

Using Mobile game-based English Vocabulary Learning Apps to Improve Vocabulary Acquisition in Primary School

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Abstract. With the rapid development of game-based word memorization apps, little evidence suggests that it to some extent, affects students' vocabulary acquisition. This paper aims to identify whether mobile learning apps with game functions would have a positive influence on primary school students' English word learning. Also, this paper describes the function, acceptability, and problem, thereby providing several suggestions for game-based English vocabulary learning apps. The conclusion is that mobile game-based vocabulary learning app largely motivates students to learn English words.

Keywords: Mobile learning, Game-based learning, Motivation, Vocabulary acquisition.

1. Introduction

The prevailing international influence of English enables English learning to be a crucial component of China's education. Word acquisition is the core of language learning [1]. The majority of learners, however, believe that memorizing English words is a tedious task. It has been found that traditional vocabulary teaching methods negatively affect learners' attitudes towards learning [2]. Fortunately, as technology has developed, using mobile phones to access information and knowledge has become more popular [3, 4]. Based on previous studies, apps with games that help students learn vocabulary can motivate them, enhance their learning effectiveness, and increase their satisfaction with their learning [5, 6]. Therefore, this study aims to investigate whether game-based English vocabulary apps are helpful for primary teachers, students, and their parents to understand what are potential problems, and what are the practical ways of these apps to solve problems.

2. Mobile Phone Learning

2.1. Mobile Learning

It can be beneficial for students to study by using mobile learning apps outside of the classroom. A mixed-method study was conducted by two researchers to assess undergraduate students' vocabulary learning performance by using their cell phones [7]. During the six weeks of the study, 60 students were randomly selected for two test groups based on their university entrance exam scores and placed in either an experimental or control group. The way the experimental group used is to utilize mobile learning. The control group, in comparison, learned vocabulary by traditional methods. By analyzing the results of the two groups pretest and post-test, as well as talking with members of the experimental group, it has been proven that mobile learning is helpful for students' vocabulary acquisition [7]. Besides, students at universities offered positive opinions, stating that they felt more motivated than before [8, 9]. All 51 undergraduate students were chosen by Kohnke, Zhang, and Zou, who were native Chinese speakers with English as their second language. A quantitative study was carried out to evaluate how well the participants remembered business vocabulary between the pretest and posttest after a month. They underlined the value of mobile phones in helping individuals learn business terms [10]. More evidence about the influence of mobile learning on younger learners is given by Sandberg. In his study of how mobile technology can enhance education, he made three groups composed of fifth graders. Each group learned the same materials, and two of them used the mobile app as an extension of their learning, while the third group used it most frequently [11]. It appears that students in the third group were most motivated by the app and the mobile learning app

contributed to their learning. In addition, it shows that it is possible to use mobile learning in both classroom and non-classroom settings because it can take place wherever there is internet access

The current mobile learning app for English word learning mainly has two categories according to the functional classification. The function of the first type of app is to look up words, such as Baidu translation, PowerWord, Youdao Dictionary, and Eudic, a series of electronic dictionaries. The main purpose of these apps is to help users to do a quick search for words they do not know. When users encounter words they do not recognize, it is convenient for them to use these apps to quickly find out the words' meanings and can add the words to the word list for further review later. The example sentences and the pronunciation of words in these apps can also assist users in understanding the meaning of words. This kind of app is more similar to a temporary storage place for the user's vocabulary. The second category is the word memorization apps, such as BaiCiZhan, Bubei Word, Shanbay Word, and MoMo Word, which are widely used in China. These apps cover many English tests word lists, including junior and senior high school, IELTS, TOEFL, SAT, GMAT, etc. It is beneficial for students to memorize words at any time, in anywhere, with these apps, which eliminates the necessity of buying and carrying heavy vocabulary books. In addition, these apps allow users to schedule the number of words they should memorize each day according to their exam schedules, allowing them to allocate time accordingly.

2.2. Mobile Game-based Learning

Mobile learning apps provide a more convenient option for people to learn English. However, the emergence of English learning apps that combine mobile learning apps and mobile games has stimulated even more innovative learning strategies both inside and outside the classroom. Because of this, mobile game-based learning (MGBL) has become a viable alternative to traditional teaching and learning methods, especially for the younger generation. A study performed by three researchers investigated the relationship between learning words and using a mobile game-based learning app. This is a mobile learning app designed with and without game functions. In the experiment, the students who used the game function in this application performed better on vocabulary tests and had a better memory. Apart from that, compared to the traditional learning method, which is using paper to write down new words, game-based learning is also more excellent. As Li argues, game-based vocabulary learning apps can enlarge individuals' vocabulary, engage students' interest, build their confidence, and motivate them in comparison to traditional learning method [14]. Similarly, some researchers found that learning English vocabulary through mobile game-based apps can strengthen students' memory, learning ability, and reduce their stress. [6].

Some word memorization applications have combined games with word memorization. For instance, BaiCiZhan, a vocabulary learning app, which first gives people an example sentence using the word along with four pictures when they learn a new word. Among these pictures, only one corresponds to the word's meaning. Students are instructed to choose the image that relates to the word out of the four pictures. As a result of this interesting game, people subconsciously develop a connection between pictures and words, which contributes to a more vivid and deeper memory of the words. In addition to the games set up when learning new words, games also exist in the review of words. The app sets up a variety of review methods, such as choosing the Chinese meaning of a word given in English, choosing the English word according to Chinese, listening to the pronunciation of the word to choose the meaning of the word, and spelling the correct word by the given letters. When the user completes the daily word memorization plan, the unfamiliar words will form a new word list, and the word app will make a word review plan according to the Ebbinghaus forgetting curve. When the user opens the app the next day, they have to review the old words before learning the new ones.

3. Recent Progress, Problems and Suggestions

3.1 Function

Software developers have included many useful features in these mobile game-based learning apps to assist learners, especially younger students, in recognizing their abilities and improving their English proficiency. First of all, several apps, like BaiCiZan and Duolingo, will have language tests such as vocabulary tests and speaking tests which help learners assess their vocabulary to determine how well they are doing in their English learning process. In addition, the app engages learners' visual and auditory senses through graphics, audio, and video. Clips from classic songs, movies, and TV shows are included in these apps to stimulate learners' interest. As part of the app, learners will also find mini videos recorded by teachers, in which teachers will give more explanations of words and offers tips for remembering them. Furthermore, these apps allow users to monitor each other's online learning. Once the user completes the daily word memorization task, the app will run a learning check-in for the user. This will be automatically synchronized to the communication community in the app. In the community, users can add other users as friends. And the friends can see each other's learning progress and compete with others. At the same time, weekly competition leaderboards and other motivational lists will be published. Therefore, by interacting and communicating with other learners, they are more motivated to learn new words.

3.2 Acceptability

These years, mobile game-based learning has become a popular way to learn a language by individuals. It has developed at a rapid speed, driven by the development of the Internet and information technology. Besides, as Duh et.al mentioned, younger learners are more obsessed with interesting games in the process of learning some new knowledge [15]. It is undeniable that playing games are more attractive than boring textbooks and vocabulary books for primary school students. Hence, combining the games with vocabulary together could form an easy and delightful learning atmosphere for younger learners. The rich variety of interactions and interesting games in mobile game-based learning apps could largely encourage students of this age group to be intrinsically motivated to learn English. When students are motivated from the inside, they will be engaged in learning out of interest or satisfaction or to achieve their academic goals.

3.3 Problem

Although it has become a trend to utilize mobile game-based learning apps to learn English, it still has several problems. Firstly, the low efficiency of using game-based learning apps. With the popularization of mobile phones, phones have long ceased to be merely communication devices. Users can use phones to install software, games, and other programs from the app store, these changes may present a significant temptation to students. At the same time, with the growth of social networks, the very first thing many people unlock their cell phones is to check out their social apps. As a result, when using cell phone apps for self-learning, it is very likely that students will abandon self-learning and begin to play with their cell phones due to their lack of self-control, resulting in a decrease in learning efficiency. Secondly, users highly rely on game-based learning apps. After using game-based learning apps, many students may no longer pay attention in class and instead prefer to use learning apps for self-study after class. This will inevitably generate a vicious circle and will hinder students' learning efficiency in class. Thirdly, misinformation in learning apps is another concern. The accuracy of learning apps is limited, for example, a number of misleading information and advertisements in the applications. These could bring a negative impact on students.

3.4 Suggestions on improving these apps

Based on the problems above, some constructive suggestions are listed. For the temptation to use multiple apps on cell phones, parents can set app permissions to limit the apps available to elementary school students so that they can concentrate on their word study without the interference of third-

party software. For students who are overly dependent on learning apps, parents can set the time when the app is used. For example, some applications have a child lock. After the app time is exceeded, the phone will automatically close the app. In this way, elementary school students cannot use these apps at other times, and will not make students reliant on the app. For the error messages in the app, the software developer needs to hire a more professional teacher to proofread the information in the app. At the same time, the user feedback function can be used to correct errors in time. As for the pop-up advertisements in the app, the software developer needs to further enhance the quality of the software to raise users' trust in the software.

4. Conclusion

To sum up, mobile game-based English vocabulary learning apps have played an essential role for primary students in increasing the efficiency of memorizing words. These mobile game-based English vocabulary learning apps integrate games and English words with interesting pictures, audio, and videos, and also create a community for users to discuss and compete, which stimulates the interest of elementary school students in learning English words and increases their motivation to better understand the meaning of words. However, these apps are only auxiliary and still have some shortcomings that need to be addressed by parents and software developers in order to help children attain better learning outcomes.

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