METHODOLOGICAL ASPECT OF TEACHING THE PROBLEM OF ENGLISH-SPEAKING PROFESSIONALLY ORIENTED SPEECH IN THE FIELD OF INFORMATION TECHNOLOGIES STUDENTS OF THE TECHNICAL UNIVERSITY

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Permanent progressive change in the field of computer engineering attracts the attention of many scientists to the problem of studying, clarifying, deepening of existing scientific concepts and terms of the computer speech, which from the beginning is in English. Regarding our research, the characteristics of the English computer speech is extremely important for the selection of a professionally directed educational material.

The purpose of our study is to analyze the main characteristics of texts in the field of computer engineering and English speaking.

To achieve this aim, our research was conducted through the characteristics of English texts used in computer engineering. The main directions of this field are considered. The linguistic features of the scientific texts in the field of computer engineering and English speaking are provided.

Computer terminology is the most dynamic of terminological systems, and it will hardly be sometime possible to put the end to it and to consider investigated as innovations in the computer engineering develop rather promptly.

For correct comprehension and translation of computer terms, it is necessary to understand the morphological structure of the term, semantic features distinguishing it from commonly used words, the peculiarities of the contextual functioning of these units.

Analyzing the field of new technologies, we can see that the last decade is characterized by the appearance of significant numbers of new lexical, semantic and idioms in the English language in connection with new trends and directions of scientific and technological development. Such a designation is made by the replenishment of the vocabulary of idioms and lexical innovation, rethinking existing language material.

Having studied the texts of computer engineering, we came to the conclusion that there are such features of the scientific style as: the presence of special vocabulary, terms; the use of words only in direct or terminological terms; predomination of complex sentences in the syntactic structure; the division into paragraphs plays an important role in the disclosure of the logical structure, a special character expressing expressiveness; absence or lack of emotionality.

Key words: engineering, professional speech, scientific style, term.

Добровольська Н.Л. Методичний аспект проблеми навчання англомовного професійно спрямованого мовлення у галузі інформаційних технологій студентів технічного ВНЗ. Стаття присвячена основним аспектам навчання англомовного професійно спрямованого мовлення у галузі інформаційних технологій студентів технічного ВНЗ. Надано лінгвістичні характеристики наукового тексту у галузі комп'ютерної інженерії та англомовного говоріння. Задля вірного розуміння та правильного перекладу комп'ютерних термінів необхідно розуміти морфологічну будову терміна, семантичні особливості, що відрізняють його від загальновживаних слів, особливості контекстуального функціонування цих одиниць.

Ключові слова: інженерія, науковий стиль, термін, фахова мова.

Добровольская Н.Л. Методический аспект проблемы обучения англоязычной профессионально направленной речи в области информационных технологий студентов технического вуза. Статья посвящена основным аспектам обучения англоязычной профессионально направленной речи в области информационных технологий студентов технического вуза. Даны лингвистические характеристики научного текста в области компьютерной инженерии и англоязычного говорения. Для верного понимания и правильного перевода компьютерных терминов необходимо понимать морфологическое строение термина, семантические особенности, отличающие его от общеупотребительных слов, особенности контекстуального функционирования этих единиц.

Ключевые слова: инженерия, научный стиль, профессиональная речь, термин.

Introduction. It is well known that with the advent of information technologies in the late twentieth and in the early twenty-first centuries, a new informational, computerized society, which scientists describe as a «system of people, processes, values and relevant technologies» (Nardi, O`Day), is being formed [14]. Permanent progressive change in this area attract the attention of many scientists to the problem of studying, clarifying,

deepening of existing scientific concepts and terms of the computer speech, which from the beginning is in English. Regarding our study, the characteristics of the English computer speech is extremely important for the selection of a professionally directed educational material.

Analyzing the latest researches and publications of the problem field of scientific and linguistic searches in the modern educational space, it is appropriate to recall the works of V. Koptilov, V. Karaban, and others [7; 5]. Our study is also based on works devoted to the study of terms in the field of information technology, which address the issues of their translation.

The purpose of the study is to analyze the main characteristics of texts in the field of computer engineering and English speaking.

Discussion. Modern engineering activity is the most mature form of work activity, directly aimed at solving technical problems and creating the technique. It is the only thing that unites all engineers, regardless of which sphere of public life their work is used. One of the successful breakthroughs of the modern industry is the emergencyy of computer technology. With the advent of personal computers, data exchange issues have become global. Thanks to special software and hardware it became possible to organize interaction between people separated from each other by a distance of tens of thousands of kilometers. But in order that everything can function in the form in which we have got used to work with the personal computer, it is necessary to study bases of work and creation of software. This is what computer engineering does.

The branch of computer engineering has a lot of narrow directions, which in detail study a certain area of programming and development of computer technologies. Let us consider them in detail. Electronics is the direction in this branch which studies the fundamentals of electronics (diodes, transistors, power sources) and applications of analog and digital circuits.

The study of integrated circuits is also one of the directions that aims to study electronic circuits based on semiconductors with different integration technologies and procedures. It considers in detail their functioning, characteristics, behavior and applications.

The study of the partition data structure allows to acquire information regarding formal logic, algorithms, data structures by presenting the relevant languages and programs, conditions and restrictions, explains reprogramming data to solve problems with computer and electronic devices.

Telecommunication systems – a direction that focuses on the analysis and verification of telecommunications systems and protocols, and which is aimed at studying analogue communication channels, such as AM and FM, as well as digital types of communication. In addition, it examines the impact of various telecommunications technologies.

The direction of studying the properties of stuffs considers the physical and electronic properties of various stuffs, studies the fundamentals of the electronic theory of conductivity, the electronic properties of metals, semiconductors, pipes and valence zone, superconductivity, as well as electrical, thermal, optical and magnetic properties of materials and their technological applications.

Signal processing. This direction of computer engineering explains the methods, physical principles and algorithms of signal processing for data transmission. It studies the nature of signals, classifications, manipulations, the properties of systems, as well as the means by which signals can be transmitted.

The direction *«Antennas and wireless systems»* explores the theoretical basis and tools for analyzing antennas, wireless systems and radio channels. This direction represents the content and design of various communication systems for mobile and portable devices, shows the latest technological trends in the application of the satellite and alternative radiant structures.

Fiber-optic communication represents components and systems development for fiber-optic communication. It includes various types of optical fibers, transmitting and receiving devices, analog and digital methods of transmission, fiber-optic network architectures, problems, costs and technologies associated with various communication systems.

The design of analog circuits is a direction that explores the process of creating analog circuits, from planning, analysis and control to final design and production.

The design of digital circuits is a direction that explores the process of designing digital circuits. It shows different models of circuits, implementation technologies, mechanisms for monitoring, fault detection and fault tolerance, simplification of logic circuits and other methods for achieving a system of maximum performance.

The direction microprocessor design represents the design and programming of specialized or embedded systems based on

microprocessors and controllers. It helps to identify these systems, to interpret their schemes and to apply them in production.

Computer engineering shows analysis, diagnosis, planning of electronic devices, evolution, component reliability, design, improvement, maintenance, life and quality control. It also studies the production of electronic circuits and devices from the cleaning phase to the inspection and their operation.

Microprocessors and microelectronic engineering are distinguished separately.

The first direction is studying the connections and functioning of the components of microprocessors and interfaces. The second direction shows various technologies for designing and manufacturing circuits – analog, digital, integrated and abstract, and also studies microelectronics, including all the processes of its production, design, modeling and quality control.

In linguistic literature the ratio of special and common lexicon is interpreted in different ways. Between the words of common vocabulary and terms it is impossible to carry out a clear boundary, practically any independent word can enter the category of special vocabulary as a result of its terminologization. Thus, the system of terms is associated with a system of commonly used vocabulary, but it does not completely coincide with it, because terms are formed not only as a result of providing a word of the common language with a special meaning, but also by borrowing and artificial creation of new words.

The word is characterized by the unity of sound, content and the called thing; the content, the connection with the concept is the main thing for the term. However, for lexical and syntactic connections, the term is perceived as a word. In the process of terminology of general vocabulary, a change or restriction of the denotation occurs. The term is characterized by abstraction, independent functioning within the terminological field, meaningfulness of the internal form, limited number. The term represents species relations and needs a definition.

However, it should be noted that the professional popular speech is widespread in the sphere of the special speech. Common features for vocabulary and professional vocabulary are the specialization of the meaning and the creation on this basis of specific lexical and semantic systems, limiting the number of users of this vocabulary and spheres of use.

Professionalisms are informal, but generally accepted by spoken terms among specialists. However, researchers separate professionalisms from terms. Bordering with each other, terms have a more orderly and normalized character, while professionalisms are semi-official lexical units that are used by a narrow circle of specialists, mostly in the speaking. Despite these significant differences between these two areas of vocabulary, there is continuous interchange, and professionalism can also exist as a synonym for the term [5].

The style of modern English scientific and technical literature is based on the norms of English writing with certain specific characteristics, namely:

1) Vocabulary. A large number of special terms and words are not of Anglo-Saxon origin. Words are selected with great care for the most accurate transmission of thoughts [15]. A large proportion is used for official (functional) words (prepositions and conjunctions) and words that provide logical links between individual elements of utterances (adverbs).

2) Grammar. Only those words are used that are firmly established in the writing of the grammatical norm. Passive, impersonal and indefinite personal constructions are widespread. Basically, compound and complex sentences are used, in which nouns, adjectives and non-finite forms of the verb predominate. Logical allocation is often achieved by deviating from the firm word order (inversion).

3) The method of presentation. The main task of scientific and technical literature is to bring certain information to readers in clear and accurate ways. This is achieved by logically substantiated presentation of factual material, without the use of emotionally colored words, expressions and grammatical constructions. This way of exposition can be called formally logical [9].

The basic language means: abstract vocabulary, a large number of terms, schemes, tables, graphs, often foreign words, scientific phraseology (stable terminological connections), citations, references, unambiguous vocabulary, lack of subjectivity, impersonality of syntax, the absence of all that indicated the author's personality, his preferences (emotional-expressive synonyms, suffixes, art trails, etc.).

Considering the lexical features of the texts of computer engineering, we distinguish several features. For example, use of acronyms. Acronyms are abbreviations which, unlike abbreviations (read, pronounced and perceived by the names of letters), are read and perceived as ordinary

lexical units. These words are formed from different combinations of letters (from the first letters, from the first few to the last, and others).

Let us consider some examples of abbreviations:

ADSL – Assymetrical Digital Subscriber Line, Asymmetrical DSL – asymmetric digital subscriber line, asymmetric DSL. The technology of high-speed data transmission over ordinary telephone lines to the user. Data transmission and telephone connection are possible at the same time.

ANSI character set – ANSI character set – developed by ANSI (American National Standard Institute) 8-bit code table, which is used in Windows to provide 256 control and digital alphanumeric characters. The first half of this set is the same as ASCII.

AOL – America OnLine. National Internet provider, the most popular and the largest commercial online service in the United States. It provides e-mail services and basic Internet services. An internet pager of the same name (a program for communication) of this company is often meant by AOL.

E-mail – Electronic mail – e-mail, a system for transferring messages between computers using networks (Internet). E-mails can be compared to the usual ones when you write a letter and send it to a specific recipient address.

HTML – Hypermarket MarkUp Language – the language of a hypertext markup. HTML is responsible for what you see in a certain sequence on the web page of the text and pictures [16].

The general characteristic of the lexical composition of the scientific text of the engineering field includes the following features: words are used either in the main direct or in terminological terms, but not in expressive-figurative.

In specialized texts, there is often an element of novelty that makes the text interesting for the reader. However, it is often saturated with new terms that have not yet been fixed in specialized sources. Despite this, the translation of such terms should be descriptive, with a detailed explanation of this or that phenomenon and with the use of already established terms in science. Any scientific text tends to repeat terms [13]. That is why it is necessary to transmit an unfamiliar concept to compare all cases of its use in this text and only then determine its meaning and scope, using reference literature.

In the scientific and technical texts of this field, there is a wide application of such verbs-operators as effect, assure, perform, obtain, provide, give, involve, entail, imply, result in, lead to, to be attributed to, etc., the meaning and translation of which depends entirely on the nouns that carry the main semantic load in the sentence.

The desire for the nominative also leads to the replacement of adverbs with prepositional-nominal combinations. So, accurately becomes with accuracy, very easily – with the greatest ease or the easy way (CP.: to do something the hard way), etc. Only amplifying adverbs have resistance to this trend, which appear in scientific and technical texts as the main modal-expressive means, which does not look like an unfamiliar element in a serious presentation. Such adverbs: *completely, considerably – substantially, essentially – fairly, fairly, greatly – significantly* [8: 33].

For example:

The amount of energy that has to be dissipated is *clearly* enormous. – Кількість енергії, яка повинна бути розсіяною, явно перебільшена (переклад наш – Н.Д.) [8: 25].

The energy loss is *markedly* reduced. – Втрати енергії помітно знижується (переклад наш – Н.Д.) [8: 7].

Evidence of the same anty-verbal tendency in the texts of computer engineering is the widespread use of verbal adjectives with prepositions instead of verbs:

to be attendant on – слугувати,
to be conducive to – бути пристосованим,
to be destructive of – бути зруйнованим,
to be incidental to – бути випадковим,
to be responsive to – реагувати на щось,
to be tolerant of – терпіти [5: 89].

For example:

This system is conducive to high volumetric efficiency. This type of mixing is often incidental to other stages of the industrial process, e.g. size reduction. – Ця система сприяє високому об'єму ефективності. Цей тип змішування часто є випадковим на інших етапах виробничого процесу, наприклад, зменшення розміру [8 : 59].

In linguistic papers that study the specifics of the scientific and technical style of this branch of texts in modern English, a number of more particular grammatical features are indicated, namely: the widespread use of the

plural of material nouns (fats, oils, greases, steels, rare earths, sands, wools, gasolines, etc.), plural of the names of tools (clippers, jointers, shears, dividers, compasses, trammels, etc.), the use of a preposition *of* for the transmission of species-generic relations (the oxidizer of liquid oxygen, the fuel of kerosene), the prevalence of attributive combinations with the words *type, design, pattern, grade.*

In connection with the above-mentioned sequence and the proof of scientific exposition, there is also an increased use of cause-and-effect unions and logical connections of the type since*, therefore, it follows, so, so, thus, implies, involves, leads to, results in,* etc.

Near the first person of the plural, impersonal forms and constructions with one are widely used.

The frequency distribution of parts of speech in scientific text differs from that which is observed in a neutral or conversational style: the percentage of names increases, the content of verbs in personal form decreases, there are no exclamations.

It is necessary to mention a special form of substitution of constructions that is characteristic for a scientific form:
– That of;
– Those of;
– That + Part.

Conclusions. Thus, the intensive development of science and technology, together with the processes of globalization in modern society, lead to the continuous enrichment of the terminological system of the Ukrainian language with words and phrases related to the field of information technology.

Computer terminology is, perhaps, the most dynamic of terminological systems, and it will hardly be sometime possible to put the end to it and to consider it investigated as innovations in the computer engineering develop rather promptly.

Having studied the texts of computer engineering, we came to the conclusion that there are such features of the scientific style as: the presence of special vocabulary, terms; the use of words only in direct or terminological terms; predomination of complex sentences in the syntactic structure; the division into paragraphs plays an important role in the disclosure of the logical structure, the special nature of expressiveness; absence or lack of emotionality.

Further research is planned to be done in the field of the content of teaching future specialists of computer engineering reading and speaking.

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ОСОБЛИВОСТІ МЕТОДИКИ НАВЧАННЯ РОСІЙСЬКОЇ МОВИ ТУРКМЕНСЬКИХ СТУДЕНТІВ З УРАХУВАННЯМ ТИПОВИХ ЛЕКСИЧНИХ ПОМИЛОК

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У статті розглядаються варіанти сполучуваності паронімів і деякі помилки туркменських студентів у вживанні паронімів – слів, близьких за звучанням, але не тотожних, а іноді й далеких за значенням. У результаті спостережень за усним і письмовим мовленням студентів-туркменів розкриваються головні причини помилкової взаємозаміни паронімів. У статті наводяться приклади