Comparative Effectiveness Between Game-Enhanced and Pencil-and-Paper English Vocabulary Learning Approaches

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ABSTRACT

Numerous studies were devoted to use of games in vocabulary learning in English as a foreign language (EFL) tertiary courses, which reported significant improvements of vocabulary learning when using computer games. This study used a mixed-design research method comparing the effectiveness in EFL vocabulary acquisition. Data was collected from randomly selected participants who were randomly assigned to the interactivity-prone computer game (Group 1), the less interactive-prone computer game (Group 2) and the pencil-and-paper (Group 3) assisted EFL vocabulary learning approaches. The first group learned EFL vocabulary through interactivity-prone computer game Hujiang Fun Vocabulary, the second group learned EFL vocabulary assisted with less interactive computer game Baicizhan, and the third group learned EFL vocabulary via the traditional pencil-and-paper approach. It was concluded that (1) The interactivity-prone computer game was more effective than the less interactivity-prone computer game in EFL vocabulary learning; (2) The computer game-assisted EFL vocabulary learning was significantly more effective than the traditional pencil-and-paper approach; (3) Males outperformed females in computer game-assisted EFL vocabulary learning. It was suggested that future research focuses on both design features of educational computer games and cross-disciplinary research into computer game assisted EFL vocabulary acquisition.

KEYWORDS

Baicizhan assisted EFL vocabulary learning, Gender differences, Hujiang Fun Vocabulary assisted EFL vocabulary learning, Pencil-and-paper

1. INTRODUCTION

EFL learning is operationally defined as the process of English language learning as a foreign language, where vocabulary learning in China is focused on in this study. There are conspicuous differences between Chinese and English vocabulary, contributing to difficulties in learning English vocabulary for Chinese native speakers. Variance of Chinese intonations leads to different meanings for morphologically similar Chinese characters. Whereas, intonations seldom alter semantic inferences of English vocabulary. Thus, Chinese native speakers tend to find it hard to learn English vocabulary which relies more on morphology and alphabetic sequence rather than intonations (Smith et al., 2013). Orthography is considered essential in Chinese calligraphy where strokes form different Chinese characters and meanings, while English should be alphabetically spelled where combination of morphemes is semantically distinctive. English vocabulary originates from various languages across the world due to British colonization and cultural integration, which enlarges the range of

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English vocabulary, causes complexities of English vocabularies and thus increases the difficulties of their acquisition.

In view of difficulties in English vocabulary acquisition, English vocabulary learning has been a headache to many EFL (English as a foreign language) learners because they feel puzzled when confronted with this completely different linguistic system. It is therefore necessary to find out an effective way to learn English vocabulary. Learning English vocabulary through games may be a worthwhile trial since traditional learning methods pose unattractive to learners. This study intends to contribute three arguments to the body of present research: (1) the interactivity-prone computer game was more effective; (2) the computer game-assisted EFL vocabulary learning was more effective; (3) males outperformed females in computer game-assisted learning. Interactivity is operationally referred to as the degree of activities that undergo the process where the computer game needs to be played by frequently connecting with multiple factors or players. In case the game play can be implemented with only occasionally connecting with multiple factors or players, it is then considered less interactive.

2. LITERATURE REVIEW

This section will extensively review recent works in order to find out research questions and establish corresponding research hypotheses.

2.1. Effectiveness of Use of Computer Games in Vocabulary Learning

Recent years have witnessed the emergence of educational computer games that are flooding the educational games market (Girard et al., 2013). The most frequently researched outcomes for educational games was knowledge acquisition, while entertainment games widely covered affective, behaviour change, perceptual, cognitive and physiological aspects. Educational games were studied on various topics of health (Boyle et al., 2016). While there have been many studies exploring interesting games, few studies have focused on student achievement (Young and Yukhymenko, 2012).

Numerous studies were devoted to use of games in vocabulary learning in EFL tertiary courses, which reported significant improvements of computer game use on vocabulary learning. An earlier study also revealed that computer game “bingo” was effective in sight word training and reading (Kirby et al., 1981). Interconnected relationships between each GameFlow element was also suggested (Kafai, 1998). Studies also demonstrated that games promoted rather than impeded learning, where how and why games could effectively motivate players to learn was also discussed (Gee, 2006). Assisted with Internet-based texts and computer games, learners obtained significantly more vocabulary (p < .0005) than those who learned vocabulary via hardcopy texts, lists of words and multiple-choice questions (Smith et al., 2013). The computer game “The SIMS” and complementary academic arrangements were applied to EFL university courses. Significant gain was reported in the range of vocabulary, but the regret was that merely nine participants joined the research (Miller and Hegelheimer, 2006). The learning approach based on shared book reading and vocabulary review game improved learners’ vocabulary knowledge significantly more than that based on shared book reading, after-reading vocabulary review, and game that did not teach vocabulary (Hassinger-Das et al., 2016).

In vocabulary learning, learners assisted with computer games outperformed those without assistance of computer games, although the former did not spend significantly more time learning than the latter (Sandberg et al., 2014). Learners enjoyed the computer game-based approach when learning vocabulary, coupled with adaptive and independent practices, and they also reported they enlarged the range of vocabulary and improved their perception of language via gaming (Schamroth and Sara, 2014). A patented board game, adapted to accommodate learners on various levels, was designed and proved able to enjoy participants and improve their vocabulary learning (Burrowes, 2003). It was thus necessary to develop computer games that could be applied in computer-aided vocabulary learning (Uzun, 2009).
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