

An Analysis of the Influence of Different Word Reciting Apps on College Students' Word Memory from the Perspective of Gamification Learning

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ABSTRACT

Gamification learning refers to the introduction of game mode into general teaching activities in order to improve learners' learning enthusiasm and teaching effect. The more common game elements are Level, Point, Reward, Challenge, Badge and Avatar, but the most commonly used are points, badges and Leaderboard. The purpose of this research is to investigate the effect of gamified learning on college students' English word recitation. The feedback of "BaiCiZhan" and "BuBeiDanCi" were collected by issuing questionnaires. The information collected includes college students' recognition of the two software learning methods, learning enthusiasm and learning effect. The influence of gamified learning on college students' English word recitation is evaluated based on these three data. The results show that gamification learning fully mobilizes the enthusiasm of college students to recite words, but it is still slightly inferior to the traditional method of reciting words in terms of learning effect.

Keywords: Gamification learning, second language acquisition, word learning software

1. INTRODUCTION

With the development of the Internet, people's learning methods have become rich. For college students, English learning is essential, and reciting words is the basic link, so many software companies began to develop software for reciting words. Making reciting words no longer boring is one of the important reasons why software can occupy a large market. For example, the interesting reciting word software such as "BaiCiZhan" on the market, which helps learners learn words by gamifying the process of reciting words. The purpose of this paper is to study whether the game-based word recitation software can effectively help learners learn compared with the traditional word recitation software.

The gamification learning mechanism of second language acquisition is consistent with that of second language acquisition. Tomlinson put forward the five most important principles of language acquisition: expose learners to languages from multiple sources; Help learners pay attention to the characteristics of real input; Create opportunities for learners to use the target language; Opportunities to provide feedback on results; Stimulate and sustain the learner's curiosity and

attention. Gamified learning in second language acquisition is consistent with these principles. Gamification learning takes learners as the center, designs learning content according to gamification thinking and gamification mechanism, understands, memorizes and applies knowledge content with the help of game mechanism, improves learners' learning stickiness and learning experience, and enables learners to carry out immersive and experiential learning through social interaction and challenges. In the global digital age, gamification learning has already been applied to second language acquisition, and word recitation software is also changing with the times. More and more word-reciting software is trying to introduce gamification mechanisms. This essay will analyze whether game-based word recitation software can help learners effectively compared to traditional word recitation software.

The main research object of this paper is college students, including junior college students, undergraduate students, graduate students and doctoral students. The game-based word recitation software "BaiCiZhan" and the traditional word recitation software "BuBeiDanCi" were selected for comparison. Through the study of the learning methods, learning enthusiasm

and learning effect of the two of the word recitation software, we can get whether the game-based word learning can effectively help learners memorize words.

2 OVERVIEWS OF GAMIFICATION OF SECOND LANGUAGE ACQUISITION AND RESEARCH DESIGN

2.1 Gamification

Gamification refers to the use of game mechanisms, aesthetics and game thinking to attract others, encourage behavior, promote learning and solve problems. In 2003, Nick Pelling proposed the term "Gamification", which was the first time that gamification in the modern sense was proposed. The application of gamification in the field of education is educational gamification, which includes two forms of "gamification learning" and "gamification learning" [1]. Among them, gamification learning refers to the introduction of game modes in general teaching activities, such as points, rankings, medals and so on, in order to improve learners' learning enthusiasm and teaching effect [2]. Gamification learning refers to the production of a game that integrates the teaching content into the task system, so that learners can achieve their learning goals through the game. Among them, "Minecraft: Education Edition" is a well-known educational game. Nagle believes that games can not adapt to all learning situations [3], and it is also very difficult for teachers to integrate games and teaching content while ensuring that students' performance is transformed into structured feedback and predicting the sequence of behavior that students may make [4]. Even if the game is integrated with the teaching content, it may only be a low-level and limited combination [5]. By introducing game elements into teaching activities, gamification learning effectively avoids the difficulties encountered by teachers in integrating games and teaching. It not only retains the subjectivity of teaching content, but also adds interesting factors of gamification learning, which makes students interested in the learning process and makes the learning process less boring.

Gamification learning has been widely used in the field of language learning because of its low difficulty, fragmentation and easy structuring. This article involves the back word software "BaiCiZhan" is the use of gamification learning means, through the learning process into the task system, points system and rankings, etc. To achieve the purpose of motivating learners.

2.2 Theoretical framework

According to Garrisetal's proposed the "input-processing-output" model of teaching games and second

language acquisition. In the input stage, software developers combined word recitation with game features. "BaiCiZhan" made the word learning process into a breakthrough process, and delete the familiar words to classify them into categories that do not need to be learned again. Make learners have the pleasure of crossing the battlefield to encourage learners to continue learning; In the language processing stage, learners make judgments and implement them according to their own experience, get systematic feedback, and finally submit the game task report to complete the output process. The "copperplate" function launched by "BaiCiZhan" is used as the reward feedback for learners to complete the word "breakthrough", which has the function of exchanging coupons to buy word books and courses. The reward feedback mechanism makes learners more willing to spend time on learning, and eventually repeats the "input-processing-output" game cycle until the learning goal is achieved. This model has become the design idea of most of the reciting software on the market, this paper selects the game reciting software "BaiCiZhan" on the market and the traditional method of reciting "BuBeiDanCi" to compare, through the method of issuing questionnaires to investigate the impact of game reciting software on the effect and efficiency of college students' reciting words.

2.3 Research design

2.3.1 Research questions

This study mainly discusses the following research questions: ①What is the learner's evaluation of the learning style in "BaiCiZhan" or "BuBeiDanCi"? ②How do learners evaluate the learning effect of "BaiCiZhan" or "BuBeiDanCi"? ③How do learners evaluate the degree of learning enthusiasm improved by "BaiCiZhan" or "BuBeiDanCi"?

2.3.2 Research methods

A questionnaire survey was used in this study. The questionnaire is divided into three parts with 22 questions. The first part is the basic information of the respondents, the second part is the main body of the questionnaire, and the third part is the user's suggestions for the software. The questionnaire was in the form of Richter's 7-grade scale, with 1-7 indicating "very disapproval", "disapproval", "relatively disapproval" and "general approval" respectively. The higher the learner's recognition of the problem, the more satisfied the learner is with the learning effect brought by the software function and the improvement of learning enthusiasm brought by the software function, and the better the evaluation of the learning style of the word recitation software.

Table 1 Basic information of sample

Information	Classification	Number of respondents	percentage
Gender	Male	64	21.26%
	Female	237	78.74%
education background	College degree	3	1%
	Bachelor degree	282	93.69%
	Master degree	14	4.65%
	Doctor degree	2	0.66%

2.3.3 Object of research

This study selects college students as the research object, including junior college students, undergraduate students, master's degree students and doctoral students. The total sample size of the questionnaire is 301, and the basic information of the respondents is obtained through the first part of the questionnaire. See Table 1 for details.

2.3.4 Data analysis

In this study, SPSSAU was used for descriptive analysis of data

3 METHOD

3.1 The introduction of "BuBeiDanCi"

"BuBeiDanCi" is a word reciting software, which not only retains all the standard word analysis and correct pronunciation of the general word reciting software, but also adds the characteristics of using a large number of original sounds of movies and TV plays in word analysis, which adds interest to students in creating an English learning atmosphere.

The "BuBeiDanCi" software divides the learning process of a word into three steps. First of all, the software hides the correct translation of the word in four options, and if the choice is wrong, the correct interpretation of the word will be displayed and the order of the words will be put back for learners to learn again. In the second step, the software will show an example sentence containing a word. The learner will recall the correct meaning of the word according to the example sentence, and choose from the two options of "Familiar" and "Unfamiliar" given by the system. If the learner chooses "Unfamiliar", he will return to the first step, and if the learner chooses "Familiar", he will enter the last step. In the last step, the system hides all the prompts, but simply displays the word and gives two options of "Familiar" and "Unfamiliar". Select "Unfamiliar" to return to the first step to learn the word again, and select "Familiar" to end the learning of the word. At the end of learning a group of 10 words, the system will check the spelling of the learner's word learning effect. After each word is spelled correctly once, it will be assigned to the "review" area for review tomorrow. Words that are misspelled once or more will be assigned to the next group of words to be learned for re-learning.

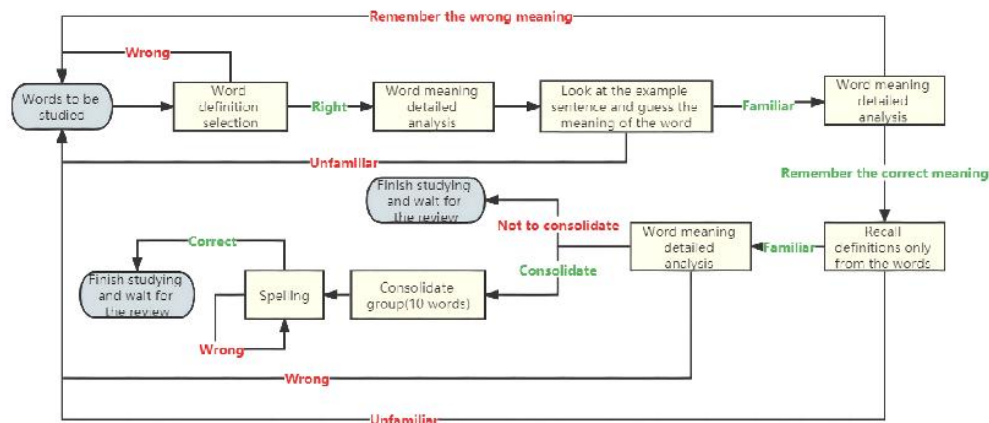


Figure 1 Reciting mode of app "BuBeiDanCi"

3.2 The introduction of "BaiCiZhan"

"BaiCiZhan" is a software for reciting words with pictures. Its feature is that the software designs pictures matching the meaning of each word, so that learners can connect pictures, words and sentences in specific contexts, so as to enhance learners' understanding and memory of words.

"BaiCiZhan" uses pictures that conform to the definition of words to let learners learn words. The software divides the learning process of words into three parts around image memory. The first part is the example sentence selection, that is, according to the example sentence containing the word, we can infer the definition of the word, and select the picture that conforms to the definition of the word from the four pictures given. This part mainly focuses on learners' understanding of word usage and fixed collocations. The second part is word selection, that is, before learning new words, the system will present learners with a group of related pictures of the words they have learned, and learners need to choose a picture that is closest to the meaning of the word from a number of pictures. This part associates the picture with the word definition to deepen the learner's understanding and memory of the word. The third part is pictographic meaning selection, the system will make the word pictographic, learners need to choose the correct interpretation of the word according to the pictographic word. This section emphasizes the learner's mastery of the spelling of words.

4. RESULT

4.1 Evaluation of learners' learning style of "BaiCiZhan" and "BuBeiDanCi"

In the word recitation software learning style identity survey, the questionnaire put forward a total of four questions, two of which are based on the "BaiCiZhan" characteristic learning style, the other two questions are based on the "BuBeiDanCi" characteristic learning style, through the investigation of learner identity can be inferred that learners are more inclined to "BaiCiZhan". Or the traditional method of reciting words represented by "BuBeiDanCi". According to the results of the questionnaire, 50.67% of the learners agree with the learning method of associating pictures in line with the use of words when reciting words, 46.51% of the learners think that pictographic words will be more helpful for their own learning of words, 64.15% of learners like to understand each meaning of words with examples. 58.19% of the learners agreed with the way of reciting words while writing. Among them, the "picture-association word-reciting method" and the "pictographic method" belong to the characteristic functions of the word-reciting software "BaiCiZhan", while matching appropriate example sentences for the translation of each

word and letting learners remember words while spelling is the characteristic functions of the word-reciting software "BuBeiDanCi". Through descriptive statistical analysis of SPSSAU on learners' recognition of the learning methods of the two words recitation software, as shown in Table 2, learners generally agree with the learning methods provided by the two words recitation software, but the recognition of the traditional word recitation method corresponding to "not reciting words" is higher.

4.2 Evaluation of learners' learning enthusiasm for "BaiCiZhan" and "BuBeiDanCi"

In the survey on the recognition of the learning style of reciting software, the questionnaire puts forward five questions based on the gamification design of the characteristic reciting method and function of "BaiCiZhan", and the higher the recognition degree of learners represents that the learning enthusiasm of learners is more easily aroused by the reciting software "BaiCiZhan" and its representative gamification learning style. According to the results of the questionnaire, 51.33% of the learners thought that they would be more motivated to study with their friends, 54.01% of the learners liked to stimulate their enthusiasm for learning through competitions and rankings, and 44.14% were willing to join learning groups. 62.54% of the learners hoped that the reciting software would hold regular reciting activities and give rewards to motivate themselves to continue learning, and 39.34% of the learners were willing to share their learning results with the "Study circle" to increase their learning enthusiasm. Through the descriptive statistical analysis of SPSSAU on the data of learning initiative recognition, as shown in Table 3, most learners affirm the effect of learning initiative promotion brought by the game function designed in "BaiCiZhan", but it is worth noting that only 39.34% of learners are willing to share their learning results. Through the return visit to the users who fill in the questionnaire, it is found that the learners who give low scores in this item think that each person has different tasks of reciting words every day, and it is easy for the learners who recite a large number of words to discriminate against a small number of learners when sharing, thus discouraging the enthusiasm of learners.

4.3 Learners' evaluation on the learning effect of "BaiCiZhan" and "BuBeiDanCi"

In the survey on the recognition of the learning effect of reciting software, the questionnaire puts forward six questions based on the characteristic reciting method and process of "BuBeiDanCi", and the higher the recognition of learners means that the learning effect of reciting software "BuBeiDanCi" and its traditional reciting method is better. The statistical results of the questionnaire show that 73.83% of the learners think that

it is easier to remember words by learning examples in real context, and 71.48% of the learners think that the accuracy of word spelling will be improved by comparing the pictographic words and consolidating the spelling process after reciting words. 66.34% of the learners think that learning with the example sentences of the original movie can help them better grasp the pronunciation and pronunciation of words, and 63.2% of the learners think that the simple recitation interface brings better learning effect than the recitation interface full of pictures. 74.92% of the learners think that the detailed translation of words and the example sentences

set up to match each translation will make it easier for them to understand the use of words and use them skillfully in writing. 73.07% of the learners will master the use of words more skillfully when they learn words with phrases containing words. Through the descriptive statistical analysis of the data of the learners' recognition of learning effect by SPSSAU, as shown in Table 4, most of the learners affirmed the word recitation method of "not reciting words", and they thought that they had greatly improved in the four aspects of "listening", "speaking", "reading" and "writing" after experiencing the word recitation process of "BuBeiDanCi".

Table 2 A survey of learning style identity

	N	The minimum	The maximum	The average	The standard deviation	The median
I like to think of pictures that match the situation when I recite words.	301	1.000	7.000	4.545	1.797	5.000
I like pictographic letters in words to help me remember them.	301	1.000	7.000	4.322	1.783	4.000
I like to combine example sentences to understand each meaning of words.	301	1.000	7.000	5.103	1.553	5.000
I like to write words as I recite them.	299	1.000	7.000	4.756	1.762	5.000

Table 3 A survey of study enthusiasm identification degree

	N	The minimum	The maximum	The average	The standard deviation	The median
I will be more active in reciting words if I can study them with other friends.	300	1.000	7.000	4.533	1.787	5.000
I will be more motivated to learn if I can compete with different learners in the vocabulary competition and know my ranking.	300	1.000	7.000	4.677	1.717	5.000
I prefer to join a study group and study with others rather than trying to memorize words by myself	299	1.000	7.000	4.314	1.814	4.000
I would be more willing to learn words if the software offered me a reward for memorizing them on a regular basis	299	1.000	7.000	4.997	1.684	5.000
I will be more active in reciting words if I can share my learning results with other learners in the "Study circle".	300	1.000	7.000	4.090	1.860	4.000

Table 4 A survey of study effect identification degree

	N	The minimum	The maximum	The average	The standard deviation	The median
It is easier for me to remember words if I combine them with examples in real context.	298	1.000	7.000	5.440	1.358	6.000

Compared with pictographic words, it is easier for me to spell the words correctly if there is a consolidation process after reciting the words.	298	1.000	7.000	5.319	1.396	5.000
It is easier for me to master the pronunciation and pronunciation of new words by using original examples of movies and TV works to help me remember new words.	297	1.000	7.000	5.118	1.514	5.000
Compared with the word-memorizing interface full of pictures, I think the simple word-memorizing interface can make me concentrate more and make me remember words more easily.	299	1.000	7.000	5.117	1.453	5.000
If the software can supplement each meaning of the word with examples, I can understand the usage scenario of the sentence more easily and skillfully use it in writing.	299	1.000	7.000	5.378	1.326	5.000
If there is a word collocation in the word analysis section of the software, I can use it more easily.	297	1.000	7.000	5.384	1.348	6.000

5. DISCUSSION

Play is a powerful way to learn, and gamification is the use of game elements and game mechanics to promote and influence people? [6]. Modern people grow up in the digital age, immersed in the atmosphere of the rapid development of the Internet, they have been exposed to games since childhood, and have integrated the elements of games into their lives [7]. The development of gamification learning has brought unprecedented opportunities to English learning, while the use of gamification learning for English learning is also facing many challenges.

5.1 Opportunities for gamification learning.

First of all, gamification learning will fully mobilize the enthusiasm of learners to achieve their learning goals with a more relaxed mentality. The designers of gamification learning have set a "strong goal" for learners [8]. In addition, all gamification designs are designed to make learners not feel bored in the process of achieving the goal. Once learners achieve the goal and review their learning process, they will not leave boring memories, but a relaxed and pleasant learning process. Secondly, gamification learning keeps simple rules, low lower limit and easy to use. Thanks to simple rules and operations, the gamification learning model is promoted regardless of age and other factors. Thirdly, gamification learning will give learners a great sense of achievement in the learning process. The design elements of gamification education include badges, leaderboards and other elements. Every time a learner achieves a small goal in the learning process, there will be corresponding reward feedback to encourage learners to continue to complete the learning goal [9].

5.2 Challenges of gamification learning.

First of all, gamification teaching refers to the introduction of gamification elements on the basis of teaching activities as the main body, which makes the teaching task more vivid and more attractive to learners to achieve the task, which makes the teachers who use gamification teaching have relatively high gamification design ability. For example, in the "reward" part of the gamification element, if the reward is given too frequently, it will greatly weaken the learner's intrinsic motivation to learn. How to measure the frequency and time of "reward" distribution requires the task design skills of teachers and designers. Secondly, learners tend to pay more attention to the elements of the game and neglect the learning tasks that should be completed. In the third part of the questionnaire, when asked about the learners' opinions on the word recitation software, the learners' feedback on the gamification word recitation software "BaiCiZhan" was "I enjoyed the process of reciting words very much, but I found that I didn't remember many words when I recalled them." Learners are generally satisfied with the learning effect of "BuBeiDanCi".

6. CONCLUSION

With the development of Internet technology and the continuous updating of educational technology, the combination of "game" and "education" is bound to become the development direction of future teaching methods. For modern people who are accompanied by games, the introduction of games will undoubtedly make education more dynamic and adapt to the living habits of contemporary students [10]. Although gamification of learning has become a hot topic in education, few studies have investigated the impact of gamification of word-memorizing software. Among 301 survey samples, 114

learners used "BaiCiZhan", 40 learners used "BuBeiDanCi", and 77 learners used two kinds of word memorizing software at the same time. This undoubtedly shows the success of the word memorizing software "BaiCiZhan", which represents gamification learning. By comparing the gamification word memorizing software with the traditional word memorizing method, this paper makes a conclusion after investigating the learner's recognition degree of the two of the word memorizing software. This study believes that the current gamification of education is not mature, there are many problems can not be ignored. The design of gamified learning tasks by software vendors is inadequate. Fun games can easily cause learners to forget their learning objectives. Low difficulty cannot meet the learning needs of learners. Unreasonable reward arrangement can not stimulate learners' learning motivation. However, I believe that with the gradual correction of the above problems, gamified learning will surely serve the education field better.

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