocabulary and unfamiliar language structures as they read about bullying. The high school ELLs in the focal classroom context played the game as part of their learning unit, after which the ESL teacher and her students shared their reflections and critiques of the video game. Observations show that the students' active engagement in the video game and related curricular material provided them with a sense of ownership in terms of their learning (Norton & Toohey, 2012) as they explored authentic literature through a digital world. The hope is for other educators to apply this game development process and/or adapt the video game to their particular contexts.

Local Educational Context

This study was part of an ongoing partnership between a public high school ESL teacher and three doctoral students, who collaboratively designed a video game for the teacher's students. More specifically, this game was created for use in two sections of an English Language Arts for ELLs class, in which 25 ELLs at the intermediate level completed an instructional unit in bullying. The students in this class were 14-21 years old and represented a variety of home languages (primarily Spanish, in addition to Georgian, Hebrew, and Korean). Although all of the students were designated as "intermediate" ESL learners, they demonstrated a range of learning strengths and needs across the two sections of the English Language Arts class.

In addition, the use of academic English was emphasized in the high school, and students were required to pass standardized state content-area exams in order to obtain a high school diploma. This high-stakes situation was particularly pressing for adolescent ELLs who had recently immigrated to the United States. Given these circumstances, the teacher aimed to design and implement lessons that were both meaningful and helpful in preparing students to achieve academically.

Collaborative Video Game and Curriculum Design

The design of our video game and curriculum entailed regular, ongoing conversations and negotiations between the classroom teacher and doctoral students, which occurred via email, telephone, and in person. We also created a shared document on Google Drive that each team member could add to and edit. These conversations served multiple purposes. First, the team members all shared a deep commitment to recognizing and valuing the "knowledge in practice" that K-12 teachers can offer to more traditional research paradigms in the academy (Cochran-Smith & Lytle, 2009). As such, we attempted to attend to issues of power and privilege that informed group interactions and to continually reflect upon our own goals and purposes in this work together.

In addition, these conversations allowed us to better understand the local instructional context of the ESL class. For example, the classroom teacher shared samples of students' work with the design team so that the video game could be tailored to the individual learning strengths and needs of students. Moreover, a key feature of the instructional practice was content-based ESL, a practice particularly emphasized at the secondary level, where ELLs are expected to simultaneously master both the English language and a particular set of subject matter (cf. Chamot, Dale, O'Malley, & Spanos, 1992; Echevarria et al., 2007; Schleppegrell, 2004; Wu, 1996). The content objective specified by the teacher related to the topic of bullying, focusing on an anti-bullying campaign led by an adolescent named Katy Butler, who was a victim of bullying. The language objectives, which focused on reading strategies, aimed for students to be able to make inferences, predictions, and connections based on an anti-bullying campaign email, an authentic text from Katy.

Gaming as a Literacy Practice

Our work draws on the idea that literacy teaching and learning “[includes] negotiating a multiplicity of discourses” (New London Group, 2000, p. 9). Given that U.S. schools are becoming increasingly diverse with substantial increases in the number of ELLs in K-12 schools (August & Shanahan, 2006; U.S. Department of Education, 2003), the understanding and scope of literacy pedagogy has been expanded to reflect our increasingly global societies (New London Group, 2000). We contend that this expansion of the concept of literacy includes playing video games as a form of literacy. In the context of the English Language Arts class, the students engaged the social issue of bullying by reading non-fiction print texts and by playing a video game featuring Katy Butler’s anti-bullying campaign. In this way, the students made meaning of the video game content by bringing meaning to it, in a manner analogous to reading traditional print text (Weaver, 1980).

At the most basic level, reading in a multiliteracies context may be understood as engaging with symbols. Video games—rich in visuals, audio, and interaction—are clearly symbiotic (Steinkuehler, 2010). In discussing literacy pedagogy in ESL contexts, Hawkins (1991) explained that literacy “only happens when the learners are actively engaged in interaction that gives meaning to the symbols with which they are working” (p. 178). This idea is echoed by Steinkuehler (2010), who suggests, “[Video games] are about a back and forth between reading the game’s meanings and writing back into them” (p. 61), similar to the argument that reading the written word is an active process (Weaver, 1980).

Accordingly, a video game may be viewed as a domain of knowledge, which is a set of activities and experiences that are “special ways of acting and interacting in ways that produce and use the domain’s knowledge” (Gee, 2005). According to Gee’s notion of “distributed authentic professionalism,” a video game player “is immersed in specific activities, values, and ways of seeing,” arguably much as a traditional “reader” might be when absorbed in a novel. In both situations, the reader must negotiate meaning; a gamer, however, is engaged in an embodied literacy in which he or she must assume the role of an avatar, actively navigate meaning in a virtual world, devise strategies, and make decisions regarding “explicit instructions given at the precise moment that they can be understood within a specific context of action” (Gee, 2005) to achieve the game’s objectives.

In our video game, the player began by orienting him or herself in a training session through which the features and rules of the game were introduced. This training session served as a model that guided learners to play the other three progressively higher levels of the game independently (Walqui, 2006). Students who needed additional support were able to partner with a classmate to play the game. Each level of the game began with a set of explicit instructions written in English, and the player needed to answer questions while journeying through each virtual world with the goal of meeting a determined endpoint. These questions required students to employ content-based knowledge as well as deliberate literacy strategies to proceed successfully in the game. In addition, the player performed the role of Katy, the adolescent leading the aforementioned anti-bullying campaign, who needed to collect signatures for her campaign. Our game challenged the player to explore and experiment with the different rules of the game, similar to how an ELL might interact with sentence structures and words in multiple ways and make meaning while learning a new language (Perez, 2004).



Figure 1. Screenshot of video game: The coins represent signatures to be collected for the anti-bullying campaign.

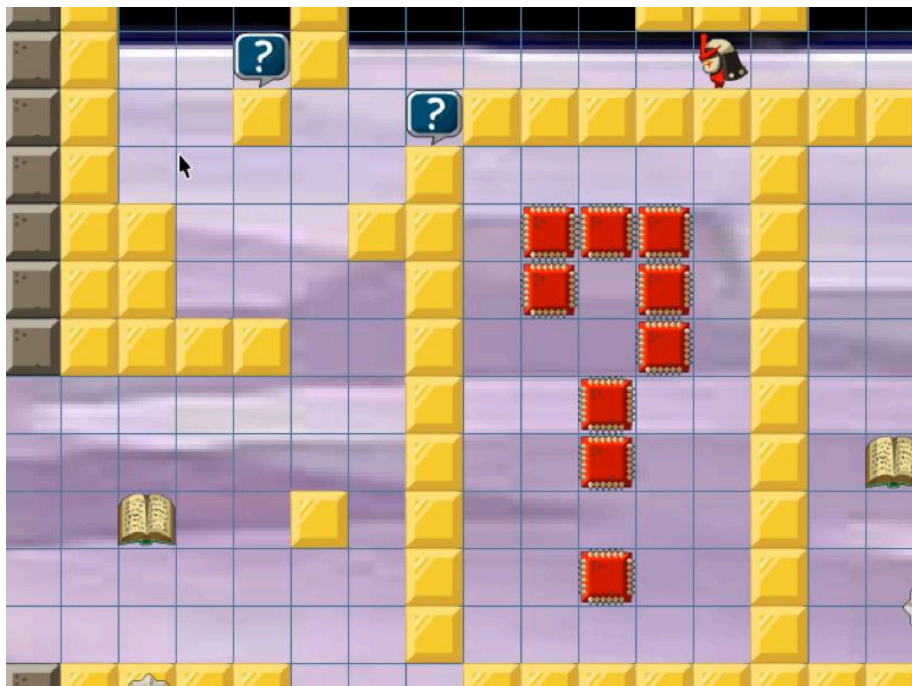


Figure 2. Screenshot of video game: The books contain questions that require specified reading strategies to answer.

Video Games as a Scaffold for Literacy and Content Learning

A major challenge in the field of teaching English to Speakers of Other Languages (TESOL) concerns guiding ELLs to becoming proficient in academic language. A commonly cited study by Cummins (1981)

suggests that ELLs may take 4 to 10 years to reach this proficiency. Secondary-level teachers, however, cannot wait for ELLs to become proficient in academic English before providing instruction in the content areas—instead, teachers must concomitantly include both content and language (Echevarria et al., 2007). Unlike non-ELL students, ELLs must navigate both learning another language and particular subject matter, highlighting the need for instructional scaffolds to help them access these two areas (Cary, 2000; Echevarria et al., 2007; Rubinstein-Avila, 2007). These scaffolds serve to mitigate the cognitive load associated with the demands of learning both a new language and new content.

In TESOL, a major goal of scaffolding—which takes many forms—is to provide ELLs with comprehensible input (Krashen & Terrell, 1983). Comprehensible input refers to “the understandable input that learners need for learning” (Gass & Selinker, 2001, p. 452). Research related to ELLs and various youth literacies point to the potential of video games and multimedia technology as a scaffold for school literacy (Black, 2005; Harushimana, 2008; Kasper, 2000). Our video game encompassed many elements regarded as effective forms of scaffolding in ESL contexts: visuals, video, movement, and role plays (Cary, 2000). Each element—for example, the visuals comprising the video game—complemented and provided students with access to the content and language of the instructional lesson (Herrell & Jordan, 2004).

Scaffolds were purposefully built into our video game. Because the video game was embedded within a complete learning unit plan, the students were able to build on prior knowledge in the focal content area in engaging in the video game. The students participated in various background building activities prior to playing the video game, including engaging in both print text and multimedia about bullying, to become familiar with the anti-bullying email campaign that they then read, thereby supporting reading comprehension (Carrell, 1983). While playing the game, students had opportunities to discuss strategies and various questions with a partner. Finally, the students discussed the written questions and responses embedded in the game after playing it. They also built upon their knowledge and interaction with the subject of bullying and associated language to participate in a discussion about the campaign email, prompted by open-ended questions requiring the use of reading strategies. As such, in addition to scaffolding the text folded into the video game, the video game served as a “linguistic bridge” (Gibbons, 2003) to the discussion based on the open-ended questions. These multi-layered “scaffolded interaction[s]”—with students, teachers, and the video game—helped the ELLs understand (written and oral) text (Hawkins, 1991).

Corresponding with this emphasis on interaction in language learning, in a recent review of the literature on gaming as related to academic achievement, Young et al. (2012) pointed out that the interactive nature of video games is conducive to language learning, which is “inherently social and relies on socially contextualized pedagogy” (p. 75), arguing that the immersive environment in gameplay mirrors a situation in which a language learner is immersed in a place where the language is regularly used to interact with others. We intentionally designed our video game to present information in English, immersing students in a digital environment where they practiced reading strategies to maneuver through each level of the game. In addition, the video game embraced and utilized “the social-environmental aspects of education” (Young et al., 2012), as evident in the observation that students paired up with their classmates to collaboratively play the game without the teacher’s prompting. Of special note was the observation that students who did not typically speak to each other in class chose to work together in playing the game. Furthermore, five students who typically were quiet and reserved were loud with excitement while playing the video game and took the initiative in seeking help from classmates who had progressed to higher levels in the game.

A Sense of Student Ownership and Agency in Language and Literacy Learning

The video game afforded a means for students to experience ownership over their learning and provided a venue where their agency emerged. Such a learning environment is especially important for ELLs, a traditionally minoritized and marginalized student population (e.g., Abedi & Gándara, 2006; Gitlin,

Buendia, & Doumbia, 2003; Iddings, 2009; Lee, 2005). One representative example, in which a student showed a great sense of agency, concerns a student who was officially designated as someone with learning disabilities according to state guidelines. Countering the implications of this deficitizing label, the student was the first student to complete all five levels of the video game, which incorporated reading strategies and text written in English based on another piece of text in the lesson.

Students were also positioned as expert learners by being given the opportunity to critique the video game. This opportunity stands in contrast to typical curricular material, which students are required to accept without challenging. A system for providing feedback was part of the game in two ways. First, players could rate the game on Gamestar Mechanic online by using the platform's standard player evaluation tools. Second, the teacher provided the students with a reflection and feedback sheet in which students provided specific critiques of the game. For example, some students suggested that we create more levels or create a version of the game for younger learners. Several students provided advice on how to improve and expand game play. In re-imagining the video game through critiques and reflection, the students engaged in rewriting the game and participated in the preliminary stages of the literacy practice of video game creation (Smith & Grant, 1999). As Salen (2007) suggested, the practices of modifying and building video games "are currently entry points for many young people into digital literacy, social communities, and tech-savvy identities" (p. 302).

Because the learning unit as a whole focused on the social issue of bullying, particularly in school and in the cyber world, the ELLs in the class studied language and literacy through meaningful content. The particular content of the video game—Katy's anti-bullying campaign—exposed students to youth activism. The teacher connected the game to wider social issues by showing students the website on which Katy launched her petition, www.change.org. Students then explored the site on their own and signed petitions, choosing those related to animal rights, international issues, and immigrant rights. One student expressed that, from the video game, she learned that Katy had a goal, and that she (Katy) persisted until she reached that goal. The video game served as more than a bridge to written text; it provided a platform for learning about social issues and how to be transformative individuals.

Conclusion and Future Directions

While further research is necessary on the effectiveness of using video games as a form of ESL and literacy instruction, our observations indicate that implementing digital technology in the classroom may enrich literacy experiences and encourage student agency. Moreover, it is important to note that this project created an opportunity for teachers and researchers to work together in building on their respective strengths and knowledge for the benefit of students. Accordingly, the game developers and the classroom teacher conceptualized the unit together, communicating frequently throughout the design of the video game in order to ensure that the game and attendant lesson plans complemented each other and the overall unit objectives on bullying as well as reading strategies corresponded appropriately with the instructional and community norms of the classroom site.

Furthermore, the affordances of an open platform like Gamestar Mechanic, which apprentices game builders through a series of increasingly difficult levels and lessons, allowed us to reflect on the process of game building. This open software also proved instrumental for researchers and teachers with little experience in creating video games to immediately begin working and playing in a digital space, highlighting the quality and affordances of the Gamestar platform.

Too often, the work of the academy is positioned as "out of touch" with the everyday experiences of classroom teachers. Likewise, the instructional knowledge of classroom teachers is often undervalued (Anderson & Herr, 1999). Our aim—to work within a framework of collective inquiry—signals opportunities for researchers and practitioners to bridge the traditional and unproductive divide between theory and practice (Cochran-Smith & Lytle, 2009).

Our hope is that this project creates a model for productive collaborations between university and classroom practitioners in the future. Certainly, there is space to expand upon our collective inquiry and include more school-based participants. Given the compulsory and restrictive curricular restraints that are so frequently levied upon classroom teachers, it is imperative that university colleagues work in tandem with teachers to learn from their experiences and to generate knowledge that augments both theory and practice.

Authors' Note

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