Untangling Multimedia Effects on EFL Incidental Vocabulary Learning via Playing an Online Hidden-Object Game

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ABSTRACT

The present empirical study examined the efficacy of coupling L1 or L2 definitions with pictorial glosses on incidental vocabulary learning when L2 learners exclusively play a purposely designed hidden-object game. Elementary EFL learners (n= 162) took a vocabulary pretest and a picture recognition test (PRT) and a word recognition test (WRT) immediately after playing the game, and again two weeks later. ANOVA analyses were conducted to measure vocabulary acquisition and retention. The findings revealed that the L1 text + picture gloss group did significantly better than the other two groups in the immediate acquisition of vocabulary. Concerning vocabulary retention, the two vocabulary measurements yielded different outcomes. In PRT, the L1 text + picture gloss group kept the highest retention rate, whereas in WRT, the L2 text + picture group did better than the other groups. This study suggests that assessment methods may yield different outcomes in multimedia vocabulary learning studies.

KEYWORDS

Hidden-Object Games, Incidental Vocabulary Learning, Multimedia Glosses, Multimedia Learning, Video Game, Vocabulary Retention

INTRODUCTION

By virtue of their media richness, interactivity, and intrinsically motivating appeal, video games are often praised for their salutary influence on language learning. When second language learners play a video game, be it a commercial off-the-shelf or a serious game, the linguistic input to which they are exposed and interact with provides a catalyst environment for language learning and consolidation (Bytheway, 2014; deHaan, Reed, & Kuwada, 2010). Digital game environments, especially those of massively multiplayer online role-playing games (MMORPGs), are rich in authentic and meaning-focused spoken and written vocabulary. Research on the efficacy of video games on second language learning has accentuated the role of gaming environments in bolstering vocabulary learning (Ghanbaran & Ketabi, 2014; Young & Wang, 2014). Claims have been made that while playing video games second language learners unconsciously pick up new vocabulary (Huang & Yang, 2012). In cognitive psychology, this unintentional learning is referred to as incidental learning. This stands in contrast to intentional learning which refers to “a deliberate attempt to commit factual information to memory, often includes the use of rehearsal techniques, like preparing for a test in school or learning a song by heart” (Hulstijn, 2003, p. 355).
In second language acquisition (SLA) contexts, incidental vocabulary learning is the process by which L2 learners acquire new vocabulary incidentally while reading, listening or doing a particular learning task in L2. It is hypothesized that incidental vocabulary learning is the main source of second language vocabulary acquisition, mostly through inferring meanings of unknown words while reading for pleasure (Huang & Yang, 2012). However, the uptake of new vocabulary knowledge through reading is incremental and slow, as the acquisition of new vocabulary requires “multiple exposures to a word in different contexts” (Huckin & Coady, 1999, p. 185). It is also probable that language learners incorrectly infer the meaning of the words or even worse pay no attention to the new words and, as such no vocabulary acquisition will take place.

In the past decade, extensive reading in the second language has been the primarily focus of incidental vocabulary learning research in SLA. However, the incidental acquisition of vocabulary through extensive reading is only beneficial for advanced L2 learners (Bisson, van Heuven, Conklin, & Tunney, 2013). It is assumed that L2 learners need to know at least 95% of the words in a reading text in order to correctly infer meaning from the reading context (Nation, 2001). For beginner language learners, then, extensive reading does not really help in learning new vocabulary. A multimedia video game, which inherently contains rich visual and verbal information, may be more beneficial and conducive to vocabulary learning, as in this case meaning of words can be derived or inferred from the visual cues presented in the game environment.

To this end, the present study aims to measure incidental vocabulary learning of new vocabulary presented in three modes, picture + L1 text, picture + L2 text, and picture-only, to elementary EFL learners while they play an online hidden-object game for fun. Hidden-object games are new casual video games in which game players are provided with names of random objects and asked to find them in a visually complex picture. The objects are camouflaged among other objects to reduce saliency and prevent pop-out effects. The challenge is then to find those hidden objects in the shortest time possible in order to earn extra points and/or compete with a friend on social websites, e.g. Facebook. This gameplay seems to help in establishing verbal-visual associations of lexicon in players’ minds. According to Mayer (2009), creating verbal-visual associations is “perhaps the most crucial step in multimedia learning (p. 74).” But in SLA, these associations can be made through the aid of learners’ L1 or L2. The question of what language, L1 or L2, leads to better incidental vocabulary learning has brought mixed findings in reading research (Cheng & Good, 2009; Hu, Vongpunivitch, Chang, & Liou, 2014; Xu, 2010). In the context of hidden-object games, the impact of learner’s L1 or L2 on vocabulary learning is still unexamined. As such, the current experimental study aims at probing the benefits of L1 and L2 in promoting incidental vocabulary learning in a game environment. Though this study is primarily based on a video game, its primary focus is not on the game or its gameplay but rather on the use of learner’s L1 and L2 with multimedia to foster incidental vocabulary learning. Our future research will focus on the impact of hidden-object game’s gameplay on vocabulary learning and retention.

The present paper is structured as follows: an introduction to multimedia learning with primary focus on vocabulary learning in CALL contexts is presented. This is followed by a systemic review on relevant studies on the effect of L1 and L2 glossing on multimedia incidental vocabulary learning and retention. Then, the theoretical underpinnings that guide the present study are discussed. Finally, the methodology of the present study is explained and the results obtained are presented and discussed with reference to relevant previous studies in the literature.
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