

THE FORMATION AND STRUCTURE OF TECHNICAL TERMINOLOGY IN ENGLISH

Salomova Sevara Choriyevna
Student of Termiz state university
salomovasevar@gmail.com

Annotation: This article explores the formation and structural features of technical terminology in the English language. It analyzes the linguistic processes involved in the creation of terms in scientific and technical fields, including borrowing, compounding, affixation, and abbreviation. The paper also discusses the importance of clarity, consistency, and international standardization in technical language.

Keywords: Technical terminology, term formation, word structure, compounding, affixation, abbreviation, standardization

“ФОРМИРОВАНИЕ И СТРУКТУРА ТЕХНИЧЕСКОЙ ТЕРМИНОЛОГИИ В АНГЛИЙСКОМ ЯЗЫКЕ”

Саломова Севара Чориевна
Студентка Термезского
государственного университета
salomovasevar@gmail.com

Аннотация: В данной статье рассматриваются процессы формирования и структурные особенности технической терминологии английского языка. Анализируются лингвистические механизмы, такие как заимствование, словосложение, аффиксация и сокращение, играющие роль в создании научно-технических терминов. Также подчёркивается значение точности, последовательности и международной стандартизации технического языка.

Ключевые слова: техническая терминология, формирование терминов, структура слова, словосложение, аффиксация, сокращение, стандартизация

INGLIZ TILIDAGI TEXNIK TERMINOLOGIYANING SHAKLLANISHI VA TUZILISHI

Salomova Sevara Choriyevna

Termiz davlat universiteti talabasi.
salomovasevar@gmail.com

Annotatsiya: Ushbu maqolada ingliz tilidagi texnik terminologiyaning shakllanishi va tuzilish xususiyatlari o'rganiladi. Ilmiy-texnik sohalarda terminlar yaratish jarayoniga ta'sir etuvchi tilshunoslik hodisalari – so'z yasash, qisqartmalar, affikslar, so'z birikmalari va boshqa omillar tahlil qilinadi. Shuningdek, texnik tilning aniqligi, izchilligi va xalqaro standartlarga mosligi muhimligi ta'kidlanadi.

Kalit so'zlar: texnik terminologiya, termin shakllanishi, so'z tuzilishi, so'z yasash, affiksatsiya, qisqartma, standartlash

The rapid development of science and technology has led to the emergence of a vast number of new concepts and innovations that require precise and consistent naming. As a result, technical terminology plays a vital role in the accurate communication of scientific and technological information. English, being a global language of science and technology, has

developed a highly structured system of technical terms. The formation of these terms follows specific linguistic rules and patterns that ensure clarity, standardization, and efficiency. This article aims to explore the processes involved in the creation of English technical terminology and analyze the structural features that distinguish technical terms from general vocabulary. The formation of technical terminology in English is governed by several linguistic mechanisms, including borrowing, compounding, affixation, and abbreviation. Borrowing refers to the process of adopting words from other languages. Many English technical terms have Latin or Greek roots, which are considered prestigious and universal in scientific discourse. For example, terms like “thermodynamics,” “biology,” and “microorganism” are derived from Greek, while words like “data” and “formula” come from Latin. Compounding is another common method, where two or more existing words are combined to create a new term. In technical English, compounds such as “software engineer,” “data center,” and “network protocol” are frequently used. These terms are descriptive and help convey complex ideas in a simplified and recognizable form. Affixation involves the addition of prefixes and suffixes to root words. Technical terms often use standard affixes to convey specific meanings. Prefixes like “bio-,” “micro-,” “tele-,” and “auto-” and suffixes such as “-logy,” “-graph,” “-meter,” and “-scope” are commonly used to form specialized vocabulary. Abbreviation is a useful strategy for condensing lengthy technical expressions into manageable forms. Acronyms (e.g., “RAM” for Random Access Memory, “HTML” for HyperText Markup Language) and initialisms are widely used in fields such as computing, engineering, and medicine. These abbreviated terms improve communication speed and reduce redundancy, especially in written texts. In addition to these processes, English technical terminology is characterized by its systematic structure. Terms are often constructed with clarity and specificity in mind. Unlike general language, technical vocabulary avoids ambiguity and adheres to international standards. For instance, organizations such as ISO (International Organization for Standardization) and IEEE (Institute of Electrical and Electronics Engineers) contribute to the regulation and consistency of technical terms across disciplines.

The structure of technical terms also reflects the hierarchical nature of scientific classification. Terms are often built with components that indicate categories, subcategories, and specific functions. For example, in biology, the term “homo sapiens” represents a genus and species classification, while in chemistry, terms like “sodium chloride” or “hydrochloric acid” describe compound structures based on established nomenclature systems. The stability of technical terminology is crucial for knowledge transfer and international cooperation. However, the dynamic nature of science and technology means that new terms are constantly created. Therefore, terminologists and linguists work to update glossaries and technical dictionaries to reflect the latest developments. These efforts ensure that terminology remains a reliable tool for experts and learners alike. The formation and structure of technical terminology in English are shaped by a combination of linguistic creativity, scientific necessity, and international standardization. As new discoveries and inventions emerge, language evolves to accommodate them by generating new terms or adapting existing ones. English, having become the lingua franca of science and technology, uses a variety of word-formation strategies to meet the needs of precision, universality, and brevity in communication. One of the most fundamental methods used in the creation of technical terms is borrowing. English has a long history of adopting terms from Latin and Greek, particularly in academic, medical, and scientific domains. These languages are favored due to their neutrality (not favoring any modern nation) and their historical association with scholarly knowledge. For example, terms like photosynthesis, cardiology, and aerodynamics contain Greek roots, while radius, formula, and species come from Latin. These borrowed roots are often combined in English in various ways to form new, semantically transparent terms.

Another productive method is compounding, where two or more words are joined to create a new term with a specific meaning. In technical contexts, compounds can be either open (e.g., data analysis), hyphenated (e.g., high-speed), or closed (e.g., database). Compound terms are particularly useful in describing new processes, devices, or roles, such as cloud computing, laser printer, and waste management. They provide clarity and allow professionals to communicate complex concepts efficiently. Affixation is another crucial strategy. It involves adding prefixes and suffixes to base words to modify or extend their meanings. Common prefixes in technical English include bio- (life), auto- (self), micro- (small), nano- (extremely small), trans- (across), and tele- (distant). Suffixes such as -logy (study of), -meter (measuring device), -scope (instrument for viewing), and -graphy (recording) are used to form precise technical vocabulary. For instance, combining geo- (earth) with -logy results in geology, meaning “the study of the Earth.” This type of affixation helps maintain a consistent logic in term creation across various disciplines. Abbreviation also plays a significant role, particularly in fast-evolving fields such as information technology, electronics, and medicine. Acronyms like NASA (National Aeronautics and Space Administration), HTML (HyperText Markup Language), and AI (Artificial Intelligence) are formed by taking the initial letters of multi-word expressions. Abbreviations save time, improve communication speed, and reduce repetition, especially in technical manuals, research papers, and digital interfaces. However, excessive use can cause confusion for non-specialists, making standard glossaries important for understanding. Technical terminology is often designed with semantic transparency in mind, meaning that the structure of the term should reflect its meaning. For example, the term waterproof clearly indicates something resistant to water, and thermometer refers to a device that measures temperature. This transparency is particularly important in educational settings and international collaboration, where mutual understanding is essential. Another aspect of the structure of technical terms is their systematicity. In disciplines such as chemistry, biology, and medicine, standardized naming systems have been developed to ensure consistency. In chemistry, the IUPAC (International Union of Pure and Applied Chemistry) nomenclature assigns names based on molecular composition and structure, e.g., sodium chloride or hydrochloric acid. In biology, the Linnaean taxonomy classifies living organisms using a two-part Latin name, such as *Homo sapiens*. These naming conventions reduce ambiguity and promote international collaboration in research and education. Furthermore, technical terms often follow morphological and syntactic regularity. They are frequently formed using nouns and adjectives rather than verbs, making them more adaptable in nominal phrases and descriptions. This regularity facilitates the integration of terms into texts, reports, and systems of classification without losing precision. The evolution of terminology is also worth noting. As technology progresses, terms can undergo semantic shifts or be replaced by more accurate or standardized alternatives. For example, the term wireless initially referred to early radio communication and now refers to Wi-Fi and mobile networks. Similarly, older terms like telegraph have become obsolete or specialized. This dynamic nature of technical language requires ongoing efforts by linguists and professionals to maintain updated and accessible terminology databases. A critical factor in the development and structure of technical terminology is international standardization. Organizations such as ISO (International Organization for Standardization), IEEE (Institute of Electrical and Electronics Engineers), and WHO (World Health Organization) play essential roles in creating and disseminating standard terminologies for global use. Standardization ensures that a technical term used in one country or language will be understood similarly in others, thereby facilitating research, trade, and education. Moreover, terminology management has become an essential field in itself. Terminologists, often working with translators and subject-matter experts, develop terminological databases, translation memories, and multilingual glossaries to ensure

accuracy and consistency across languages and disciplines. These tools are particularly valuable in multinational companies, international organizations, and academic publishing. Lastly, the influence of digital technology on terminology formation cannot be ignored. New fields like artificial intelligence, blockchain, and quantum computing are generating new terms at a rapid pace. Terms such as deep learning, crypto wallet, and quantum supremacy have emerged recently and are quickly being adopted globally. The internet also contributes to the viral spread of technical jargon, sometimes accelerating informal or nonstandard usages before formal approval by standardizing bodies.

Conclusion

In conclusion, the formation and structure of English technical terminology are essential aspects of scientific and technological communication. Through linguistic processes such as borrowing, compounding, affixation, and abbreviation, English creates terms that are precise, functional, and internationally understandable. The structured nature of technical vocabulary ensures clarity, reduces ambiguity, and supports standardization across various fields. As science and technology continue to evolve, so too will the terminology, requiring ongoing analysis and adaptation. Understanding these mechanisms not only helps linguists and educators but also enhances the ability of professionals and students to engage effectively with technical texts.

Bibliography

1. Algeo, J. (1991). *Fifty Years among the New Words: A Dictionary of Neologisms 1941–1991*. Cambridge University Press.
2. Cabré, M. T. (1999). *Terminology: Theory, Methods, and Applications*. John Benjamins Publishing.
3. Crystal, D. (2003). *The Cambridge Encyclopedia of the English Language*. Cambridge University Press.
4. Halliday, M. A. K., & Martin, J. R. (1993). *Writing Science: Literacy and Discursive Power*. Falmer Press.
5. Katamba, F. (1993). *Morphology*. Palgrave Macmillan.
6. L'Homme, M. C. (2020). *Lexical Semantics for Terminology: An Introduction*. John Benjamins Publishing Company.
7. Sager, J. C. (1990). *A Practical Course in Terminology Processing*. John Benjamins Publishing.
8. Wüster, E. (1979). *Introduction to the General Theory of Terminology and Terminological Lexicography*. Springer-Verlag.
9. ISO. (n.d.). *International Organization for Standardization*. Retrieved from <https://www.iso.org>
10. IEEE. (n.d.). *Institute of Electrical and Electronics Engineers - Terminology Standards*. Retrieved from <https://www.ieee.org>
11. Yule, G. (2010). *The Study of Language (4th ed.)*. Cambridge University Press.
12. IATE. (n.d.). *Interactive Terminology for Europe*. Retrieved from <https://iate.europa.eu>