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Methods of Word Formation and Cultural Relevance of Technical Terminology in The Uzbek Language

Abdullayeva Fotima Bakhromovna

Jizzakh state pedagogical university, Senior lecturer of the Department of English language teaching methodology, Uzbekistan

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Abstract: This article explores the development of technical terminology in the Uzbek language, focusing on the various methods of word formation. It examines semantic, morphological, and syntactic methods in detail, highlighting how each contributes to the creation of technical terms. The study emphasizes the importance of utilizing the internal resources of the Uzbek language to form terminology that is both linguistically rich and culturally relevant. By analyzing different suffixes and their use in technical contexts, the article shows the adaptability and evolution of the Uzbek language, ensuring effective communication in modern technological fields while maintaining its linguistic identity.

Keywords: Uzbek language, technical terminology, word formation, semantic method, morphological method, syntactic method, affixes, suffixes, internal resources, linguistic identity, technical terms, Fergana dialects, terminology system, language development, cultural relevance.

Introduction: The Uzbek language, which has developed based on the traditions of the classical literary language, possesses broad capabilities for expressing events, phenomena, and concepts of objective reality. As we know, the internal resources of the language have played an important role in establishing the terminology of sciences and fields considered classical. This is because, "...the first and most important source of a literary language's vocabulary is its internal resources." [4, 131]

METHODS

As in every language, several methods are used in the Uzbek language to express (name) various concepts and phenomena. According to A.G‘. G‘ulomov, there are five main methods of word formation in Uzbek. [5, 39] These are the following:

1. Word formation through morphological means (affixation).
2. Word formation through syntactic means (reduplication, composition, abbreviation).
3. Word formation through lexical means (transferring a word from one part of speech to another).
4. Word formation through semantic means.
5. Word formation through phonetic means (internal changes and accentuation).

Based on the research of terminologist scholars, it is known that not all methods of word formation are applied equally across different terminological systems. For example, in the ornithological terminology of the Uzbek language, the semantic and phonetic methods of term formation are relatively active, whereas in other terminological systems—particularly in technical terminology—the semantic, morphological, and syntactic methods of term formation are considered highly productive. Accordingly, it becomes necessary to determine the extent to which each method and approach is applied within the technical terminological system of the Uzbek language.

That is why we found it necessary to study these methods and approaches separately.

Regarding the enrichment of technical terms through the semantic method, the terminologist scholar L.I. Borisova writes the following:

“Merely increasing the quantity of a language leads to a decline in its quality and a weakening of its structure. This, in turn, encourages the growth of the language’s vocabulary not only in terms of quantity but also in terms of quality. For instance, new meanings emerge in old words, and the relationships between their old and new meanings are reinterpreted. Increasing the vocabulary quantitatively is important in itself, but if this process is not supported by qualitative transformation, it could lead to the loss of the language’s semantic continuity.” [3]

For these reasons, the semantic method of term formation has been and continues to be effectively used in various terminological systems. This is because semantic word formation is a consistent and traditional method applied in terminology.

As Professor S.I. Ibrohimov writes:

"An analysis of the lexical-semantic structure of production terms (i.e., technical terms) shows that these terms are formed by the creators based on a correct understanding of the characteristics of objects and phenomena, as well as by comparing and likening them to the features of other objects and phenomena, using figurative perception." [7, 154]

According to S.I. Ibrohimov, technical terms are created based on the following criteria:

1. Analogy criterion (resemblance to humans and their body parts, resemblance to insects and small creatures, resemblance to celestial bodies);
2. Specification criterion;
3. Attribution criterion (attribution to a tribe or nation, attribution to a person’s name);
4. Naming based on material;
5. Naming based on function;
6. Naming based on location;
7. Naming based on external form and condition;
8. Naming based on sound, and so on.

When reviewing the collected materials, it becomes evident that many of the terms studied by S.I. Ibrohimov and formed through the semantic method are currently used to express various concepts related to modern machinery and technology.

One of the oldest traditional headgear items among Turkic peoples, the qalpoq (cap), has undergone semantic transformation in this very way and is now one of the terms used in technical contexts. As noted by S.I. Ibrohimov, a technical term was formed on the basis of the word qalpoq through semantic methods, originally meaning “the thick, round part at the top of a nail — the head.” Today, however, its meaning has expanded further and is used to refer to “a cover or lid that closes the opening of various objects.”

If we were to represent the conclusions drawn from these examples in a diagram, the following picture would emerge:

NO – PTT – MTT / Here:

NO = Name of the object (qalpoq – “headgear”)

PTT = Pre-mechanical technical term (qalpoq – “head of a nail”)

MTT = Mechanical technical term (qalpoq – “lid or cap that covers an opening”) [5].

The presented evidence fully supports the idea that there is "semantic inheritance" in the words mentioned above. Indeed, it is precisely due to semantic development that significant changes have occurred in

the meanings of the word qalpoq.

In current terminology, there is a process of expressing foreign technical terms with alternative equivalent words. In other words, by semantically developing the foreign language itself and introducing it into the scope of technical terminology, the resulting term can become equivalent to the original word's meaning with a different term. As a result, such a word takes on a new, technical meaning.

From the above, we can draw the conclusion that a foreign technical term, through semantic development, acquires a new meaning. These terms are then expressed with Uzbek lexical units that can serve as their equivalents. When we look at the richness of Uzbek technical terminology, we can be sure that many Uzbek words have begun their "second life" in this way, meaning they are now being used to express technical meanings. [2]

The linguist T.A. Degtereva writes in one of her articles:

"…the ability of a word to have multiple meanings is an inherent feature of language and is considered a fundamental semiological principle in language development. This distinctive feature of a word makes it possible to economize language resources, thereby facilitating the effective functioning of language. If every concept arising in human thought required a separate sound complex for expression, the vocabulary of the language would consist of such an overwhelming number of words that, as a result, it would become extremely difficult for speakers to master the language, and the language would grow so rapidly that it would create insurmountable challenges in societal life." [3; 3, 4]

For these reasons, technical terms formed through the semantic method are particularly common in technical terminological systems.

During the study of technical terms, it has been determined that several lexical layers can find their place in this terminological system due to semantic changes.

These include:

1. Names of human or animal body parts.
2. Names of household items.
3. Names of everyday objects.
4. Terms related to pre-mechanical technology.

Before discussing the formation of technical terms through the morphological method, it is important to first address what a morphological word is. In morphological word (or term) formation, affixes are added to the root of a word. In the current Uzbek literary language, there are approximately 300 word-forming suffixes and prefixes.

From our analysis, it is clear that not all of these affixes are used to form technical terms. The reason for this is the specific characteristics of the terminology in each particular field.

Naturally, the question arises as to which suffixes (affixes) are involved in the current Uzbek technical terminological system. It is known that every terminological system, in turn, is divided into sub-systems. It is in this context that the degree of activity of a particular suffix in a given field becomes apparent. For example, the suffixes -chi and -soz are actively used to express the names of people related to technical activities, whereas these suffixes are rarely used when naming machines, weapons, and their parts.

Now, it seems appropriate to examine each of the suffixes used to form technical terms.

1. Formation of technical terms with the suffixes -gich (-g'ich, -kich, -qich).

The primary function of the suffix -gich (and its variants) is to form names of objects and tools. Historically, this suffix was somewhat inactive, but it has become extremely active, especially in the technical terminology system.

It should be noted that the Uzbek technical terminology system offers real potential for the use of the -gich suffix.

According to the history of terminology and the confirmation of gathered factual material, at one time, the idea that all Russian words (terms) should be directly borrowed was dominant. As a result, a certain reluctance to consider the internal resources of the Uzbek language emerged. This situation can also be observed in the Uzbek technical terminology system. For instance, in some translations and dictionaries, there are technical terms that could easily be expressed using the internal resources of the Uzbek language.

In all works dedicated to terminology issues, the idea that the internal word-forming resources of the native language should be effectively used in term formation is emphasized. This is because a term, which is supposed to serve the people and facilitate their information exchange, must primarily be understandable to that very people. Therefore, we believe that, where possible, the internal resources of the native language should always be utilized.

2. Formation of technical terms with the suffix -soz.

The suffix -soz, which originates from Persian-Tajik, forms the name of a person who is involved in making or constructing a particular object or thing.

3. Formation of technical terms with the suffix -ma.

The -ma suffix, which began to be actively used after the 14th-16th centuries, is one of the productive suffixes in Turkic languages, including modern Uzbek. [12, 139]

It is known that, like in other Turkic languages, the -ma suffix in Uzbek primarily forms nouns and adjectives. In the technical terminology system of Uzbek, there are terms formed with this suffix related to both categories. Therefore, we will consider them separately.

4. Formation of technical terms with the suffix -lik.

In the technical terminology system, the suffix -lik expresses the following meanings:

1. It forms names for people with specific occupations, ranks, or positions. It should be noted that, in the field of technology, the -lik suffix is frequently added to all kinds of professions and positions, thus forming terms.

2. It forms the names of sectors and branches of technology, as well as enterprises and institutions related to technical activities.

3. It forms terms that express the state or property of technical objects.

5. Formation of technical terms with the suffixes -sh (-ish) and -lash (-lashtirish).

RESULTS AND DISCUSSIONS

The -sh (-ish) suffix, one of the most active word-forming elements in Uzbek, is used in technical terminology, just as in the general language, to form names of actions and processes. The -sh (-ish) suffix is added to verbal stems to form terms related to technical processes. However, when the name of a technical process is derived from a noun, adjective, or adverb, the suffix -lash (-lashtirish) is added instead of -sh (-ish).

According to Prof. F. Abdullaev, the suffix -lash (-lashtirish) became much more active after establishing strong connections with the Russian language. The activation of this suffix increased significantly in relation to the naming of process terms formed with the Russian international suffixes -i(ie), -atsi(ya), and -k(a) in Uzbek. Among these process terms formed with Russian international suffixes, there are many technical terms, which has greatly increased the number of terms formed with the -lash (-lashtirish) suffix in the Uzbek technical terminology system. This suffix is used to form technical terms by adding it to both native Uzbek and Russian international roots. For example: a) cho‘kichlash (to shrink), kavsharlash (to become rough), zichlash (to compact); b) shtamplash (to stamp), sementlash (to cement), xromlash (to chrome), mexanikalashtirish (mechanization).

6. Formation of technical terms with the suffix -cha.

In Uzbek grammar, the suffix -cha is traditionally used to form nouns indicating diminutiveness or affection. Prof. A. G‘ulomov, discussing the -cha suffix, believes that there is a tendency for it to form new words. Linguist Z. Ma’rufov also proves with numerous examples that the -cha suffix has lost its diminutive meaning and is now used to create new words. Therefore, the -cha suffix should take its proper place in the word-forming section of Uzbek grammar. The -cha suffix is used to form either the name of a technical tool or a part of that tool.

Formation of technical terms with the suffix -chi.

As is well known, the suffix -chi, which is very active in the Uzbek language, primarily forms personal nouns related to various categories. In the technical terminology system, it is also used to form many personal nouns that refer to individuals working in a particular field of technology or managing machines, mechanisms, and other tools. Another feature of the -chi suffix is that it can also serve as an equivalent to a number of Russian-international word-forming suffixes [10].

In the Uzbek language, the use of the suffix -chi to form object names is rarely observed. Since this suffix, in addition to personal names, can also form names of some birds and animals, it is possible for it to also form the names of certain technical objects.

There are technical terms in which both prefixes and suffixes are involved in their formation. This method is particularly active in the thematic group of technical terminology known as "terms denoting properties." In other thematic groups, however, technical terms are rarely formed using this method (and it can be said that they are not created at all).

In the technical terminology of the Uzbek language, terms formed by the syntactic method hold a much more significant place compared to single-word terms. The reason for this is that, like in all languages, syntactic method terms in Uzbek are considered important nominative sources. "In these terms, the characteristic of the thing they represent is directly expressed. They help in overcoming the 'linguistic barrier' in the process of moving from ignorance to knowledge and in consolidating social and practical information."

The construction (structural-morphological) material of technical compound terms, meaning the words that make up these terms, can vary in several ways. For

example:

1. Both components are part of the lexical units of the technical terminology system. For example: gaykali kronshteyn, mexanik qurol, temirchining qo‘rasi, vaakum magistrali.

2. The defining part of the compound term consists of a general-use word, while the defined part is a technical term. For example: quruq bug‘, yassi ombir, asosiy uzatma.

3. The defining part of the compound term can be of a technical terminological nature, while the defined part may be a general-use word or a term that is homonymous with this word. For example: spiral pichoq, reaktiv pog‘ona, tarelka faskasi, porshen yubkasi.

4. Both components of the compound term can consist of general-use words or terms that are homonymous with these words, meaning both components are made up of words that are not technical terms. For example: tish cho‘qqisi, po‘lat yamoq, farang quloq, orqa ko‘prik.

It is known that when a certain concept is expressed through the syntactic method, compound words, word combinations, and abbreviated words arise.

It is worth noting that in the technical terminology system of the Uzbek language, compound terms are rarely found (those that exist are considered compound by some scholars, while others classify them as combinations). However, since technical compound terms are so numerous and diverse, it is necessary to provide a more detailed discussion of terms in this work.

Technical compound terms in the Uzbek language are grammatically diverse. Most often, they are simple combinations consisting of two independent words. At the same time, compound terms consisting of three or more elements also frequently appear.

CONCLUSION

In conclusion, the development and evolution of technical terminology in the Uzbek language is a complex and dynamic process influenced by various methods of word formation. These methods—semantic, morphological, and syntactic—play a critical role in enriching the technical lexicon, ensuring that it remains both linguistically rich and functionally efficient for expressing modern concepts in machinery, technology, and other specialized fields.

The semantic method, for instance, demonstrates the adaptability of words from their traditional meanings to technical contexts, offering a robust means of expressing new technological concepts. Morphological affixes, particularly those such as -gich, -soz, and -ma, contribute to the formation of terms that are closely aligned with the internal word-forming resources of the Uzbek language, offering a distinct alternative to foreign borrowings. Meanwhile, the syntactic method of creating compound terms provides flexibility and precision, allowing for the combination of both technical and general-use words to form clear and effective terminology.

The internal resources of the Uzbek language, as demonstrated throughout the article, are vital for fostering a sense of continuity and cultural relevance in the technical language. While borrowing from foreign languages, especially Russian, has historically been a significant factor in the development of Uzbek technical terminology, there is now a growing emphasis on utilizing the language's own morphological and syntactic structures. This not only ensures the intelligibility of terms for native speakers but also promotes linguistic independence.

Thus, the study of technical terminology in the Uzbek language reveals the richness and adaptability of the language, showing how it evolves to meet the demands of modern science and technology while retaining its cultural identity. Continued research in this area will further refine and expand the vocabulary, ensuring that the Uzbek language can continue to effectively communicate complex technical concepts in diverse fields.

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