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DERIVATIONAL FEATURES OF TERMS CONCERNING MATHEMATICS

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Аннотация: Мақолада инглиз тилидаги математик терминларининг аффиксация усулида яъни суффикслар ва префикслар ёрдамида ясалиши, деривацияси муҳокама қилинади. Шунингдек математика ва тилшуносликнинг ўзаро алоқаси ҳақида сўз юритилади.

Калит сўзлар: деривация, термин, терминология, математик термин, сўз ясалиши, аффикс.

Аннотация: В статье рассматривается возникновение математических терминов в английском языке с путём аффиксации, то есть с использованием суффиксов и префиксов. Также обсуждается взаимосвязь между математикой и лингвистикой.

Ключевые слова: деривация, термин, терминология, математический термин, словообразование, аффикс.

Abstract: The article discusses the derivation of mathematical terms in English by affixation, that is using suffixes and prefixes. It is also pointed out to the relationship between mathematics and linguistics.

Key words: derivation, term, terminology, mathematical term, word formation, affix.

Introduction. Various disciplines are contributing their research to the study, research, and development of mathematics. This means that the field of mathematics has become the object of research in a number of other fields as well. Any science can achieve its goals only when it is closely connected with mathematics. Linguistics is no exception[1]. Linguistics is also of particular importance in the development of the field of mathematics by its linguistic study.

Each field of science has its own terminology, including mathematics. A term (derived from Latin word “terminus” = limit) is a word or phrase that expresses a concept related to a specific area of knowledge or activity. Terminology is the study of terms in linguistics [2]. The development and enrichment of terminology varies.

Literature review. Terminology issues were also studied in the works of Polivanov E.D [3], Gorelov V.I., Dragunov A.A. [4] in which there were revealed the features of scientific and technical terminology.

A systematic approach to the study of theoretical problems of terminological derivation in modern linguistics allows to distinguish the priorities of term formation: derivational, lexical, semantic aspects, to show their integrity and complementarity [5].

Derivation is one of the most evolving directions of modern linguistics, it is the process of continuous development of language. Derivation has been the scientific and practical object of much research in the field of linguistics.

The word “derivation” is derived from the Latin word "derivetio", which means, "the formation of a new word using affixes" [6]. It is a process of formation and development of language units on the basis of another language base.

In the theory of Linguistics, language study one of the first research and terminological complex analysis based on Russian biological materials was performed by prof. L. Yu Buyanova.

As O.P. Frolova points out, the word-formation system is the basis for the creation of terms on its own [7].

S.R. Shukurova's scientific work "Структурно семантический анализ математических терминов русского и таджикского языка" provides a detailed analysis, similarities and differences of mathematical terms in these two languages [8].

R.F Garifullina, in her dissertation, covered the lexical-semantic and word-formation aspects of mathematical terms in Russian [9].

M.I Abramovich's dissertation on " Математика тарихи" describes in detail the development of mathematics in Central Asia and the introduction of the first terms in the field of mathematics in mathematical terminology [10].

In Uzbekistan a number of research works have also been carried out in this direction that is the formation of terms in various fields, the analysis of derivation. The field of ecology, the field of international relations, the field of medicine, the field of automobiles and highways, etc. Examples of these researches are the following works: X.D. Paluanova " Derivative properties of ecological terms "; Master's dissertation by D.Sh. Boltaeva " Linguocultural features of terms denoting international relations "; A. Kasimov's " An explanatory dictionary of medical terms "; J.I Ermetova; O Xojaev “Uzbek-English, English-Uzbek explanatory dictionary of automotive terms”; X.A Sarimsokov “Comparative study of sports terms in English and Uzbek languages” and others.

Research methodology. The work is based on general linguistic method of component analysis. In the study of word meaning through the method of component analysis, the word is logically and necessarily divided into specific parts, components. In fact, the process of dividing a word into its semantic parts, the study of each of the separated parts, their "power" in the meaning of the word, what function it performs in speech, etc., all these are based on the method of component analysis.

The key techniques that are used the followings: techniques of collection, observation, processing and interpretation investigated material.

The lexicographic method as other methods of research is a certain approach to the phenomenon under study. In order to analyze the words we used several dictionaries of mathematics terms. It contributes to the purposeful study of the object from a certain point of view. Consequently, the lexicographic method appears as a way to study language units from the point of view of the science of lexicography. It includes techniques and procedures, aimed at the study of units of language by lexicography.

In modern science, the lexicographic method is actively developing, which indicates the relevance of such works, since they synthesize the theoretical and applied principles in the study of a language, allow vividly present the specifics of the subject of lexicography. The lexicographic direction is one of the leading and productive areas in learning terms.

Analysis and results. The phenomenon of derivation, which has been discussed so far, is classified in morphology as follows: derivation can be with affixation and non-affixation. And in its terms affixation has its three forms: suffixes, prefixes and infixes [11].

The study of terminological derivation processes shows that the terms are mainly formed by the affixation method.

Affixes are divided into prefixes and suffixes. They are used to make new words and they serve to create new lexical units derived from their name.

The affixation method is widely used in the construction of mathematical terms. This process is accomplished by adding word-forming affixes to existing lexemes in the language.

Below we see examples of formation of mathematical terms with suffixes:

Using the suffix -ion, verbs are used to form noun terms:

VERB + ion = NOUN

For example, accelerate + ion = acceleration;

distribute + ion = distribution

Suffix –ing is used to form terms from a noun phrase or sometimes from a verb phrase that belong to a new noun phrase:

NOUN + ing = NOUN or VERB + ing = NOUN

For example, round + ing = rounding;

count + ing = counting

Using the suffixes -or, -er, a term specific to the noun phrase is formed from the verb phrase:

VERB + or = NOUN

For example, estimate + or = estimator;

remind + er = reminder

In English, the formation of mathematical terms using prefixes is also observed. By adding the prefixes anti-, inter-, co- to the words in the noun phrase, the terms specific to the new noun phrase were created:

anti + NOUN = NOUN

inter + NOUN = NOUN

co + NOUN = NOUN

For example, anti + derivative = antiderivative

inter + section = intersection

co + variant = covariant

In English, there are mathematical terms that have two affixes, both prefixes and suffixes:

de + VERB + or = NOUN

For example, de + nominate + or = denominator

With the help of suffixes, it is formed not only nouns but also adjectives:

VERB + ive = ADJECTIVE

For example, add + ive = additive

The other adjective forming suffix is –al:

NOUN + al = ADJECTIVE

For example, condition + al = conditional

There are a number of adjective terms which formed both prefixes and suffixes:

bi + NOUN + al = ADJECTIVE

For example, bi+ condition + al = bi-conditional

Some adjective terms are formed with two suffixes:

VERB + ion + al = ADJECTIVE

For example, distribute + ion + al = distributional

Mathematical terms in languages belonging to different systems are mainly formed by the affixation method. So affixation is one of the main forms of mathematics term formation. –tion, -or, -er, -ing these suffixes and anti-, inter-, co- these prefixes are widely used in term formation.

Conclusion. In short, in the system of terms, the formation of terms by the morphological method is quite active, because in this process a variety of affixes are widely used. This means that today the introduction of new terms in study of mathematics leads to the enrichment of terms in the field of mathematics.

The examples given are both similar and different in terms of the construction of language terms in different systems. But in all languages terms are more productive in the means of suffixes.

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