Player-Game Interaction: An Ecological Analysis of Foreign Language Gameplay Activities

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ABSTRACT

This article describes how the literature on game-based foreign language (FL) learning has demonstrated that player-game interactions have a strong potential for FL learning. However, little is known about the fine-grained dynamics of these interactions, or how they could facilitate FL learning. To address this gap, the researcher conducted a pilot case study that examined the dynamics and activities that comprised gameplay in the interactions of 2 learners of Arabic as a foreign language in the simulation-management video game Baalty. Data collected through observations, thinkaloud protocol, gaming journals, gaming walkthroughs, and debriefing interview were analyzed using discourse analysis methods. An ecological approach to FL learning was used as a theoretical framework. Data analysis and interpretation demonstrated that participants interacted with the game to develop their gameplay trajectory, and to this end, they drew on and engaged with in-game FL discourses to inform experiential learning of gameplay.

KEYWORDS

Case Study, Discourse Analysis, Ecological Learning, Extramural Gaming, FL Use, Game-Based FL Learning, Gameplay Activities, Player-Game Interaction

INTRODUCTION

The rapidly growing literature on game-based foreign language (FL) learning revealed that player-game interactions offer valuable opportunities for FL learning (Gee, 2003; Peterson, 2013; Chick, 2011; Miller & Hegelheimer, 2006; Ranalli, 2008; deHaan, 2005; Piirainen-Marsh & Tainio, 2009; Reinhardt, 2012; Reinders, 2012; Rama, Black, & Warschauer, 2012; Sylven & Sundqvist, 2012; Sundqvist & Sylven, 2012; Thorne, Black, & Sykes, 2009; Thorne, Fischer, & Lu, 2012). For some time, empirical research in the field has sought to establish the contested FL learning potential of digital games, and hence, most of the empirical studies have focused on the outcomes rather than the dynamics of game-based interactions (Sundqvist & Sylvén, 2012). As a result, little is known about the dynamics and activities that facilitate FL learning in player-game interactions. Describing these dynamics and activities is necessary to inform the design of FL learning games, and the adaptation of commercial video games for FL learning purposes.

To address this gap in the literature, the present exploratory case study examined the dynamics of gameplay in the interactions of two learners of Arabic as a foreign language with the simulation-management video game Baalty (PPIC-works, 2004). This has been a pilot study that aimed to shed light on the dynamics of gameplay that could facilitate game-based FL learning, and provide a sense of direction to future research in this underexplored area. To tease down the FL learning potential
of such a complex, dynamic, and emergent activity, the dynamics of game-based FL use should be examined in the context of the broader context of gameplay. To this end, the present study examined the dynamics of FL gameplay in standalone gaming to understand how game-based FL learning can emerge from gameplay. For the purposes of discussion, gameplay, player-game interaction, and digital gaming will be used interchangeably in the present study to refer to the engagement of participants in standalone gameplay activities.

This paper opens with a review of relevant literature that establishes the FL learning potential of player-game interaction, and discusses an ecological approach to FL learning as a theoretical framework for data analysis. Next, the design, methods, participants, procedures, and data analysis of the study are presented. After that, the results of the study are presented thematically, and illustrated with examples from the data. Finally, interpretations, implications, and limitations of the study are discussed.

**RELEVANT RESEARCH**

**FL Learning Potential of Player-Game Interaction**

Many empirical studies on game-based FL learning demonstrated that player-game interactions could facilitate FL learning both in structured instructional contexts and unstructured extramural contexts (Hitosugi, Schmidt, & Hayashi, 2014; Miller & Hegelheimer, 2006; Ranalli, 2008; deHaan, 2005; Chik, 2011; Rankin, Gold, & Gooch, 2006; Sundqvist & Sylvén, 2012; Sylvén & Sundqvist; 2012; Kuppers, 2010).

A few studies demonstrated that player-game interactions supported by supplementary activities can facilitate FL vocabulary learning. In a mixed-methods classroom study, Hitosugi, Schmidt, and Hayashi (2014) investigated the effect of playing the educational game *Food Force* (United Nations World Food Program, 2005) on the vocabulary retention of 20 intermediate and advanced Japanese learners. The study compared vocabulary retention in 2 conditions: gameplay supplemented with a vocabulary list and gameplay augmenting with explicit instruction and textbook exercises. Analysis of data collected through testing, interviews, and surveys demonstrated that participants in both groups retained new vocabulary, and that participants retained significantly more vocabulary from the game than from the textbook in the long term. Similarly, in a quasi-experimental study, Miller and Hegelheimer (2006) investigated the potential of the simulation video game, *The Sims*, supported by supplementary materials to facilitate the development of English vocabulary with 18 intermediate ESL students. Participants played the game and completed in-game tasks in 3 levels of access to supplementary materials. Pre- and post-tests were employed to measure vocabulary-learning gains. Statistical analysis of the data demonstrated that learners experienced FL lexical growth in all 3 conditions, and that learning gains correlated positively with the level of access to supplementary materials. In a replication of Miller and Hegelheimer (2006), using a mixed methods design, Ranalli examined the potential of *The Sims* augmented by supplementary materials to promote FL vocabulary acquisition with 9 intermediate ESL learners. Participants formed dyads that took turns playing the game in 3 levels of access to supplementary materials. Pre- and post-task surveys and tests were administered to measure their vocabulary retention and attitudes. Statistical Analysis of pre- and post-test score means suggested that learners experienced significant gains in vocabulary acquisition that correlated with their levels of access to supplementary materials.

Also, a few studies found that player-game interactions can offer FL learners an immersive space for active language use and practice. For instance, in an experimental case study, deHaan (2005) investigated the FL learning potential of a Japanese baseball video game with one learner of Japanese as a foreign language. The participant was instructed to play the game for a minimum of 30 minutes twice a week for 30 days, and report on his learning experience by filling in a gaming log. A vocabulary test and an aural translation task were administered before and after the treatment to measure learning gains. The study found that the participant utilized the game to practice listening comprehension, reading comprehension, and Kanji character recognition. In a qualitative study,
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