

Digital games and language teaching and learning

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Challenges

Teachers and learners will have increased opportunities to explore language in the community via digital games and virtual reality, making language learning more integrated into the communities in which it is spoken. What needs to be done to integrate such learning opportunities into all classrooms at all levels?

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Abstract

The digital gaming industry has captured the public's attention worldwide and in the United States alone, the video game industry is predicted to increase by 30% from 2010 to 2019, reaching \$19.6 billion in revenue (Takahashi, 2015, n.p.). Not surprisingly, digital gameplay is also rapidly expanding in educational domains. Although researchers have often cautioned that digital games are not a panacea or magic bullet, for the past decade educators have been exploring the inherent complexities and benefits of digital gaming and the significant opportunities they provide for effective, meaningful learning across disciplines (Caillois, 1961; Gee, 2007; McGonigal, 2013; Squire, 2009). World language learning and teaching have followed suit. This piece provides a brief exploration of the use of digital games in the language learning context and offers three ideas for future work in this area: (1) increased access to community-based games, (2) meaningful incorporation of virtual reality, and (3) increased access to commercial games.

KEYWORDS

high-impact teaching practices, technology

1 | INTRODUCTION

The digital gaming industry has captured the public's attention worldwide and, in the United States alone, the video game industry is predicted to increase by 30% from 2010 to 2019, reaching \$19.6 billion in revenue (Takahashi, 2015, n.p.). In a recent survey about video gaming, 49% of the 2,001 American participants reported that they played video games, with 10% adopting the persona of “gamer” (Duggan, 2015, n.p.). The survey also revealed a complex network of ideas surrounding digital gaming, including concerns about violence and the depiction of women and minorities as well as affirmations of the potential such games hold for building teamwork and cooperation.

Not surprisingly, digital gameplay is also rapidly expanding in educational domains. Although researchers have often cautioned that digital games are not a panacea or magic bullet, for the past decade educators have been exploring the inherent complexities and benefits of digital gaming and the significant opportunities they provide for effective, meaningful learning across disciplines (Caillois, 1961; Gee, 2007; McGonigal, 2013; Squire, 2009). Interestingly, initial research into the use of digital games in the teaching and learning of world languages actually began much earlier than most realize (e.g., Hubbard, 1991; Phillips, 1987), and in the last 5 years the amount of theoretical and empirical research on digital gaming and language development has grown considerably (see, e.g., Benson & Chik, 2011; Cornillie, Thorne, & Desmet, 2012; Peterson, 2013; Reinders, 2012; Reinders & Wattana, 2012; Reinhardt & Sykes, 2012; Sykes, 2013; Sykes, Oskoz, & Thorne, 2008; Sykes & Reinhardt, 2012; Thomas, 2012).

Specifically, studies have examined both game-enhanced learning (i.e., through the use of commercial, off-the-shelf games) and game-based learning (i.e., through the use of digital games built explicitly for the teaching and learning of world languages) and have shown that digital games support learning in a variety of areas. Benefits include the creation of a learning community (e.g., Bryant, 2006; Peterson, 2012; Reinhardt & Zander, 2011), the opportunity for intercultural learning (e.g., Thorne, 2008), access to a diversity and complexity of written and spoken discourse (e.g., Liang, 2012; Thorne, Fischer, & Lu, 2012), access to authentic texts (Reinhardt, 2013; Squire, 2008), evidence of authentic socioliteracy practice (Steinkuehler, 2007; Thorne, Black, & Sykes, 2009), and affordances for the sociocognitive processes of learning and language socialization (e.g., Piirainen-Marsh & Tainio, 2009; Zheng, Young, Wagner, & Brewer, 2009), especially of lexis (e.g., deHaan, Reed, & Kuwada, 2010; Hitosugi, Schmidt, & Hayashi, 2014; Neville, 2010; Purushotma, 2005; Sundqvist & Sylvén, 2012).

2 | FUTURE DIRECTIONS FOR DIGITAL GAMES AND WORLD LANGUAGE TEACHING AND LEARNING

While future work will undoubtedly suggest modifications in each of the domains mentioned above and uncover new opportunities for learning, the incorporation of digital games into world language teaching and learning offers interesting and varied possibilities. Imagine world language classrooms where, when in class, learners beg to continue working when the bell rings “just to make it to the next level” or where an instructor working with a class of 30 students can provide as-needed, individual feedback or work with a designated subgroup of learners on any particular class day. A classroom in which the right kind of digital games are integrated offers one mechanism for facilitating meaningful group and individualized classroom learning experiences that make the most of the instructor's knowledge and expertise. The future looks to continue these possibilities. Specifically, when implemented with intention, each of the three advances that are discussed below will become increasingly common and will undoubtedly continue to shape the learning landscape.

2.1 | Increased access to community-based games

The growing presence of mobile technologies and the increased access to wearables (e.g., the Apple Watch, Fitbit, Bellabeat) suggest an augmentation of opportunities for games that facilitate exploration of the community and on-the-go human behaviors, mediated by gameplay. It is already commonplace to find Fitbit step and running competitions in offices and schools as well as augmented reality games such as *Pokemon Go!* in parks, neighborhoods, and malls. Even more recent is the introduction of the Google Pixel headphones, touted as a “translating on-the-go system” as people explore. In languages, this might include an instructor walking around a museum or garden with his or her students deeply engaged in a game narrative that requires them to look up from their devices and really pay attention, adding a deeper understanding of the artifacts that they see. Similarly, community-based gamework might involve a homework assignment where learners are asked to explore their local neighborhood and create a small game representing that experience or participate in an enhanced version of voice-activated trivia that already is taking place in English-language classrooms (Kessler, 2018). Despite initial skepticism in the language education field, these technological innovations offer a unique opportunity for language educators to engage learners in deep language experiences that move beyond the translation of words as they relate to the community in which the target language is spoken.

While place-based games are not new to language learning—a number of games have been created specifically for language learning environments (see, e.g., Holden & Sykes, 2011; Sykes & Holden, 2011; Thorne & Hellermann, 2017)—it is expected that commercial games in this genre will become increasingly prolific, offering educators the opportunity to encourage further target language community exploration as well as on-the-go access to meaningful language learning experiences without the time commitment and expertise that would be needed for educators to build their own games. This means that learning games can be integrated into classroom practice more readily, both as in-class pedagogical activity as well as out-of-class assignments. Because initial evidence has demonstrated a significant benefit to connecting learning with place, the continued integration of digitally mediated, community-based experiences, if carefully understood, has immense potential. As educators increasingly incorporate mobile, place-based games in classrooms and players continue to incorporate them into their everyday lives, research should continue to examine how, when, and where learning can be most effective.

2.2 | The incorporation of virtual reality (VR)

In addition, the emergent nature of VR will likely become part of commercial games as the technology itself becomes less cost prohibitive and industry leaders begin to incorporate its benefits into commercial game spaces. By experiencing target cultures and languages through VR games, learners will have the unique opportunity to move about in time and space in ways that have not been previously possible. This could include, e.g., a mystery game in which learners are tasked with finding clues that are located around an important place or specific landmark or a journey to the site or period in which a historical novel or film is set. Implementation of VR could range from small microunits built in as part of the existing curriculum (e.g., in place of a presentation or cultural unit) or as a more expanded integration (e.g., as a component of each chapter as the learners move throughout the course). The use of low-cost VR headsets attached to existing mobile devices makes implementation possible in low-resourced schools with minimal access to other technologies. Furthermore, increased access to 3D cameras makes instructor and student creation of short VR experiences possible. While it is still relatively untapped for world language learning and teaching (for exceptions see Shih & Yang, 2008; Sykes, Brim, & Kaiser, 2016), VR offers immense potential for extending the power of games to access authentic texts, engage in social exploration, and enhance intercultural understanding.

2.3 | Increased access to commercial games

Finally, as technological innovation continues to allow access to higher-level content in low-connectivity environments, we should expect to see increased access via streaming services or mobile devices to high-fidelity digital games that are currently only available via expensive gaming consoles. As this access becomes more readily available, the use of a wider range of digital games becomes possible in classroom contexts, including classrooms with limited technological infrastructure. Such advances offer immense potential for mediated classroom activities that make use of commercial games for meaningful language learning experiences (see, e.g., the activities on <http://www.games2teach.uoregon.edu>). Implementation of these games across a variety of teaching contexts makes them a flexible tool for use in the classroom. For example, one instructor might choose to include various game stations where students can play in groups as one of several enrichment activities or have students play parts of a game as a whole class during the last 10 minutes of a class period and then require learners to finish certain components out of class, at home, in the school resource center, or on their own as homework. Finally, an instructor could even choose to devote one class day per week to an ongoing digital game. Regardless of the choice of implementation, the availability of commercial games is likely to expand, thus becoming more feasible as an instructional approach even in low-resourced environments.

3 | CONCLUSION

Regardless of the technological tool being implemented or the type of game selected, the pedagogical advantages of digital games should remain at the forefront of innovation. Sykes and Reinhardt (2012) highlighted five especially relevant features of games for language teaching and learning, each of which parallels best practices in second language teaching and learning.

1. *Learner-directed goal orientation*: Tasks and goals set for learning are dynamic, learner driven, and directly related to learning objectives.
2. *Opportunities for interaction with the game, through the game, and around the game*: Learning happens in the game itself, through the interactions that occur while playing, and as a result of wraparound tasks that facilitate learning outside of gameplay itself.
3. *Just-in-time, individualized feedback*: the opportunity to learn through feedback that is targeted specifically to the needs of the individual player.
4. *Relevant narrative and context*: the creation of a space in which context and narrative can be cultivated to create a meaningful experience.
5. *Motivation*: the result of powerful learning experiences in which the players continually engage, even in sometimes daunting or time-intensive tasks.

As innovation occurs, taking advantage of each feature of a game or technology will enable transformational pedagogy that moves toward the creation of a comprehensive learning experience in which students are engaged and willing to learn.

In sum, there is much to learn about the use of digital games for language teaching and learning as we move forward. Future research and practice, designed around each of these areas, will undoubtedly add to the complex and growing body of knowledge. Continually placing pedagogy at the center while designing, implementing, and evaluating digital games will undoubtedly yield both meaningful research results and meaningful world language learning experiences.

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How to cite this article: Sykes JM. Digital Games and Language Teaching and Learning. *Foreign Language Annals*. 2018;51:219–224. <https://doi.org/10.1111/flan.12325>