

Design on College English Vocabulary Learning System based on Mobile Phone APP

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Abstract. Vocabulary is one of the three elements of language, as an important position in English learning. Vocabulary has always been the various stages of English teaching's basic and difficulties. Mobile learning breaks through the time and space constraints of the traditional teaching model. The vocabulary learning model based on mobile learning is the future development trend. This paper aims at the current situation that college students prefer to use word memory APP to improve the quality of college English teaching. Firstly, the paper analyzes the main English vocabulary learning APP, and on the basis of fully absorbing the predecessors' results, the system storage design, functional structure design and terminal adaptation design are carried out according to the present situation of college English and college students. This design solves the key problem of software development and plays an important role in improving the quality and efficiency of software development.

Introduction

Mobile phones and other handheld devices continue to increase, making mobile learning from the laboratory research into people's daily lives. Wherever you are, whether through formal learning or informal support and communication, mobile devices are integrated into everyday learning activities as personal tools. In recent years, with the reduction of mobile device prices and mobile services costs, the improvement of mobile device performance and mobile service quality, mobile learning is carrying different content and different forms into the thousands of households. The Ministry of Education attaches great importance to the implementation of college English curriculum, puts forward the emphasis on personalized teaching and independent learning based on the computer and classroom teaching model, mobile learning for college English learning provides a new implementation[1]. The study of college students is scattered in different places, such as classroom, online courses, library, family and transportation, across formal learning and informal learning situations. Mobile learning can provide learning opportunities anytime and anywhere, and may seamlessly integrate different learning.

Vocabulary as one of the three elements of language and the basic unit of language constitution, unified language structure and language meaning. Linguists believe that, in order to properly use foreign languages, we can not ignore the grasp of sufficient vocabulary, otherwise the structure and function of language can not be properly expressed and applied. "Vocabulary is the driving force of language output", "no grammar can not be good expression, and no words can not express anything", which are the different aspects from the emphasis on the importance of vocabulary. In Chinese English learning, vocabulary has always been the basic and key of English teaching in various sections. If there is no vocabulary support, listening comprehension, oral expression, reading comprehension, written expression, translation ability, which can not achieve the desired goal[2]. China's vocabulary teaching workers and researchers have been struggling to enhance the effect of the problem, the learners also feel the pressure on vocabulary learning. The new teaching model should be supported by modern information technology, especially network technology, so that the teaching and learning of English can be developed to a certain extent without the time and place to the direction of individuality and independent learning[3]. Mobile learning breaks through

the time and space constraints in traditional teaching model, making students become passive learning to take the initiative to learn, so the vocabulary learning model based on mobile learning is the future development trend. Aiming at the current situation that many college students like to use word memory APP, this paper designs vocabulary learning system for college vocabulary, so as to improve the quality of college English teaching.

Major English Vocabulary Learning APP

English vocabulary learning APP are so many, we commonly use including "BaiCiZhan, scallop in Shell words, youdao, Kingsoft words, LeBei, Happy word field, GeLiBei, Word memory king, XueYi, LeCi", this paper describes four most widely used:

(1) BaiCiZhan, is for English learning and development of the "picture reciting word software", each word provides fun pictures and example sentences, and let reciting words become a pleasure. The main features are as follows: support offline use, zero flow reciting word; a word with a picture, the use of graphics to establish the word and the real link of environment to create the easiest to remember and the most memorable reciting word software; directly add friends, both see each other learning state and also sprint the weekly list. Reciting words, no longer a person; provide words TV and words radio, English teachers create interesting content by themselves to deeply unscramble words, provide more learning methods; reference to the United States SAT vocabulary assessment model, accurate test word, record each step of growth; lock the screen to recite words, in the lock screen interface can perfectly reciting words, take full advantage of the trivial time every day; "middle school / high school / College English Test Band 4 /College English Test Band 6 / Graduate English/ TOEFL / IELTS / TEM-4 / TEM-8 / SAT / GRE / GMAT" full coverage; various ways to review, recite words can not repeat and once more.

(2) Happy word field, through the game of learning, testing and review to break through the model, master the vocabulary, add learning fun, which is to meet the all-age, all-class, all-occupation users' need to recite the multilingual words tool. It has the following characteristics: the use of game to break through the recitation of the word design concept, in order to reduce the user's boring reciting sense. Through the elements of the game to break through, with abundant breakthrough scene and simple fun interaction, combined with the unlocking level and review level mechanism to bring users fun and efficient experience. Variety of incentives, gain the word energy after breaking through the words, so that users have a sense of accomplishment; word energy can accumulate the model to encourage users to continue to recite; list, friends list and the same list of words list, encourage users to be on the list as target. Reasonable knot node set up sharing mechanism, allowing users to share the results of reciting, reverse to promote recite. Excellent community culture, positive learning atmosphere, in the team recitation and vocabulary community to find like-minded friends to learn together.

(3) LeCi, is the New Oriental owned LeCi network technology company developed English word memory APP, contains rich and authoritative word content, more New Oriental teacher's exclusive speech video, support offline learning and search words. The main features are as follows: personalized learning, tailor-made personal learning plan for the learners; best word content, standard pronunciation, word frequency division, classic picture; according to Ebbinghaus memory curve to recite words, with Chinese reciting word learning habits, developed unique English word forgotten algorithm; humanistic feelings, not only the word learning tools, but also mentor; intimate design, support offline use, dynamic reminders, easy to learn; authoritative pronunciation, senior English experts to pronounce, create real language environment; the widest range, including GMAT, SAT, TOEFL and other mainstream learning objectives.

(4) Word memory king, is a left brain cognitive, right mind shorthand, animation games, intelligent training, intelligent evaluation, forgotten review reminder, and man-machine interactive English word learning tools. Using the method of memory used by a master, a word write a memory method, each word can only be seen one time for fast memory. Memory king neural network super algorithm let short-term memory to long-term memory, according to the algorithm to help learners to analyze the words and the memory level of familiar words, accurate calculation of memory after

the forgotten critical point, dynamically adjust the memory engine, in the best review time to remind learners to review, on the basis of permanent memory, reduce the time and effort paid by learners. The main features are: large vocabulary, memory animation reciting words, intelligent arrangements for learning content, timely review plan, word pronunciation training, intelligent evaluation system, memory training, detection and elimination of fatigue, memory cloud synchronization, and reciting words with friends.

Storage Structure Design

Storage structure is a representation of data element and element in computer in order to solve the problem of space, or to solve the time problem indirectly through space. Because of the large amount of college English vocabulary, in order to improve the storage efficiency and read efficiency of data, the database system is used to store data. In order to carry out all-round English vocabulary learning, provide learners with comprehensive vocabulary information, while reducing information redundancy and data independence, the storage structure is designed as "part of speech, vocabulary and example sentences" three entities, there is a pair of one-to-many and a many-to-many relationship, that is, "category" and "vocabulary" is a one-to-many relationship, "category" contains multiple "vocabulary", a "vocabulary" can only belong to a "category" "vocabulary" are multiple "sentence", a "sentence" can belong to a number of "vocabulary". The conceptual structure of the vocabulary storage structure represented by the E-R diagram(Entity Relationship Diagram) is shown in Fig. 1[4].

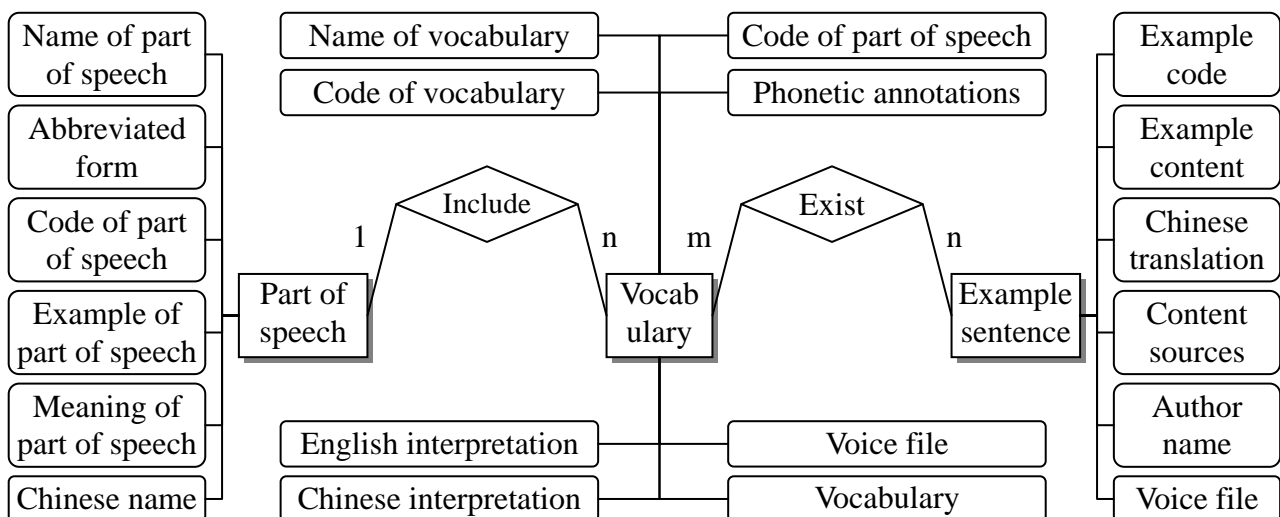


Fig. 1. E-R diagram of vocabulary storage

Functional Structure Design

Function is an attribute that object can satisfy certain requirement. Software function is the effect and the role of software should have, the software goal express and realize through the software function, the software function is also the presents directly effect to the user. Users through the software to provide the function to understand, use and evaluation system, through the use of software functions to complete business work. College English vocabulary learning system is divided into two main functions like system management and vocabulary learning, the functional structure shown in Fig. 2 [5,6].

System management is the auxiliary function of the software system, and is designed to support the operation of the system. The system management of the software includes seven functions: User login, users through the login interface to enter the system, which is the only channel to the system; User registration, users must use the system before registration, and enter the relevant personal information; Users rights management, user's authority to the distribution, recovery, change and other operations; Data backup recovery, for the security of system on a regular basis for data

backup, when the problem occurs, the data recovery; Vocabulary information maintenance, the addition of words to modify and delete operations; Classified information maintenance, add and modify the word class and other operations; Example sentence maintenance, the operation of adding and removing words and phrases.

Vocabulary learning is the core function of system, specifically designed for college English mobile learning function, the software vocabulary learning includes seven functions: Vocabulary autonomous learning, is the system to use the highest frequency of function, students learn vocabulary mainly use this feature; Vocabulary pronunciation training, many students learn to use, you can monitor each other, mutual guidance and common progress; Vocabulary collaborative training, the use of pure American English standard pronunciation, through repeated training to standardize the pronunciation of English; Vocabulary collaborative training, Offline learning, taking into account the network traffic and other factors, you can learn the vocabulary content to download to the phone, the use of offline learning; Vocabulary review reminder, for the study of the vocabulary, the system records the degree of mastery of the user, forget the frequency of higher vocabulary intelligence testing, through the intelligent test, evaluation of student vocabulary learning situation; Vocabulary learning plan, students can develop their own learning plans to improve efficiency.

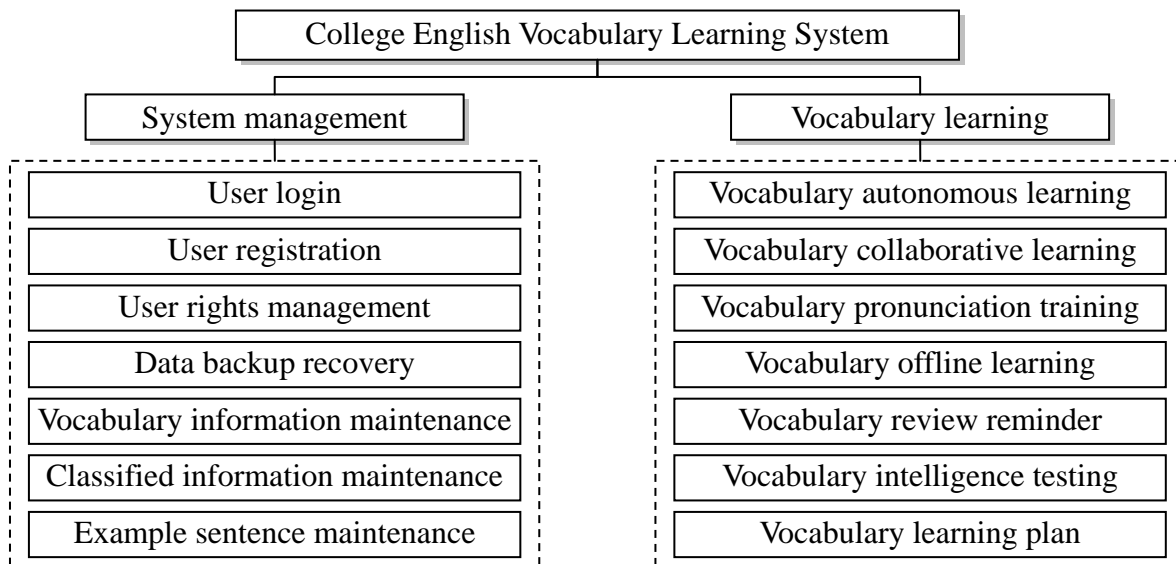


Fig. 2. Functional structure on college English vocabulary learning system

Terminal Adaptation Design

There are wide variety of mobile terminal equipment, and the WAP system must be able to provide the appropriate service content and form according to the specific terminal equipment. Because different mobile devices have different system characteristics, even if the same operating system, the same brand of mobile terminals, due to the different versions of the system need to provide different interfaces[7]. Therefore, you need to adapt to a single device type. Adapted content includes screen resolution, whether the touch screen, page hotkey, network and sound drivers, navigation bar, page cache, images and animation. The timing diagram of the terminal adaptation process is shown in Fig.3.

The user sends the access request through the mobile terminal browser, the business logic of the Web server obtains the mobile terminal model, the Web server sends the mobile terminal model as the condition to the database server to issue the query request, the database server returns the adaptation parameter to the Web server, the business logic of the Web server according to the adaptation parameter for personalized adaptation, adaptation structure return to the mobile terminal browser for users to use. Some less commonly used and newer mobile terminal models, the

database may not exist in the corresponding adaptation parameters, then the deal with the default value.

According to the adaptation process shown in Fig.3, the need to frequently access the database, increasing the load on the database server, it must be optimized and can be used in two ways: first, the mobile terminal parameter information load into the Web server memory, when the mobile terminal to the Web server, send a request, automatically store in accordance with the parameters stored in memory[8]; second, the use of space for time, for the commonly used system functions, in advance to generate a variety of forms of each media, when the mobile terminal access to the Web server, automatically return to the terminal for the media format, although the use of more storage space, but save the media format conversion time. Practical applications can be combined with two programs.

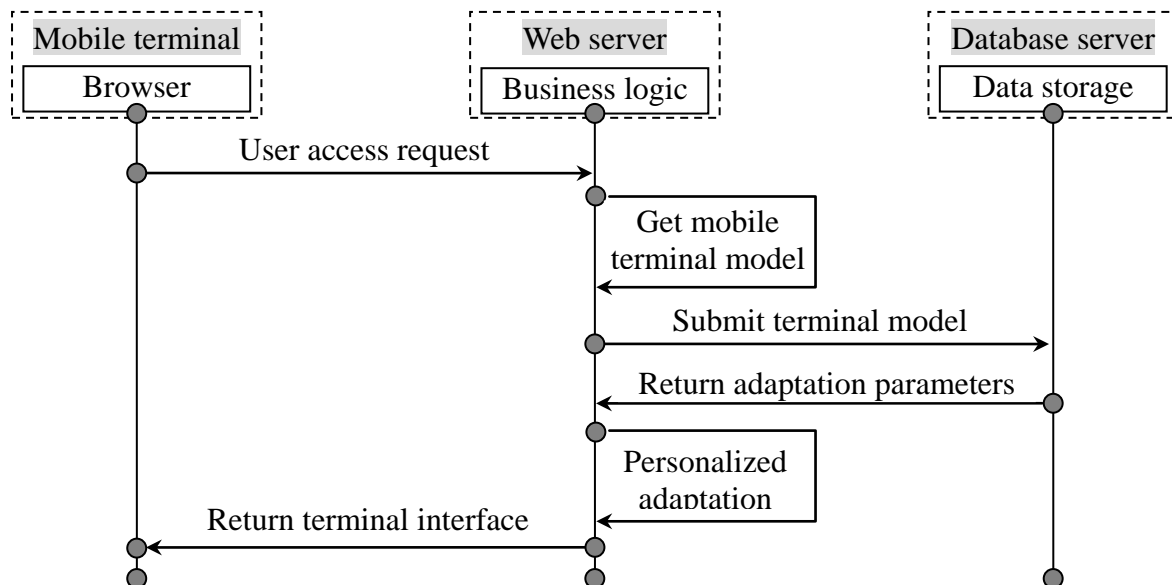


Fig. 3. Timing diagram of adaptation process

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