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**Semantic organization of sentences while teaching to read texts on specialty**

The article describes a method of working with text on specialty at the sentence level. Two ways of the sentence analysis are suggested – «from the form – to the meaning» and «from the meaning – to the form». The first direction is understanding of the sentence meaning through a model. Depending on the communicative task, different meaning-speech situations are created in the scientific text, which are expressed by certain structural and semantic models. The second way – «from meaning» – is identification of the sentence semantic content with the help of question. The author suggests the following method of work: to find subject and predicate in the sentence; to determine what part of speech expresses the predicate; to formulate a grammatical question to the main word of the combination, which is after the predicate; to write the question down; moving in the opposite direction, to fix the predicate in the question; to fix the subject; to write the question completely and give a brief answer to the question, which will be a semantic center of the sentence.

**Key words:** semantic organization of the sentence, structural and semantic model of the sentence, communicative task of the sentence, meaning-speech situation, semantic center of the sentence.

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**Мамандық бойынша мәтінді оқыту барысында мағыналы сөйлем құрастыру**

Мақалада мамандық бойынша сөйлем деңгейіндегі мәтіндермен жұмыс жасау әдісі суреттелген. Сөйлем талдаудың екі жолы ұсынылған – «пішіннен – мағынаға» және «мағынадан – пішінге». Бірінші бағыт – бұл модель арқылы сөйлемнің мағынасын түсіну. Коммуникативтік міндеттерге байланысты ғылыми мәтіндерде нақты құрылымдық-семантикалық моделдері анық байқалатын түрлі мағыналы сөйлеу жағдайлары жасалынады. Екінші бағыт – «мағынадан» – сұрақтың көмегімен сөйлемнің мағыналық мазмұнын анықтау. Автор келесі әдістемені ұсынады: сөйлемнен бастауыш пен баяндауышты табу; баяндауыштың қай сөз табынан болып тұрғанын анықтау; баяндауыштан кейін тұрған сөз тіркесінің грамматикалық жағынан реттеу; сұрақ жазу; қарама-қарсы бағытта жылжи отырып, баяндауышты анықтау; бастауышты анықтау; сұрақты толығымен жазып, оған сөйлемнің мағыналық ортасы болатын қысқаша жауап беру.

**Түйін сөздер:** мағыналы сөйлем құрастыру, сөйлемнің құрылымдық-семантикалық үлгісі, сөйлемнің коммуникативтік мақсаты, мағыналы сөйлеу жағдайы, сөйлемнің мағыналық негізі.

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**Смысловая организация предложения при обучении чтению текста по специальности**

В статье описана методика работы с текстом по специальности на уровне предложения. Предлагается два пути анализа предложения – «от формы – к смыслу» и «от смысла – к форме». Первое направление – это понимание смысла предложения через модель. в зависимости от коммуникативной задачи в научном тексте создаются различные смысло-речевые ситуации, которые выражаются определёнными структурно-семантическими моделями. Второй путь – «от смысла» – выявление смыслового содержания предложения с помощью вопроса. Автор предлагает следующую методику работы: найти в предложении подлежащее и сказуемое; определить, какой частью речи выражено сказуемое; сформулировать грамматический вопрос к опорному слову словосочетания, которое находится после сказуемого; записать вопрос; двигаясь в противоположном направлении, зафиксировать в вопросе сказуемое; зафиксировать подлежащее; записать вопрос полностью и дать краткий ответ на вопрос, который и будет смысловым центром предложения.

**Ключевые слова:** смысловая организация предложения, структурно-семантическая модель предложения, коммуникативная задача предложения, смысло-речевая ситуация, смысловый центр предложения.

**SEMANTIC  
ORGANIZATION OF  
SENTENCES WHILE  
TEACHING TO READ  
TEXTS ON SPECIALTY**

In the methodology of teaching Russian as a second language, recognized basic teaching units are sentence (minimum communicative unit) and text (the highest communicative unit). In teaching practice, as shown by the analysis of programs, textbooks and tutorials, the teaching of language means is conducted at the level of sentence, and kinds of speech activity, communication are taught on the basis of texts.

Formal organization of the sentence determines its meaning, the type of informative content – its semantic organization within certain limits. [1, 414] Semantic organization of the sentence is hierarchically integrated from the meanings of individual words and the relationships between them. Dominant and peripheral meanings are formed in the sentence. In the methodological aspect, the process of understanding can be represented as a process of identifying logical-semantic relations in the sentence, their hierarchy, determination of the semantic center and communicative task.

The first step in working with the text on the specialty is its interpretation and semantic perception, or understanding. Unfortunately, we cannot see the occurrence of the process: the very process of reading the text as a complex multi-level activity, the product of which is understanding of the text, is not available for direct observation and therefore causes endless disputes and ambiguous interpretations [2, 153]

Working with the specialty text at the sentence level can be carried out in 2 directions – «from the form – to the meaning» and «from the meaning – to the form».

The first direction is understanding of the sentence meaning through its model. The model (Fr. *modele* from Ital. *modello* – example) is a scheme or a sample of a linguistic unit showing the sequential arrangement of its constituent parts, e.g. derivational model, model of the sentence [3, 182]. In Russian sentences (in the two-compound sentences and some one-compound ones), the semantic center is a predicate. The predicate is unchanged in the model. Subject and predicate extenders are replaced by symbols – grammatical questions (the number indicates the number of case). For example, *bacteria and fungi cells have no plastids. WHAT? (Cells of fungi and bacteria) HAVE NO WHAT? (plastids)*. The final model of the sentence is as follows: WHAT (1) HAS NO WHAT (2).

In the sentence model, coordination of the subject and predicate in the number and gender (in the past tense) is as follows: *what (1)* is regarded as a neuter singular noun – *what (1) has what (4), what (1) had what (4); who (1)* is considered as a masculine singular noun – *who (1) subdivides what (4) into what (4), who (1) subdivided what (4) into what (4)*. An exception is the sentence model, in which the subject and predicate are in nominative case of the noun. In this case, the model is as follows: *what (1) is what (1); what (1) – what (1)*. For example: Plastids are organelles specific for plant cells and absent in animal cells.

Depending on the communicative task, different meaning-speech situations are created in scientific text, which are expressed by certain structural and semantic models. For example, if the text considers whole and its parts, its communicative task is to show the structure or composition of the object or phenomenon. In this case, in the text there will be sentences built by the models: *what is a part of what; what is contained in what; what is a constructive part of what; what consists of what; what includes what* and so on. If the text items are distributed by classes, types, categories, the communicative task of the text is the classification of objects with frequency models *what is divided into what; what is divisible by what; who classifies what (on what basis); what is distinguished; who shares what by what*.

This is a very productive way, although having some difficulties in realization. Where we are working at the level of sentence built by the model or typical text, the results can be achieved and are achieved successfully; if we use an authentic text as didactic material, the result is achieved with additional efforts. Some models, «anchored» to a particular «actual meaning» in the mind of the student can express completely different semantic essence in the text. For example, we work on the SDE «definition»: *Zoology is the study of animal organisms*. Students readily assimilate the connection between SDE values and models, can formulate a question, make transformations within the studied models, but in the presentation of sentences «*Zoology is an experimental science*» and «*Zoology examines the animal organisms*» students have difficulties in qualifying these sentences: the first one is built on the model relating to the SDE «definition», but not expressing the meaning, the second one, on the contrary, is a semantic invariant of this, but the model, on which it is built, is not specified among the SDE «definition» models.

For the representation of SDE, structural and semantic model is used, which is conceptualized

due to its abstract nature, i.e. it becomes a part of the individual conceptual system, with great difficulty in a foreign language. Perhaps it depends on many factors, and above all on the starting level of the student's language ability, which includes language competence, strategic competence and psychophysiological mechanisms. The latter ones form individual cognitive style of the learner, which is not to be ignored by any trainer if the goal is to teach. So it makes sense to talk about flexible approaches to training appropriate to different cognitive styles of students.

The second way is identification of the sentence semantic content, i.e. determination of its communicative task using a question, as «communication tasks can be reduced to questions» [4, 154]. The reasoning in this case may be as follows: to find the subject and predicate of the sentence; to determine what part of speech expresses the predicate; to formulate a grammatical question to the main word of the combination, which is after the predicate; to write the question down; moving in the opposite direction, to fix the predicate in the question; to fix the subject; to write the question completely and give a brief answer to the question, which will be a semantic center of the sentence. Therefore, the question determines the semantic center of the sentence. For example: *Living beings have a built-in self-regulation system*.

The subject – *living beings*; predicate – *have*; the predicate is expressed by the personal form of the verb; the main word – *system* – is a noun in the instrumental case, the question is – *what?*

– *What do the living beings have?*

– *A built-in self-regulation system.*

This is the easiest option of formulating the question to the sentence semantic center. In some cases, a refinement of the grammatical question is required. For example: *Pigments are divided into those soluble in water, soluble in alcohol and insoluble in water and alcohol*. In this sentence, the question formulated in a predetermined pattern, will have a conversational tone: *What pigments are divided into?* The semantics of the verb «divide» implies «to allocate parts grouping them according to some criteria». Let's introduce the word «groups» into the question and formulate it in a new version: *What groups the pigments are divided into?*

In the case when the subject and the predicate are expressed by nouns in the nominative case, the question is formulated depending on the type of information contained in the sentence: *What is ...? What is called ...?* In the sentences of general qualifications, a specific concept is defined by a

generic term. For example, *the skin is the body's defense from harmful environmental influences*. *The skin* is a specific concept, and *protecting of the body* is a generic term, since the *organs of the body protection* may be the *liver, bones, eyes, ears*, etc. The questions correlated with this type of information are *What is ...? What is called ...?*

In the sentences of terminological qualification, the subject and the predicate match completely. For example: *explantation is culturing of isolated organs and tissues*. In order to define the explantation, one must fully read the second part of the sentence (predicate with dependent words). To determine this concept, the following wording is not enough: *explantation is cultivation*. The question is *of what?* Or *explantation is culturing of organs and tissues*. Which organs and tissues? Only after reading the full sentence, we can understand the meaning of this biological term – *the cultivation of isolated organs and tissues*. The questions for this type of information are *What is ...? What is called ...?*

If the predicate is at the end, the question is formulated directly to the predicate. For example: *Since the mid 50-ies, the value of ecology and the scope of its applications became much wider*. The predicate is expressed by the phrase *became much wider*. The semantics of the verb *to grow* is associated with the «change of certain parameters in the direction of increasing». Let's consider the meaning of the verbs *to grow* and *to change* as a particular manifestation in relation to the general and formulate a question to this sentence by using the verb *change*: How has the meaning of the environment and the scope of its application changed since the mid 50-ies? – *They began to expand significantly*.

The method of work proposed above is applicable to a simple sentence. At the level of a complex sentence, the setting of communicative task with a question should be based on the definition of logical-semantic relations taking into account the amount of information in the subordinate clause of the complex sentence.

The originality of the CS semantic organization is that it is fundamentally oriented towards the expression of not one proposition, but a complex of propositions meaning the ratio of the situations, while the simple sentence in its elemental form is intended to express one proposition, in other words, the CS is polypropositional and the simple sentence is monopropositional.

For example: *After eliminating all the possible options for the water pollution, scientists have come*

*to the conclusion that the bacteria detected in the water are absolutely unique and not similar to any form of life known and described in the world*. In this complex sentence with attributive relations, the information is specified through a clarifying question formulated to the word located immediately after the predicate: What conclusion have the scientists come to? – *Bacteria detected in the water are absolutely unique and not similar to any form of life known and described in the world*.

In the sentence with attributive relationship: *Scientists have fixed the role of MX2 gene in the inhibition of human immunodeficiency virus that causes acquired immunodeficiency syndrome (AIDS) for the first time* – the formally dependent part refers to the noun «gene» since the gene causes immune deficiency syndrome, but the main part of the sentence indicates that *scientists have fixed the role of MX2 gene*. Therefore, the question is formulated specifying the information not only about the gene, but also about its role: What role of MX2 gene in the inhibition of human immunodeficiency virus the scientists have fixed? – *To cause the acquired immunodeficiency syndrome (AIDS)*.

In the sentences with causal, explanatory, temporal, spatial relations, formulation of the question is usually not difficult. The range of questions is limited: *Why...? For what reason...? What...? When...? Where...?* etc. For example: *The development of drugs that stimulate the body's natural inhibitors is very important because it allows running a natural process and thus eliminates the problem of drug resistance*. – Why is the development of drugs that stimulate the body's natural inhibitors very important? – *It allows running a natural process and thus eliminates the problem of drug resistance*. Or: *Endocrinologists are currently unable to assess the results of stem cells application as clinically proven results of the operations are absent*. – What are the reasons for the endocrinologists to be currently unable to assess the results of stem cells application? – *Clinically proven results of the operations are absent*. Or: *In the description of the experiment it is clearly demonstrated that vascular wall cells give rise to blood cells*. – What is shown in the description of the experiment? – *that vascular wall cells give rise to blood cells*. Or: *The development of a new science (nanotechnology) began after the Americans accidentally discovered the possibility of creating tiny particles composed solely of carbon atoms in a laser discharge*. – When did the development of a new science begin? – *After the Americans accidentally discovered the possibility of creating*

*tiny particles composed solely of carbon atoms in a laser discharge.*

It is much more difficult to identify the communicative task with a question in sentences with concessive relations: *Though using existing drugs people with HIV can extend the life, these agents are toxic to the body, and in the case of long-term use there is a problem of drug resistance.* It is impossible to formulate a question to the semantic center of the sentence following the models of the complex sentence parts and using only the language features that are involved in the construction of the sentence. Formulating a question to the semantic center of the sentence, we have to go beyond the sentence in terms of linguistic resources, while remaining within it semantically. – What are the side effects of the drugs long-term use for people with HIV? – *These agents are toxic to the body, and in the case of long-term use there is a problem of drug resistance.*

With the help of the question, an opposite effect can be achieved – extension of information contained in the semantic category. For example, let us take the category of «meaning». In the conceptual system of any native speaker (who studied the principles of science in the volume of secondary school) there is a stereotypical set of questions corresponding to a certain semantic category. For the given semantic category of «meaning», this set will consist of the following questions: 1. *What is the meaning ...?* 2. *What meaning has the ...?* 3. *What is the meaning of ...?*

This direction of work is related to the categorization of a reality fragment reflected in the meaning of the text. Categorization is division of the outer and inner world of the person according to essential characteristics of his or her functioning

and existence, orderly presentation of various phenomena through their reduction to a smaller number of classes or associations, etc., as well as the result of the classification (taxonomy) activity [5, 42]. The terms and terminological combinations may be specific (highly specialized vocabulary), i.e. belonging to one science, while the meaning categories belong either to all sciences or to a number of sciences. To identify and describe the most important semantic categories is an important task and it is quite doable. For example: *Physiology and anatomy are biological sciences, as living organisms are examined. Physiology studies the processes of life, functions of the body, its systems, organs, tissues and cells. Anatomy studies the structure of the organism and its component systems and organs.* In this microtext, the categorical word that sums up its semantic content is the combination «matter of studies», to which we can formulate the following questions: 1. *What is the subject of studying for anatomy and physiology like?* 2. *What do anatomy and physiology study?* 3. *What is the subject of studying for anatomy and physiology?* 4. *What does the subject of studying for anatomy and physiology represent?* With all the variety and diversity of information contained in scientific texts, formal means of expression of the self-interrogative meanings are rather narrow and stereotyped.

A very common way of «catching» the meaning is its paraphrase [6, 170]. It is assumed that one meaning can be expressed by different language means, same as the listener can identify different forms of expression. «Hence, the meaning is the common sense present in all various statements that are recognized and used by native speakers as equivalent, or, in short, the meaning is an invariant of synonymous transformations – paraphrases [7, 7].

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