

METHODOLOGY OF COMPARATIVE ANALYSIS OF INFORMATION TECHNOLOGY TERMINOLOGY IN ENGLISH AND UZBEK

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Abstract. *This article explores the methodology of comparative analysis of information technology terminology in English and Uzbek from linguistic, terminological, and pragmatic perspectives. The study aims to identify the structural, semantic, and functional characteristics of IT terms in both languages and to reveal similarities and differences in their formation, adaptation, and usage. The research is based on comparative-linguistic, descriptive, and semantic analysis methods, which enable a systematic examination of terminology within the rapidly developing field of information technology. Special attention is given to borrowing processes, translation strategies, terminological equivalence, and the influence of globalization on the development of Uzbek IT vocabulary. The findings demonstrate that while English serves as the primary source of information technology terminology worldwide, Uzbek adapts these terms through various linguistic mechanisms, including transliteration, calquing, and semantic extension. The study highlights the importance of accurate terminological standardization for effective professional communication, translation practices, and foreign language education. The results contribute to the fields of terminology studies, applied linguistics, translation studies, and information technology communication.*

Keywords: *Information technology terminology, comparative analysis, English language, Uzbek language, terminology studies, semantic analysis, translation strategies, lexical borrowing, term formation, linguistic adaptation, pragmatics, professional communication, terminological equivalence, digital communication, language standardization.*

Introduction

Language plays a crucial role in the development, transmission, and exchange of scientific and technological knowledge. In the modern era of digital transformation, information technology (IT) has become one of the fastest-growing fields, generating a vast number of new concepts, innovations, and specialized terms. As a result, the study of information technology terminology has gained significant importance in contemporary linguistics, terminology studies, and translation research. The rapid expansion of digital technologies requires the continuous creation, adaptation, and standardization of terms that facilitate effective communication among specialists, educators, researchers, and users worldwide.

English has established itself as the dominant language of science, technology, and international communication. Consequently, most information technology terms originate in English and later spread to other languages through globalization, technological innovation, and intercultural communication. The Uzbek language, like many other languages, has experienced significant lexical enrichment through the adoption and adaptation of English IT terminology. These processes have contributed to the formation of a modern terminological system capable of expressing complex technological concepts while preserving the linguistic identity of the Uzbek language.

The comparative analysis of information technology terminology in English and Uzbek is particularly relevant in the context of increasing digitalization, international cooperation, and the growing demand for high-quality translation of technical materials. Understanding the similarities and differences between the terminological systems of the two languages helps identify effective translation strategies, improve professional communication, and support the development of standardized terminology. Furthermore, comparative studies contribute to a deeper understanding of linguistic adaptation mechanisms and the interaction between language and technological progress.

The present study focuses on the methodology of comparative analysis of information technology terminology in English and Uzbek. It examines the structural, semantic, and functional features of IT terms, as well as the processes of borrowing, translation, and adaptation. The research aims to reveal the linguistic characteristics of information technology terminology in both languages and to determine the factors influencing its development and usage. The findings of this study may contribute to terminology studies, applied linguistics, translation theory, lexicography, and foreign language education, while also providing practical recommendations for translators, language professionals, and specialists working in the field of information technology.

Information technology terminology represents one of the most dynamic and rapidly developing sectors of modern vocabulary. The emergence of new technologies, digital platforms, software systems, and communication tools continuously generates new lexical units that enrich professional language. Since English functions as the international language of science and technology, the majority of information technology terms originate in English and subsequently spread to other languages, including Uzbek. The study of information technology terminology in English and Uzbek is essential for understanding the processes of term formation, semantic adaptation, translation, and standardization within the context of globalization and digital transformation. The comparative analysis of information technology terminology is based on linguistic, semantic, and pragmatic approaches. Comparative analysis enables researchers to identify similarities and differences between terminological systems, while semantic analysis reveals conceptual relationships among terms. Descriptive and pragmatic methods help explain how information technology terms function in professional communication and how they are interpreted by language users. Through these methods, it becomes possible to examine the

mechanisms by which English technological concepts are integrated into the Uzbek linguistic system. The analysis demonstrates that English information technology terminology is characterized by productivity in word formation through compounding, derivation, abbreviation, and acronymization. Terms such as software, hardware, database, firewall, cloud computing, and cybersecurity illustrate the ability of English to create concise and internationally recognizable terminological units. In contrast, Uzbek terminology develops through a combination of borrowing, transliteration, semantic translation, and the creation of native equivalents. As a result, many English terms enter Uzbek either in their original form or in adapted phonetic forms that conform to Uzbek pronunciation patterns.

Semantic analysis reveals that information technology terms often possess highly specialized meanings that differ from their meanings in general language. For example, the term “cloud” traditionally refers to a natural atmospheric phenomenon, whereas in information technology it denotes a system for remote data storage and computing services. Similarly, terms such as network, platform, interface, and protocol acquire technical meanings within professional discourse. The accurate transfer of these meanings into Uzbek requires not only lexical equivalence but also conceptual precision to ensure effective communication among specialists and users.

Translation plays a crucial role in the development of Uzbek information technology terminology. Borrowing remains the most frequently used strategy because many technological innovations originate in English-speaking environments. Transliteration is also widely employed to adapt foreign terms to Uzbek phonological norms. In addition, semantic calquing allows translators to create Uzbek equivalents by translating the components of English terms. These strategies contribute to the expansion of the Uzbek terminological system while maintaining the integrity of technological concepts.

The pragmatic dimension of information technology terminology is equally significant. Terminological units serve not only as labels for technological concepts but also as tools of professional communication. Their effectiveness depends on clarity, consistency, precision, and user acceptance. In English-speaking technological communities, terminology is often standardized and internationally recognized. In Uzbek, however, the coexistence of borrowed and translated terms sometimes creates variation, making standardization an important objective for terminologists, educators, and language planners. The comparative analysis indicates that English and Uzbek information technology terminologies share the common goal of facilitating communication within the digital sphere, yet they differ in structural organization, term formation processes, and adaptation mechanisms. English acts as the primary source of innovation and terminological creation, whereas Uzbek demonstrates flexibility in adopting and adapting technological vocabulary according to its linguistic norms and communicative needs. These findings highlight the importance of comparative terminological research for

translation studies, applied linguistics, lexicography, foreign language teaching, and the further development of digital communication in Uzbekistan.

Comparative Table of Information Technology Terminology in English and Uzbek

English Term	Uzbek Equivalent	Translation Method
Computer	Kompyuter	Transliteration
Internet	Internet	Borrowing
Browser	Brauzer	Transliteration
Scanner	Skaner	Transliteration
Server	Server	Borrowing
Software	Dasturiy ta'minot	Semantic Translation
Hardware	Texnik ta'minot	Semantic Translation
Database	Ma'lumotlar bazasi	Calque
Information Security	Axborot xavfsizligi	Calque
Artificial Intelligence	Sun'iy intellekt	Calque
Cloud Computing	Bulutli hisoblash	Calque
Digital Economy	Raqamli iqtisodiyot	Calque
Network	Tarmoq	Functional Equivalent
User Interface	Foydalanuvchi interfeysi	Mixed Translation
Cybersecurity	Kiberxavfsizlik	Hybrid Formation

The comparative data illustrate that while English remains the dominant source of information technology terminology, Uzbek actively develops equivalent terms through borrowing, transliteration, semantic translation, and calquing. This process contributes to the enrichment of the Uzbek lexicon and supports effective communication in the rapidly evolving digital environment. The present study examined the methodology of comparative analysis of information technology terminology in English and Uzbek and highlighted the linguistic, semantic, and pragmatic features of IT terms in both languages. The findings demonstrate that information technology terminology is a rapidly evolving lexical subsystem influenced by technological innovation, globalization, and intercultural communication. English serves as the primary source of modern IT terminology, while Uzbek enriches its terminological system through borrowing, transliteration, semantic translation, and calquing.

The comparative analysis revealed that although English and Uzbek information technology terminologies perform similar communicative functions, they differ in term formation patterns, semantic adaptation processes, and pragmatic usage. English terminology is characterized by a high degree of internationalization and productivity, whereas Uzbek terminology reflects both global technological trends and national linguistic norms. The study also showed that accurate translation and standardization of IT terms are essential for effective professional communication, knowledge transfer, and digital literacy development. Furthermore, the research confirmed that comparative terminological studies contribute significantly to terminology studies, translation theory,

applied linguistics, and foreign language education. Understanding the similarities and differences between English and Uzbek IT terminology facilitates the development of consistent terminological standards and improves communication in scientific, educational, and technological contexts. Therefore, further research on emerging digital terminology and its adaptation into Uzbek remains an important area of linguistic investigation.

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