

Characteristics of Computer Major English Vocabulary

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Abstract

Vocabulary is the building material of language and is one of the three major elements of language. D. A. Wilkins once stated that "without grammar, little can be expressed; without vocabulary, nothing can be expressed". The study of English in computer science provides a linguistic foundation for further study and research. English vocabulary is the smallest unit of language in computer science. Mastering English vocabulary is a characteristic of computer science majors that will lay a solid foundation for further study. Computer English is a specialized branch of the English language, characterized by a significant number of professional vocabulary and terms related to computers. To a large extent, it utilizes common higher vocational English words to create a new computer English vocabulary. As the foundation of English language knowledge, computer professional English vocabulary shares similarities with traditional basic English vocabulary, but it also possesses some distinctive characteristics. This paper summarizes the English vocabulary of computer science majors, analyzes the characteristics of English vocabulary in computer science from various perspectives, and outlines further research for relevant learners.

Keywords

Computer major English, vocabulary features, vocabulary analysis, lexical feature

As we all know, computer technology is updated quickly and mainly comes from English-speaking countries, and we are often restricted by language barriers when introducing these technologies. On the one hand, although there are many computer translations on the market, influenced by the knowledge level of the translator, coupled with the delay caused by translation and publishing, we accept not only the original ideas but may even be outdated technology. Therefore, the best way to solve this problem is to read the latest original material. On the other hand, for professional IT practitioners, the demand for professional English knowledge is everywhere: when using hardware, many of them are English interfaces and instruction manuals; the software code exposed at work is almost all written in English, sentences or symbols; software developers often need to write English, version of software requirements documents and user guide; many resources obtained on the vast Internet are also in English. Therefore, it is very necessary for students to learn computer English. In today's society, the computer has become one of the essential tools in people's daily work and life. The computer has developed at an amazing speed since its birth, its hardware and software are updated in geometric series, and the terms of related professional fields are also changing with each passing day. After years of development, China has made significant progress in computer science and technology. However, the computer itself is of foreign origin, and the original computer development platform is based on English. Additionally, many computer software tools have internal coding based on the English language. Although many of the latest computer-related books are translated into Chinese, due to the lack of professional

computer knowledge and the limitation of personal understanding, problems often occur in the process of learning and operation according to the translation (Zhao Yujing, 2023). Therefore, to comprehend the latest advancements in computers, a thorough study of computer professionals is essential, requiring extensive reading of original computer English books, literature, and materials. For the above reasons, students want to make some achievements in the field of computer science, and the improvement of English level and computer major English learning will bear the brunt. In order to better learn computer English, the author will analyze the vocabulary characteristics of computer English from the following aspects.

1. English vocabulary characteristics of computer majors

The English vocabulary of the computer major is the minimum component unit of the computer major language, which is the basis and key to learning the computer major English well. Therefore, learners must understand the characteristics of the English vocabulary of the computer major. Except for the common words derived from general English, the vast majority of professional terms are composed of new ideas, derivatives, acronyms, and compound words.

1.1 Old words are new

The evolution and development of vocabulary in a language is closely related to the development of society. In order to adapt to the development of society, vocabulary can change at any time. Computer major English vocabulary has absorbed some vocabulary in contemporary related fields and created a large number of new vocabulary. After undergoing semantic changes, these words have emerged in the computer professional field with a new semantic language. For example: bus, bus, bus in computer expertise; mouse, mouse, extended for mouse; Memory, memory, extended for memory, bullet bullet, extended for bullet, unit, unit, extended for parts.

1.2 Derivation of the words

Affixing is a kind of derivative method, that is, with the help of affixes to form new words, the new word composed of affixes is also called a derivative word. The new words formed by this method have a certain connection with the original root in meaning, and the meaning may be similar or completely opposite, depending on the prefix added. For example: multi-many, The multi-media (multimedia), multitasking (Multitasking), Multi-user (multipleusers), multiprocessing (Parallelprocessing); tele-electron, telecommunication (Electronic communication), teleconference (Teleconferencing); The micro-micro, microcomputer, Microsoft; -er, noun suffix, After a noun, Means... of people, Or the instruments of..., Like: driver (drive), server (Server), reader (Reader), scanner (Scanner).

1.3 Acronyms

With the development of science and technology and the popularization of computers, professional terms are used more and more widely. In order to better popularize, apply, and communicate, concise and clear acronyms are widely used in computer major English.

An acronym refers to the form of a new word or a proper noun formed by combining the first letter of each phrase. Each letter is in capital form. Such as personal computer, ICT technology, Information and Communications Technology referred to as ICT, operating system Operating System, OS, basic input/output system, Basic Input/Output System, BIOS, CPU, central processing unit, CPU, read-only memory Read Only Memory, ROM, etc.

1.4 Compound words

The method of arranging two or more words in a certain order is called compound words, and the new words formed by this method are called compound words. In the field of computer science, with the continuous emergence of new concepts and new ideas, the application of compound words is also everywhere. There are various forms of compound words, including noun + noun, adverbs + verbs, adjectives + nouns, and so on. The spelling characteristics of compound words: (1) are directly composed of two parts forming the new word: such as database, database, network, network; download, download; upload; upload (Wu Yunying, 2022); the two parts forming the new word are hyphen (-) links: advanced, high-level; low power, low-power; professional quality, professional-quality; general, general-purpose, etc.

1.5 General English vocabulary specialization

Many computer professional English words are derived from the meaning of ordinary English words, the original word form remains unchanged, but adds a new meaning, namely the so-called new meaning of old words. For example, memory is

originally called "memory", which is a computer becomes "memory". Examples: windows (window)—windows (window); bus (bus)—bus (bus); mouse (mouse)—mouse (mouse); revolution (revolution)—revolution (speed) and so on. There are three main trends in the semantic change of old words and new meanings: word meaning expansion, word meaning narrowing, and word meaning transfer. The expansion of word meaning generally means "generalization", and the identity and meaning of the old words have changed to varying degrees. The narrowing of the meaning has the meaning of "exclusive reference". Network The word originally refers to a system composed of many interlaced branches. After the meaning is narrowed, it refers to a computer system composed of a variety of components used to transmit electrical signals. The transfer of word meaning refers to the original concept of meaning extension obviously breaks through the meaning category of the original meaning and enters the field of other meaning fields, that is, the transfer of word meaning from the non-scientific field to the field of science and technology, such as revolution, bus and so on mentioned above.

1.6 From foreign language

With the increasingly frequent international scientific and technological exchanges, more and more foreign words are absorbed by English, including Latin and Greek phonemes more, such as the prefix tele- (Latin phoneme) means "remote, remote, telex", such as telemeter (telemetry), telecommunication (telecommunication); and the prefix multi- (Latin phoneme) means "more", appeared multimedia (multimedia), multichannel (multiple channels) and so on. Both syn- (common) and ion (device) are from Greek lexemes, forming synchrotron (synchrotron); the Greek prefix hyper-means "over", constituting hyperlink (hyperlink), hypertext (hypertext), etc. According to the research of Pyles and Algeo (1982), affixes constitute 3%-40% of the total new words; compound method 28%-30%; cut (abbreviated method) 8%-10%; mixed method or other methods 1%-5%. A deep understanding of the English vocabulary composition of computer majors can help us to use more effective learning strategies in the process of vocabulary learning and reduce the learning burden.

1.7 There are more fixed words and new words

Using prefixes or suffixes to form new words, which understand the meaning of prefixes and suffixes, such as e-prefix, for "electronic", thus creating a number of related words such as: "e-commerce" (e-commerce), "e-mail" (email), "e-journal" (e-magazine) and so on. The emergence of "ber" (network) has brought us more than 200 new English words: cyberculture (network culture), cybershopping (online shopping), cybersurfer (Internet surfer), and so on. The more commonly used computer professional English vocabulary prefix is also multi- (many): multimedia (multimedia), Multi-link (multi-link); The self f- (automatic, Self): self-clocking (self-synchronization), self checking (Self-test); LE- (remote, telex): telecomputing (remote computing), teletraffic (Telecom services); trans- (span, cross, transfer): transender (transponder), transmission (Transmission) and so on. After the suffix is placed in the root, the meaning of the new word is basically the same as the original word, but the shape of the word has changed. For example, the suffix of a noun includes: -time / -ion / -ion / -ation / -session / term / -ness / -city, etc. It is very important to grasp the meaning of the suffix to analyze the grammatical function of the word in the sentence and the correct use of the word.

1.8 Extensive application of compound words

Computer major students generally believe that English vocabulary for computer majors is longer and more complex than ordinary English vocabulary. The main reason is that there are many compound English words for computer majors. The compound method is one of the oldest word formation methods in English, and the growth of compound nouns is particularly obvious. It can be converted from prepositions and verb phrases, or it may be composed of adjectives, nouns, nouns and verb nouns, and past word segmentation. For example, backup (backup), sign-on (login), online (online), bandwidth (bandwidth), disk (plug and play), hardware (hardware), software (software), and so on. Some seemingly simple compounds actually express extremely complex things or properties, such as firmware (firmware) for parts in a computer, rather than literally meaning a simple meaning.

1.9 Use more abbreviations

This kind of word formation method mainly uses cutting and initial letter combinations to compress and simplify the original word, making the meaning of the word more concise and clear, easy to remember and use. Acronyms cover all areas of social life and are increasing in numbers. Mainly by retaining the initial letter of each word in the English phrase: such as the most recent focus IOT-Internet of Things (Internet of Things), 3G-3 Generation (third-generation mobile communications), etc., More common are LAN-Local Area Network (LAN), DDN-Digital Data Network (Digital Data Network), CPU-Central Processing Unit (central processor), ROM Read-only Memory (read-only memory), etc. Another abbreviation is a simplified

abbreviation, such as "app" is a simple abbreviation for application, meaning "app" to represent the most popular thing of 2010—. And combinations, such as MODEM (modulator + demodulator) (transmitter + receiver) (modem), transceiver (transceiver), hi-tech (high + technology) (high-tech), etc.

2. Computer professional English vocabulary composition method

2.1 Add righteousness method

"The professionalism of computer major English is reflected in its special professional content and special professional words (professional terms), and vocabulary is the basic element of the sentence. Without determining the meaning of the vocabulary, it is difficult to understand the sentence, because the material of computer English is mostly obscure to understand. Many public English words in the field of computer science to give new". The method of giving new meaning to old words is called adding meaning method, that is, giving meaning to ordinary English vocabulary computer science. He had to run to catch the bus; and in computer English, its common meaning is to run: Do you want to run the game in safe mode (do you want to run the game in safe mode)? In fact, this kind of computer English vocabulary is already a familiar word. When learning such words, it is more to understand than to remember. Based on the basic meaning of words, according to the context of computer knowledge analysis, select the exact meaning of the words, and accurately understand the true meaning of the sentence.

2.2 Derivation

"W. Nelson Francis pointed out in *The English Language and Its History* that vocabulary is the most loosely structured part of a language system, and is, therefore, the most likely to change. The vocabulary system is an open system for development. It not only provides useful words to it, but also enriches and expands itself in the mutual penetration, derivative and transformation of various vocabulary. The computer English vocabulary system is no exception, and the frequent occurrence of new words formed by the derivation method is one of the most prominent features of the computer English vocabulary" (Li Ji, 2021). Computer English contains a large number of derivatives (derivative). The derived word is composed of a prefix (affixation), usually with a prefix (prefix) or a suffix (suffix) on the stem (root), to form a new word. Each prefix of computer English vocabulary expresses a clear computer knowledge. To the root: internet, interface, interconnection. For example, micro-miniature: microprocessor, microsoft, microchip, microcode, microcomputer, etc. The analysis and summary of the form and meaning of the words can promote the understanding and memory of the derived words, and can greatly expand the vocabulary, so as to promote the reading and application of computer English.

2.3 Compounding

Combination is a method of arranging two or more words in a certain order to form new words. The words formed in this way are called the compound word (Zhu Shiping, 2021). Compound words mainly include compound nouns, compound adjectives, compound verbs, and several categories, usually, there are hyphens between compound words. As shown in end-user, low-level, real-time, et al. With the widespread application, the hyphens of some compound words have disappeared. For example, keyboard, homepage, firewall, wideband, upload, chatroom, etc. The teaching of compound words requires us to find out the order of compound words and restore their original individual words so that it is much easier to learn.

2.4 Abbreviation

Another striking feature of computer English is that its abbreviation is extremely rich in its vocabulary. This kind of word is short and capable, expression can avoid procrastination, instead of the original lengthy expression, so often replaces the original vocabulary, widely used in computer English. On the other hand, this also reflects the needs of people's fast-paced lives in the modern information age. An abbreviation is called a word called abbreviation, and it can be divided into two types. One is to process the original complete word, abbreviating a part of the letters to form a new word, which is called a shortened word. These kinds of words, especially reflected in the menu, prompt, DOS, and WINDOWS commands, can play the effect of one as ten, simple, such as dir (directory column directory), del (delete deletion), and other (Li Jiahui, 2021). The other is to combine the opening letter of the main word in a phrase into a word, which is called the acronym. Abbreviation in computer English vocabulary, mainly the initial acronym. Such as I/O (Input/Output input/output), CPU (Central Process Unit-CPU), HTML (HyperText Markup Language, namely hypertext markup language), etc. The thumbnail method is convenient and saves time, and the application of computer English vocabulary is increasing, and also more and more widely used. Therefore, the CPU is more commonly used than its full name "Central Process Unit or CPU", and the CPU

performance and speed are not the CPU performance and speed. When teaching abbreviations, understanding word composition can aid in learning and memory. Usually can pay more attention to, and list these kinds of common words, in reading, reviewing, and consolidating the learning effect of computer professional vocabulary.

3. Conclusion

Computers are becoming increasingly integral to people's lives. Computer-related English vocabulary is constantly infiltrating daily life. Therefore, whether one is a computer science student or an average computer user, acquiring a certain level of computer English vocabulary will be beneficial for future studies and daily life. Although the vocabulary in higher vocational computer English is not as complex as that in professional fields like landscape or biology, it still has its own unique characteristics. With the development of information technology and computers, there will be additional characteristics emerging. In teaching, in addition to analyzing the language characteristics of vocabulary, computer English is typically introduced after the third semester. It can also be integrated with and leverage students' professional background knowledge to enhance their learning and retention of professional vocabulary, thereby facilitating the teaching of computer English. This paper analyzes the characteristics of English vocabulary for computer science majors and aims to share them with relevant individuals.

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