

Computer Specialized English Vocabulary Teaching in Mobile Learning Environment

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ABSTRACT. In the traditional process of Computer Specialized English Vocabulary Teaching, textbooks have weak links with practice, Teaching method is obsolescence and students are lack of interest. This paper will briefly analyse the characteristics of computer professional English vocabulary and discusses a new vocabulary teaching method with the assistant of the WeChat Mini Program learning resources.

KEYWORDS: Computer professional english, Vocabulary learning, Wechat mini program

1. Introduction

English is dominant in the computer field, computer technology derived from English speaking country, and most programming languages use English as their native language, the significance of English in computer field and programming cannot be ignored [1]. The development of computer technology is so quickly that the ability of reading English document and material become necessary in learning new technology and acquiring new knowledge, because vocabulary is fundamental in language learning, computer professional English vocabulary occupies an important place in the study, practice and research of information technology.

The teaching of computer professional English vocabulary usually adopt traditional teaching method, which leading to reluctant teaching effect and poor academic performance. This paper focuses on the building of mobile learning resources of computer English vocabulary and discusses a new teaching method with the assistant of WeChat mini program.

2. Dilemma of Computer Specialized English Vocabulary Teaching

Obsolescence teaching method and unattractiveness content and weak link to practice are three problems in computer specialized English vocabulary.

(1) At present, the content of computer specialized English vocabulary comes from the textbook, contains words about computer hardware, architecture, software, computer network, programming language and multimedia. It's link to practice is weak.

(2) Teachers major in computer science who got CET-6 certificate are chosen to teaching computer specialized English, because they are computer-literate, but those teachers may lack systemic English teaching skills, the process of learning vocabulary becomes translating words one by one.

(3) Computer specialized English course is offered to junior students, they prefer to spend their time in practical courses such as programming rather than in English course. Juniors, especially who have weak English foundation, lack study interest in computer specialized English vocabulary.

The computer specialized English course adopts the theoretical teaching method, it's boring and lack practice, and students feel these words are hard to remember and difficult to learn, when they encounter these words in documents or computer prompt information, students just cannot recognize these words or understand their meanings. When students need to use some words in their study, they just remember those words by rote which is inefficient.

3. Compilation of Computer Specialized English Thesaurus

Computer specialized English is included in scientific and technical English, with relatively simple grammar, it's easy to understand as long as students having enough vocabularies. In AWL(Academic Word List), 2000 words are enough to cover 79.7% of text, that means students can mostly understand the text by grasp of fewer core words. It's important to compile computer specialized English thesaurus.

Computer technology has a large span from hardware, software, network, multimedia to programming etc. It's difficult to construct word lists that cover all of these fields start from scratch, some mature dictionary such as "Microsoft Computer Dictionary" and "Commonly used Computer word list" from iciba.com can be used as sources of thesaurus; furthermore, common words in programming, prompt and command should be added into the thesaurus to strengthen links to practice.

4. Characteristic of Computer Specialized English Vocabulary

After words were collected in the thesaurus, all of the words were arranged in alphabetical order. Reorganizing these words by their characteristics will be need to strengthen links between words, which can be helpful to vocabulary learning. Semantic extensions, compositions and abbreviations are features of Computer specialized English vocabulary.

(1) Some words have extended meanings in computer fields, such as "bus" means a electrical connection between the components of a computer system , which has similar topology with the bus traffic line; And "window" has a denotative meaning to describe a rectangle space on the screen in graphic user interface, and "windows" means GUI operating system that employs "window" as an user interface.

(2) There are many compound words in computer English vocabulary, some words are formed by two independent nouns, such as motherboard(mother + board) and username(user + name); others are reconstructed by adding affix to a stem, such as multimedia(multi prefix + media stem) and visible(vis stem+ ible suffix).

(3) Abbreviations are used to express long terms in a brief way, there are acronyms such as CPU(Central Processing Unit),OS(Operating System),ROM(Read Only Memory) and other abbreviations that shorten original words such as ctrl(control), config(configuration).

5. Construct Mobile Learning Resources

Computer specialized English vocabulary contains a large number of words and terms, it's very challenging to learn the whole vocabulary in limited class. Students who have been in a passive learning state naturally have no desire to learn actively, it's necessary to introduce mobile learning to English vocabulary class. Students can access the mobile learning resources whenever they want in any place, they also can choose chapters by their own pace, mobile learning will motivate students' independent learning.

In addition to words and terms, a corpus will be involve in the online learning resources. A corpus is a database that stores language materials and studies the characteristics of target language by storing original corpus text or annotated text [2]. Furthermore, example sentences and related images or texts can be utilized to improve the learning efficiency.

5.1 Information Technologies Involved in Mobile Learning System

Along with the establishment of 4 G mobile network and the popularity of smart phone, E-learning gradually migrated from computer terminal to mobile terminal. Learn on mobile terminal is more flexible than on computer terminal, students can make better use of fragmented time in study. Considering the popularity of WeChat, WeChat Mini Program can be adopted to build computer specialized English vocabulary learning system. No need to download and install before use, high security, quick launch, highly extended and easy to maintain, these advantages make Mini Program became a hotspot of developing applications. WeChat Mini Program is quite lightweight, few data can be stored in Mini Program, so it can be used as front-end technology to provide a interface for students.

In the back-end, the mobile learning system needs to store large data such as words, text, image, audio or video materials, a database management system will be needed to manage all of these data. Open source DBMS can be chosen, such as MySQL, for its' portability and high performance. And Django web framework can be used to develop the data management system, Django is a high-level Python Web framework that encourages rapid development and clean, pragmatic design, which makes it easier to build better web apps more quickly and with less code.

5.2 Optimize the Computer Specialized English Vocabulary Learning System

Vocabulary mobile learning resource can be optimized according to the characteristics of computer English, images related to the word can be provided in the learning system. Using multimedia to making the word more intuitive and more concrete will alleviate students' cognitive load and help students to understand the word [3]. Words with extended meanings will be displayed with their common meanings and extended meanings, the link between two meanings will be shown too. Such as the word "bus", an image about the bus traffic route and an image about the computer bus architecture will be shown contrastively, students can understand the extended meanings contrast with common meanings intuitively.

Compound words' structure will be shown with independent stem or affix, as long as students learned an affix, they can understand other words with the same affix easily. Such as affix "re" means "back to the original place; again, once more", words with prefix "re" such as "reboot, restart, refresh, review" can be easily understood. Words with the same stem such as "visitor, visible, visual, vision" can be remembered quickly because they all have the same stem "vis" which means "see, sight".

Full expression comes after the abbreviation, furthermore, related abbreviations will be list below. Such as "HTTP, FTP, TCP, IP", they all belong to network protocol, "DB, DBMS, DBS" are related to database.

What's more, words related to each other will be display as word families, student can study all words in the same word families synchronously, and encounters the words more often. The first relationship between words is correlations, such as "motherboard, CPU, memory, keyboard, mouse, monitor" are all hardware; other words have same stem or affix, such as "multimedia, multiuser, multitask" have the same prefix "multi", and "programmer, hacker, processor" have the same suffix "er/or"; the last relationship of words is antonym, such as "show" opposite to "hide", "hardware" opposite to "software". Putting related words together can be helpful to remember the words, because related words will be learned synchronously when one word shows. The Mind Map can be used to present the relation between words, as shown in Figure 1.

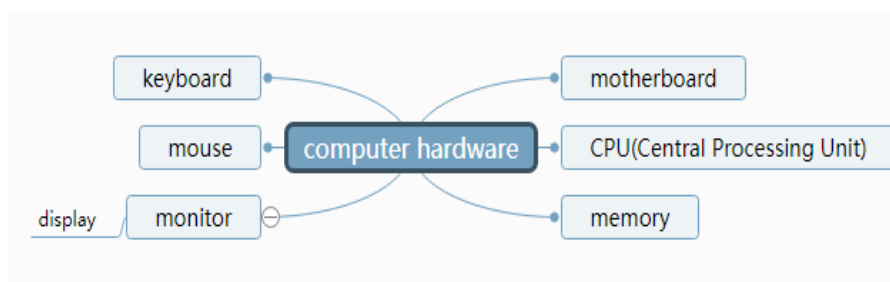


Fig.1 Word Family of Computer Hardware

6. Implementing Mobile Learning in Computer Specialized English Vocabulary Course and Enhancing students' Performance.

The main problem in vocabulary teaching is that "input a large number of words at a time, teachers teach new words in the vocabulary list individually, the repetition rate of new words is low in the teaching material, and there is no timely vocabulary practice. As a result, students can not integrate ". M.Hoey theory of lexical trigger (lexical priming) points out that the application of a word trigger in a discourse is the result of a person's multiple encounter (encounters) of the word product effect (cumulative effects); The accumulation of words needs to be repeated in different contexts in different collocations to complete the [4]. For the teaching of English vocabulary in computer major, students can learn online vocabulary resources independently. The advantage of this method is that students can repeatedly learn and practice and test. In the off-line classroom, some key words are explained and their application in computer operation or programming is displayed, so as to strengthen students' understanding and mastery of vocabulary.

7. Conclusion

The acquisition of computer specialized English vocabulary plays an important role in the study of computer major and is also a long-term accumulation process. In this learning process, online learning resources can be provided to students through WeChat Mini Program of computer major English vocabulary, which can improve students' interest in learning and reduce the cognitive load of learning. In the course of teaching, teachers should reform teaching ideas, introduce more materials in professional English vocabulary teaching, show students the context in different forms of vocabulary, and help students accumulate vocabulary.

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