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METHODOLOGICAL ASPECTS OF FRAME MODELLING AND STRUCTURAL FRAME ANALYSIS IN FOREIGN LANGUAGE TEACHING

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The article analyses interdisciplinary research within the frame approach. The key points, the main concrete-scientific implication of the frame approach and its philosophical problems are considered. The author lays out the accents in terms of explication of the applied concept of "frame" and "frame-scheme", based on which, the results of philosophical reflections regarding social phenomenon are formed around the application of frame technology. In addition, the use of "frame formats" representation of educational material allows to more efficiently designing classes. The study focuses on the methodological aspects of frame modelling and structural frame analysis, as well as the application of frame modelling in foreign language teaching.

The article is devoted to the issues of intensive methods of teaching a foreign language through frame-based learning. The main properties of structuring educational and scientific information based on the frame approach are revealed. Attention is paid to the ways of grouping lexical material.

This work of the author focuses on finding a solution to the ways of constructing teaching and learning material with the help of the frame approach, which puts forward new principles of organizing training based on the use of frames. In order to integrate learning, the author proposes the developed methodological system of exercises. A model of teaching the construction of an outline in the form of a frame diagram of educational and scientific information is presented. The author offers and gives examples of using frame-schemes and frame-scenarios.

It is emphasized that frame-based learning involves the development of wide range skills needed to learn/teach both general and specialist vocabulary, as well as the skills needed to analyze linguistic structures and the cognitive frameworks they reveal.

Keywords: *frame, frame-based approach, frame models, frame analysis, frame-scenario, frame-outlines, philosophy, cognitive science, vocabulary.*

МЕТОДОЛОГІЧНІ АСПЕКТИ ФРЕЙМОВОГО МОДЕЛЮВАННЯ ТА СТРУКТУРНОГО ФРЕЙМ-АНАЛІЗУ У ВИКЛАДАННІ ІНОЗЕМНИХ МОВ

О. Е. Можаровська

У статті аналізуються міждисциплінарні дослідження в рамках фреймового підходу. Розглянуто ключові моменти, основні конкретно-наукові імплікації фрейм-підходу та його філософські проблеми. Автором розставлені акценти з точки зору експлікації застосовуваних

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поняття "фрейм" і "фрейм-схема", виходячи з яких, результати філософських рефлексій щодо соціального феномену формуються навколо застосування технології фрейму. Крім того, використання "фреймових форматів" репрезентації навчального матеріалу дає змогу більш ефективно конструювати заняття. У фокусі дослідження – методологічні аспекти фреймового моделювання та структурного фрейм-аналізу, а також застосування фреймового моделювання під час викладання іноземної мови.

Стаття присвячена розгляду питань інтенсивних методів викладання іноземної мови за допомогою фреймового навчання. Розкриваються основні властивості структурування навчально-наукової інформації на основі фреймового підходу. Приділено увагу способам групування лексичного матеріалу.

Дана робота автора фокусується на пошуку вирішення способів конструювання навчально-методичного матеріалу за допомогою фреймового підходу, який висуває нові принципи організації навчання на основі використання фреймів. З метою інтегрування навчання, автор пропонує розроблену методичну систему вправ. Наводиться модель навчання побудови конспекту у вигляді фрейм-схеми навчально-наукової інформації. Автор пропонує та наводить приклади використання фрейм-схем та фрейм-сценаріїв.

Підкреслюється, що фреймове навчання передбачає розвиток широкого спектру навичок, необхідних для вивчення/викладання як загальної, так і спеціальної лексики, а також навичок, необхідних для аналізу лінгвістичних структур і когнітивних рамок, які вони розкривають.

Ключові слова: *фрейм, фреймовий підхід, фреймові моделі, фреймовий аналіз, фрейм-сценарій, фреймові контури, філософія, когнітивна наука, лексика.*

Introduction of the issue. Scientific knowledge of the social reality phenomenon prompts scientists to search for approaches, methods and research tools. Multidisciplinary integrative approaches deserve special attention. Such a phenomenon as education does not cease to draw attention to its study by scientists from different scientific schools and fields. A huge layer of scientific works is devoted to its comprehension, genesis and problems of explication of the concept of "education". Without delving into the details of this term definition, let us dwell on the search for an instrumental approach to the implementation of the procedure for applying theoretical knowledge and their combination with practice.

In our opinion, the "theoretical image of education" should be formed by applying such a technique that would allow integrating all the attributes of the procedure for studying a social phenomenon. If we proceed from the fact that the theoretical image of education is a representation of the theoretical reflections of the studied phenomenon, then we propose to use an element of frame theory as a format for this representation – frame.

In today's multicultural, multilingual open society, knowledge of a foreign language becomes one of the necessary conditions and requirements for a specialist. In order to get a job, obtain a certain position, successfully realize and achieve professional success, a specialist is obliged to know at least one foreign language. In this aspect, the success of methods and approaches used by teachers in foreign language training is of great importance. Linguodidactics has a number of both traditional and experimental methods used in various types of work: in selecting the necessary lexical material, syntactic structures to fill a particular topic, selecting appropriate texts, etc. One of such approaches of knowledge modelling is the frame approach.

Current state of the issue. The research within the frame approach is carried out in different fields – cognitive psychology, computer science, sociology, linguistics, political theory, behavioral economics, communication theory, etc. Frame theory is one of the most interesting interdisciplinary approaches to the study of the world picture. It originates from the studies of American scientists Gregory Bateson [1], Erving Goffman [2], Marvin Lee Minsky [5], Norbert Wiener [12] and is not one complete theory, but is a set of concepts developed within the framework of

sociology, psychology, cognitive linguistics, cybernetics.

The concept of frames dates back to the work of one of the cybernetics founders, Norbert Wiener. However, it was originally embodied in the field of social communication, in the writings of Gregory Bateson. In his work "A theory of play and fantasy", he noted that different types of behavior establish a certain typical situation, which Bateson called "frame", literally meaning "frame" [1]. Any social situation in which a person finds himself has typical characteristics. In addition, these characteristics determine the ways in which people enter and participate in this situation. It is in this context that frame theory was developed in the works of Erving Goffman, who develops this idea in detail. In his work "Frame analysis: An essay on the organization of experience", the frame is interpreted as the structural context of everyday interaction [2].

Gregory Bateson's work has spawned several lines of research development and applications of frame analysis in the social sciences (psychology, political science, international relations, sociology). Parallel to this research, frame theory has been developed in the field of artificial intelligence. American programmer Marvin Lee Minsky in his article "A Framework for Representing Knowledge" proposed the term frame [5].

The development of frame theory and frame modelling was carried out by famous foreign scientists Charles J. Fillmore, Dietram Scheufele, Gerhard Schutz, Kirk Hallahan, Robert Paul Abelson, Roger C. Schank [9], Stephan Kornmesser [3; 4], Teun Adrianus van Dijk, Wallace Chafe.

The scientific novelty of the study is due to the author's approach to the issues of using frame learning in teaching a foreign language at agrarian universities.

Aim of the research is to review and analyze in detail all aspects of frame modelling and its use in foreign languages teaching at agrarian universities.

Results and discussion. The concept of "frame" entered the scientific community in the last quarter of the twentieth century and quickly enough took a strong position in various fields of scientific and pedagogical activity. Marvin Minsky (an American scientist, researcher of artificial intelligence, who worked at the Massachusetts Institute of Technology) was the founder of the theory of frames. According to Marvin Minsky, "a frame is a data structure for representing a stereotypical situation" [5: 1]. Each frame has different types of information associated with it. One part of it indicates how the frame should be used, another part indicates what it is expected to entail, and a third part indicates what should be done if these expectations are not confirmed. A frame can be imagined as a network of nodes and the links between them. Revealing the essence of the concept, Minsky proceeded from the fact that a man, trying to learn a new situation for yourself or take a fresh look at already familiar things, selects some data structure from his memory (image), which we call a frame. Marvin Minsky's approach to frame theory is closest to linguistic research [5].

The upper levels of the frame are clearly defined, because they are formed by such concepts, which are always valid in relation to the intended situation. At the lower levels there are many special cells to be filled with characteristic examples or data. Frame theory has found extensive application in various spheres of human thought – from computer programming to political science concepts and philosophy. It also has great prospects in the field of education. We can note that "the frame turns out to be a maximally generalized and therefore universal representation system of the most diverse information and assumes that the researcher himself sets its specific structure and content filling of superordinate nodes" [7: 168].

We will try to analyze and figure out what exactly the concept of a frame is for us: a method, a model, an approach or a technology. It should be mentioned "a frame is a cognitive structure with hierarchical organization, usually of pyramidal shape" [7: 168]. "Model" is an image of a system (a mentally represented or materially realized system that depicts

or reproduces an object). "Technology" is a system of conditions, forms, methods, means and criteria for solving a task". Based on the above, frame technology is understood as the study of educational material structured in a certain way in a specially organized sequence. The main feature of the technology is to increase the amount of knowledge learnt without increasing the teaching time. Usually a frame consists of several cells (slots), each of which has its own purpose. Thus, a frame is a model – an abstract image of standard stereotypical situations in symbols, a rigid construction containing as elements empty windows – slots, which are repeatedly recharged with information. With the help of the frame model, it is possible to compress structure and systematize information in the form of tables, matrices. Thus, in the practice of adapting frame theory to the educational sphere, a frame can be considered as a model, as a way/method and as a technology. The universal features of the frame from the standpoint of various scientific schools include: stereotyping; visualization capability; graphic form; availability of key characters, images, words; fixing analogies and generalizations. Stephan Kornmesser notes that "In the philosophy of science, the frame model is used in order to represent and analyze scientific concepts and conceptual change. However, the potential of the frame model is far from being fully exploited" [3: 228].

The frame approach has a long history, but it is difficult to speak about its unity. The phrases "frame theory" and "frame approach" can be found in the works of linguists, researchers of artificial intelligence, sociologists, psychologists (both cognitive and humanistic), political scientists, etc. Moreover, different researchers put different meanings into the word "frame" itself. In the light of the above, in our work the expressions "frame theory" and "frame approach" are different in meaning and are used accordingly. Frame theory is an expression of the frame approach in a particular science (linguistics, computer science, sociology, etc.). Developments within the frame approach found one of their first applications in the field of Artificial Intelligence (AI). To date, there have been many criticisms of these theories, also predominantly in the field of artificial intelligence. However, an interesting circumstance turns out: the criticism of the frame approach in AI turns out to be also a criticism of the AI project itself in general, including at the philosophical and methodological level. This allows us to rethink the general principles of the frame approach, to clarify the methodological aspects of modelling.

In general, the frame approach reflects the stereotyping of something: perceptions, events, phenomena, behavior, etc. A frame is a framework, frame model of generalized knowledge, which has a universal, typical character. Graphically, a frame can be represented as a network, the nonterminal (intermediate) nodes (slots) of which represent general information typical for the category of objects under consideration, and the terminal nodes are filled with specific information inherent to a given object. Several types of information are associated with each frame: about the state of the object, its use, what to expect, behavior in the context of a given situation.

The main properties of structuring educational and scientific information on the basis of the frame approach of knowledge representation are: visibility (information is presented in the form of frame diagrams); compactness (educational material is compressed, presented without duplicating information); logical clarity (frame diagram design in the form of block modules or slots taking into account the logical construction of information). Frame diagram contains as elements key words and word combinations, as well as empty slots, which are repeatedly filled with new information (lexical units, syntactic constructions, formulas, etc.). A frame diagram is dynamic, it is used repeatedly as new learning material is learnt and serves as a model for the learner throughout the process of

acquiring new information and it is carried over unchanged from topic to topic, being filled in with the same type of new information.

The frame approach, which essentially puts forward new principles of organizing educational and methodological material based on structuring, arose under the influence of the rapid development of information technology. Frames, as cognitive structures, contain the most essential, typical and potentially possible information that is associated with a particular concept [6: 766]. Some scholars define a frame as a means of cognition, memory organization and organization of all information about the phenomenon under study [10]. The principle of frame structure implies its complex hierarchical nature with subframes, superframes, slots and terminal nodes. In frame-based learning, students find solutions by moving through the tree-like structure of the frame. By their type, frames can be sensory, auditory, visual, and audio-visual. Semantic information, for example, can be represented in the form of a frame network consisting of image frames used in different situations that set goals for scenario frames. The frames methodology is in many ways similar to the domestic methodology of reference schemes.

When teaching sociocultural competence, situational and classification frames are used as a way of representing stereotypical situations and certain cognitive structures. When studying frames and their interrelationship in a particular linguistic culture, one can identify universal frames that are significant only for that culture. They are reflected in frame-type dictionaries, where foreign language realities are presented with explanations designed to remove potential obstacles in the process of intercultural communication. It seems that the implementation of the frame approach based on the national tradition of analytical approach to foreign language teaching will significantly improve the quality and speed of learning in a non-language educational institution. Such advantages of the frame approach to the presentation of material as compactness, structure and logical interaction will be especially effective at the technical and economic faculties of educational institutions, where, due to the specifics of the subjects studied, students have developed logical thinking. In addition, this method is naturally integrated into the computer environment.

The memory and perceptual time-saving properties can obviously also manifest themselves in the representation of non-visual knowledge about the world [9: 21]. Indeed, systems of non-visual frames, such as the scenario frames described below, can be represented as one possible understanding of the subject matter; for example, an electric generator can be represented as both a mechanical and an electrical system. Any knowledge about the world can be represented in the form of some general universal fragments, to which correspond their own frame systems and from which new frame systems can be formed corresponding to some new understandings. Representation of knowledge about the world by means of frames turns out to be very fruitful. In this case, Marvin Lee Minsky's work suggests building knowledge about the world in the form of frames-scenarios [5]. According to Marvin Lee Minsky, a frame-scenario is a typical structure for some action, concept, event, etc., including characteristic elements of this action, concept and event. For example, a frame-scenario for an event consisting in celebrating a child's birthday includes the following elements, which can be interpreted as frame nodes filled with tasks:

Clothes: Sunday best;

Gift: must like.

To explain a person's quick understanding of the situation represented by a scenario, the work we suggest identifying the frame-scenario terminals with the most characteristic questions usually associated with this situation. The answers to these questions are useful for understanding the given situation. In essence, a frame-scenario in this case is a collection of questions to be

asked about some hypothetical situation and ways of answering them. For a frame scenario a child's birthday party, these questions would include the following: "What should the guests wear?", "Has a gift been chosen?", "Will the child like the gift?", "Where to buy the gift?".

In order to understand the action being narrated or observed, a person often has to ask questions such as:

"Who is performing the action (agent)?",

"What is the purpose of the action (intention)?",

"What are the consequences (effect)?",

"Who is affected by the action (the recipient)?",

"How is it produced (instrument)?".

Slightly different questions are asked about understanding things that differ from actions, and these questions may be much less localized than in the case of understanding actions, for example: "Why are they saying this to me?," "How can I find out more about this?," "How will it help in solving the problem?" etc. According to the story, they ask what the topic is, what is the author's attitude, what is the main event, who is the main character, etc. As each question is tentatively answered, new frames may be called from memory corresponding to the situations that result from answering the questions.

It should be noted that the number of questions associated with a frame is indeterminate, and at first glance, it would seem that there might be many questions to understand the situation. In practice, however, it may be sufficient to ask very few questions to understand it. Different people may ask different numbers of questions about the same situation. The number and nature of these questions depends largely on the individual's knowledge base about the subject under discussion. It may be that full understanding will not be achieved because the individual lacks the necessary frame system that integrates knowledge about the subject under discussion. However, when the necessary knowledge base exists, and with respect to everyday concepts, actions, reasoning, any individual has it, a small number of questions are usually sufficient to understand the situation. This is a very fundamental circumstance, due to which at the intuitive level we come to a very encouraging position for practice, which is that a large number of real situations arising in the understanding of language, reasoning, actions can be understood by getting answers to a limited number of questions. This indirectly confirms the possibility of building relatively simple models of the world, in this case with the help of frames, sufficient to make decisions in these situations.

In the case of scenario frames, the markers of frame terminals become more complex than in the case of visual image frames and define recommendations on how to answer questions, i.e., to fill the terminal with a task. Each terminal should contain recommendations on how to find the answer to the question. The tasks of the list of possible answers to questions are the simplest special cases of such recommendations. Full and comprehensive representation of each situation type event, action, reasoning, etc. is carried out with the help of not one, but a system of frames. Each frame corresponds to one possible view of the situation represented by the frame system, just as one of the system's visual frames represents a visual image from some single viewpoint. Different frames of the system represent different ways of using the same information held at common terminals. As in a "visual situation," a person "chooses" one of the frames when understanding or communicating a thought. This choice is "essentially" a choice of questions to ask about the situation at hand.

Each scenario has role-players. It has different interpretations reflecting the viewpoints of the different actors. Thus, it can be considered as a system of frames. The number of scenarios reflecting possible situations encountered in real life is enormous. This includes the child's birthday mentioned above and playing football, school, etc. Here and further, we offer frame scripts that we use while teaching foreign language at Vinnytsia National Agrarian University. The

following is a restaurant visit scenario from the visitor's point of view:

Roles: customer, waiter, chef, cashier

Purpose: to get food to satisfy hunger

Scene I. *Entrance*

Enter the restaurant

Eyes directed to where there are empty tables

Choose where to sit

Head to a table

Sit down

Scene II. *Ordering*

Receive menu

Read the menu

Decide what you want to order

Make an order to the waiter

Scene III. *Food*

Receive food

Eat the food

Scene IV. *Leaving*

Ask for a bill

Get a check

Go to the cashier

Pay the money

Leave the restaurant

In each scenario, the means of doing things may vary according to the circumstances. For example, in scene II, an order can be made in writing, orally, or even (in a foreign country if you do not know the language) with gestures. In scene IV, the payment of money may be made to a cashier, a waiter, or by saying "Put it on my bill". It is also possible that the usual sequence of actions will be broken. There are at least three characteristic cases of such a violation. The first is the deviation, which is the interruption of the subsequent activity of the script by another scenario. The other two cases are called obstacle and error. An obstacle occurs when someone or something interferes with a normal action or some condition necessary for the action to be performed is missing. An error occurs when an action is not completed as required. In principle, obstacles and errors can occur after each elementary action of the scenario, so the scenario introduces various sets of questions such as "what if...", the answer to which should be received after each elementary action. If one of them is answered in the affirmative, the scenario provides new actions that remove obstacles and errors. For example, in scene II of the "restaurant" scenario, if the waiter does not notice the visitor, he will try to meet her gaze or call out to her. Thus, a scenario is not just a chain of events but also a connected causal chain of actions. It can branch into many possible paths, which converge at points particularly characteristic of the scenario - elementary actions. For a scenario in a restaurant, these actions are "eating" and "paying money". In order to know when to use a script, you need headers. These headings define the circumstances under which the scenario is invoked. Scenarios describe stereotypical, commonly encountered situations. They may cover several narrower situations. Scenarios are associated with a certain range of questions, the answers to which determine the choice of tools that determine the actions of the scenario. Since, in accordance with the position stated earlier, the process of human understanding of a real situation is the selection from memory and adaptation to this situation of an appropriate frame, the question arises about the possible mechanism of this act.

The use of the frame approach in teaching a foreign language facilitates the procedure of selecting lexical material on a particular topic. When studying a lexical topic, students are presented with a stereotypical situation that includes frames. For example, the situation "Getting a job" is presented in frames: "Writing a CV", "Job search", "Interview" and slots: participants and their actions. Each of the participants in the process: the employer and the applicant are assigned actions for the employment situation, which are divided into actions performed before, during and after employment.

The use of the frame approach in presenting new vocabulary material contributes to the thematic grouping of vocabulary, which preserves the semantic connections between the components. A student learns these groupings together with the main meaning of the lexical items

and can easily restore them by creating a mini-text according to the topic.

The frame approach is an effective method of teaching productive speech activities and organizing speech practice. The activation of speech skills is carried out by students performing the following tasks based on the frame: answering the teacher's questions, turning a dialogue into a monologue, and composing a story on the topic.

Results. The results of the presented practical case study on the use of the frame methodology for teaching/learning financial terminology allow us to draw the following conclusions:

1. Frame semantics opens up new possibilities for developing methods of teaching/learning vocabulary that allow linking lexical units into cognitive structures and thus facilitate their understanding, as well as memorization and recall.

2. The frame methodology is particularly relevant for learning/teaching specialized vocabulary (terminology), as it helps to identify the conceptual structure and substructures of a specialized field, the categorization of concepts and their interrelationships. The perception of these interconnected structures allows for a much better understanding of the subject area, minimizes the time spent on memorizing terms, reduces the memory load and thus facilitates the acquisition of terminology and its accurate use.

3. The frame methodology is based on corpus analysis, so students have the opportunity to work with terminology used in texts created by experts in specialized fields and used in specialized communication. Corpus material allows you to identify dominant terminology and study its frequency and distribution in the subject area. It also allows us to identify the actual usage of terms, i.e. their word combinations, syntactic structures in which they are used, and the most frequent grammatical forms.

Thus, frame-based learning involves the development of a wide range of skills necessary for learning/teaching both general and specialized vocabulary, as well as the skills necessary for analyzing linguistic structures and the cognitive frameworks they reveal.

In the course of practical classes, we developed, proposed and tested methodological system exercises aimed at teaching the construction of frame-schemes of educational and scientific information. Working with educational and scientific information in its written and oral implementation requires from students the formation of special skills related not only to the analysis of the external structure and content of a scientific text, but also to the analysis of its compositional and speech forms. These skills are formed as a result of performing specially designed exercises aimed at:

1. Overcoming phonetic difficulties (language exercises). This module consists of two blocks, which include exercises aimed at: - improving the mechanisms of listening: anticipation, increasing the volume of working memory, internal pronunciation, short-term memory; - developing and improving the skills of phonetic recognition and distinction of the word semantic content, automated lettering, speed recording of letters and words, automated written reproduction of the graphic appearance of a word according to its sound image, automated recording of lexical units into schemes, formulas, symbols; - seeing the limit of words and terms abbreviation; - identifying the sound correspondence of international lexical units and guessing their meaning.

2. Overcoming lexico-grammatical difficulties (language exercises). This module consists of four blocks of exercises aimed at: - development of skills for recognizing the grammatical appearance of a word, correlation of the lexical unit graphic appearance with its semantics; - transformation of lexical units and syntactic constructions, reproduction and written fixation of key lexical units and syntactic constructions of scientific speech style, grammatical and semantic combination of lexical units representing a term; - recognition of terminological vocabulary and word

combinations representing a terminological unit; - correlation of key lexical units with their meaning; - combination of words in order to obtain a terminological unit, high degree of linguistic guesswork; - automated orientation and search for synonymic elements, general understanding of lexical units and stable syntactic constructions of scientific speech style, equivalent substitutions, associative links, automated replacement of words by symbols, signs, formulas; - grammatical correctness of written speech, information recovery, prediction of lexical units meaning and utterance as a whole, speed recording of information, borrowing of word-blocks, vision of word combinations and sentences, syntactic skills of linear sentence construction, unconscious recognition of grammatical positions for words, simplification of sentence structure.

3. Overcoming difficulties in understanding the logical development of thought within a scientific text (conditional-communicative exercises). This module consists of a block of exercises aimed at: - development of the following skills and abilities: selection of significant information of the whole message, orientation in the general structure of the educational-scientific text; assessment of the information novelty and its significance for writing; prediction of the general orientation of the message; selection of the main and duplicate information of the message; complex understanding of the text.

4. Making frame diagrams of educational and scientific information (natural-communicative exercises). This module consists of a block of exercises aimed at: development of the text understanding skills, recognizing its logical structure, highlighting themes, micro-themes, key lexical units, building a frame-scheme. The formation process of information written fixation skills in the form of frame-schemes was divided by us into two stages: 1) composing frame-schemes on the basis of written educational and scientific text on the profile of the future specialty; 2) composing frame-schemes on the basis of sound text. Due to the fact that reading as a type of speech activity has a number of advantages (perception of information through the visual analyzer, and, consequently, greater bandwidth of the received information, the efficiency of visual memory, the possibility of multiple references to the original source of information), the texts for reading were presented somewhat more complex than for listening. Texts for reading and listening were selected taking into account the general thematic orientation (from textbooks on the specialty and texts of lectures by leading teachers of the faculty, published on the Internet), which ensured repetition and memorization of lexical and grammatical materials. The texts for reading had a larger set of various methodological difficulties than those intended for listening comprehension. Such obstacles were understood as the complexity of grammatical constructions (the presence of participial and de-partial turns, compound sentences), lexical difficulties (new terminological vocabulary), peculiarities of the text semantic blocks arrangement (the semantic information located at the very beginning of the text with a system of arguments and conclusions was best perceived).

Composition of lecture notes and theoretical material in the form of frame-charts by students has a number of advantages, namely: it stimulates the consolidation of knowledge obtained simultaneously with the assimilation of new educational material, which is especially important in cases when the understanding of each subsequent topic is built on the basis of the previous one; brevity of presentation and capacity of the received theoretical information in the content of the frame-scheme allows to refer to it repeatedly during the whole period of training; fast building up of terminological conceptual apparatus in the process of teaching and frame-charting allows to raise the level of professional communication between teacher and student in the shortest possible time; a system of exercises aimed

at reading and listening, framing diagrams allows to use four types of memory: visual, auditory, graphic and visual. It activates the subconscious mind to memorize the material; visually shows the main sections and topics.

In the process of interaction between teacher and students, certain knowledge, skills and abilities are transmitted on the one hand, and their assimilation on the other. Since a frame is a certain form of knowledge representation, a certain generalized model, a scenario of a stereotypical situation, a teacher can model knowledge and learning situations with the help of frames. Learning such models helps learners to master the vocabulary and grammar of the target language.

Since the final product in the developed methodological model was the construction of frame-schemes of sounding educational and scientific information, we will give examples of tasks aimed at the construction of this information during their oral perception.

Task 1: *Listen to parts of the text. Highlight and write down the key words.*

Semiconductors are of two types: n-type and p-type. In n-type semiconductors, electrons are the main charge carriers. In p-type semiconductors, the main charge carriers are holes. Depending on the carriers, the conductivity of semiconductors can be intrinsic and impurity. Impurity conduction comes in electronic and hole conductivity. Impurities can be added to a semiconductor. Impurities come in the form of donor and acceptor impurities. Donor impurities give up electrons, yielding a p-type semiconductor. Acceptor impurities take electrons away, resulting in a p-type semiconductor.

Task 2: *Listen to the text, answer the questions, fill in the blank slots.*

1. What types of semiconductors are there?

2. What are the main charge carriers in n-type semiconductors?

3. What can the conductivity be?

4. What can be added to a semiconductor?

5. What are some impurities?

Task 3: *Listen to the text, identify the micro-themes, fill in the blank slots.*

1. Impurities:
- donor
- basic
- acceptor

2. Semiconductors:
- b-type
- n-type
- p-type

3. Carriers:
- electrons
- protons
- holes

4. Conductivity:
- intrinsic
- impurity
- hole

Task 4: *Listen to the text; identify the theme of the text.*

- Semiconductors;
- Conductivity of semiconductors;
- Donor and acceptor impurities.

It is reasonable to distinguish two main types of frames: linguistic (aimed at teaching purely linguistic skills) and special, specific (oriented to the formation of skills in the use of special vocabulary). We divide the work with the frame into main stages, presenting it to the students in the form of presentations, tables and other handouts. Then the students are involved in working with the frame through a game or discussion. Here it is supposed to be not classical consolidation

by examples, i.e. not traditional presentation of material, but on the contrary – demonstration of a situation taken from a living language, or work with some similar examples. In the same way, the learning of the material is monitored and the effectiveness of the frame approach to learning is evaluated.

Let us demonstrate an example of using frame-technology, which is successfully used in the pedagogy teaching methodology classes. It is used in the following way: students are given the text of the lecture, after familiarizing themselves with it they are offered a certain frame scheme. The scheme consists of slots, which are already filled with certain content and painted with certain colours. Through and with the help of colour, the student's attention is drawn to a certain slot through visual perception. An example of colour differentiation is given: justifications, hypotheses, conclusions, patterns – in one colour; task (problem) – in another colour; didactic objectives – in a third colour; problem solution – in a fourth colour; test task – in a fifth colour.

All the advantages of frame modeling are also valid in relation to the procedure for creating and perceiving texts in a foreign language. Texts of a certain theme and genre are built according to the appropriate rules, schemes and models. Such texts contain semantic blocks, mandatory and variables. For example, the story "About yourself" can provide information about a person's occupation in a given period of time, his hobbies, a description of appearance, character, etc. A description of a tourist object will certainly indicate his location and time of creation or the age of the object, some facts of its history can be mentioned, the appearance is described and its historical and cultural significance is characterized. Such semantic blocks form the frame substructures of the story "About yourself" and the description of the tourist site, respectively.

A frame can be represented as a graph consisting of some elements, namely terminal vertices or cells, their various associations, substructures, and relations between them, that is, the conditions established by each terminal that must satisfy the corresponding tasks. Such a generalized description of the main content of the discourse, or macrostructure, has several levels of generalization, that is, it is formed in accordance with various degrees of generalization. Discourse is understood as a set of thematically related texts: texts combined into discourse are addressed, one way or another, to one common topic. Moreover, regardless of the level of generalization, it represents some semblance of an abstract plan of this discourse. With regard to modeling a discourse in terms of its attribution to a certain type or genre, without taking into account the specific content of this discourse, a superstructure is used, which is some standard scheme according to which the type of discourse in question is built.

Having studied the frame structure of a certain discourse, we will thus identify the main semantic blocks that correspond to the substructures of the frame, as well as the connections between them due to the conditions and tasks of the terminals. It means we will compile a list of the necessary semantic parts of the text and determine the semantic relationships of various levels. By constructing the text in accordance with such frame structures and the semantic connections between them, students will fully reveal the problem by including the necessary information on the selected topic. The text will be structured, logically organized, divided into semantic blocks, and therefor understandable from the point of view of the interlocutor's perception. In addition, the macrostructure is built according to certain rules: in accordance with the procedures for reducing insignificant information, combination and generalization. This means that such a macrostructure of a single text or discourse corresponds to the structures of a person's long-term memory and will be fully assimilated by students. The frame structure also takes into account the presence of optional but possible information. For example, in the

description text of a tourist object, these are additional facts of its history or a detailed description of one of the object structural parts, which, according to the author, are important, worthy of attention, or distinguish this object from a number of similar ones.

Thus, the frame is not a rigid, absolutely fixed structure, such a model implies variability and the possibility of including necessary and interesting information from the addressee's point of view, and therefore does not exclude the creativity of students. In addition, by performing the tasks of determining the mandatory and variable structures of the text frame, students will develop the skills of highlighting the main and secondary in the text in a foreign language. Knowledge of the general structure of a certain discourse and the ability to identify such a structure in an interlocutor's oral message or a written text will greatly facilitate students' perception of a text in a foreign language. Students can be offered both simple tasks (to correlate a text with its structural model, frame, to select a frame for a text from a number of proposed ones, etc.) and more complex tasks (to independently form a structural model of a particular foreign-language text, to identify substructures or upper levels of a frame, etc.). The ability to systematize the presented information, to divide it into semantic blocks, highlighting the central slots containing the main system-forming concepts, will allow students to correctly build semantic links and correctly perceive the text in a foreign language.

Since the final product in the developed methodological model was the construction of frame-schemes of sounding educational and scientific information, we will give examples of tasks aimed at the construction of this information during their oral perception.

Task: *Listen to parts of the text. Highlight and write down the key words.*

The use of the frame approach will facilitate the procedure of selecting lexical material of a certain topic. Thus, the active vocabulary of students necessarily includes lexical units, central concepts located at the upper levels of the frame. The vocabulary list, obligatory for learning, for the selected topic also includes the glossary that fills the main top terminals of the frame. For the text describing a tourist object, such as a castle, such lexical units are "castle"; "building"; "complex"; "residence"; "palace"; "renovation", "modernization", "rebuilding", etc. Knowledge of the basic vocabulary is necessary for students to understand any foreign-language text of a certain discourse, in this case tourist. Proficiency in such vocabulary determines the success of communication within a given topic. Lexical units that fill the cells of the frame lower levels and, accordingly, demonstrate low frequency of use, should be included in the student's passive or potential vocabulary.

A frame reflects a stereotypical representation of an object or situation for a certain cultural community. Therefore, in addition to free, unrelated lexical units, it contains a set of stable word combinations, phraseological phrases and clichés peculiar to a certain discourse in a given socio-cultural context. Thus, the frame approach allows taking into account the national-cultural component in the selection and presentation of foreign language vocabulary, the specificity of the culture of the native speakers of the target language. The frame structure also reflects the use of vocabulary certain categories, the frequency use of the certain lexical-semantic groups units. For example, when describing the castle, the texts are characterized by the use of various adjectives characterizing the location of individual elements in relation to each other, the sides of the world, etc. These are, for example, such words as "central"; "northern"; "southern"; "western"; "surrounding" and others. This group of adjectives fills the description substructure of the castle's external and internal views. These adjectives characterize the main elements of the construction, peculiar to the castle and distinguishing it from other architectural objects. Such elements of the structure, for example, are tower; wall; facade;

bastion; moat and others. These lexical units and corresponding groups fill the main slots of the considered substructure. Consequently, they should be included in the active vocabulary of the given subject, and therefore, they are necessary for study. At the same time, the vocabulary analysis filling the considered substructure of the external and internal views of the castle description revealed an unexpectedly low use frequency of adjectives of colour.

The frame approach favours the thematic order of lexical grouping: lexical units can be introduced in mini-groups united according to the substructures of the frame. Using this method of grouping lexical material preserves the semantic links between the components that the learner assimilates with the basic value of lexical units, thus it can be easily recovered by creating mini-text limited, in accordance with this framework substructure, themes. For example, the adjectives "unique" and "exceptional" characterize the cultural and historical value of a certain tourist object, for example, a castle, and are included in the corresponding frame substructure together with such lexical units as "world heritage list", "treasure", "worldwide", etc. By mastering this group of vocabulary, students not only learn the peculiarities of its combinability, but also get an opportunity to independently build a mini-text on the problem of cultural and historical significance of an object.

Conclusions and research perspectives. Frame modelling recreates stereotypical representations of objects and phenomena of a certain cultural community by means of some structural models. Reflecting the common conceptual structures of this society, this approach has a number of advantages when using a foreign language in the learning process. Such models, both in their structural characteristic and in the vocabulary content, reflect the specificity of the representations of a certain society, the national and cultural component, which is important for learning a foreign language. Frame structure and its peculiarities correspond to semantic blocks and interrelations of discourse semantics elements, knowledge of which is necessary when creating a text in a foreign language or for its adequate perception. The attribution of information to mandatory or variable substructures of the frame indicates the necessity of mentioning relevant facts. Finally, the filling of different nodes-terminals and cells of the frame reflects the composition and peculiarities of the corresponding discourse vocabulary, which facilitates the procedure of selection and presentation of the necessary lexical material.

Frame-based learning thus involves the development of a wide range of skills needed to learn/teach both general and specialist vocabulary, as well as the skills needed to analyze linguistic structures and the cognitive frameworks they reveal.

In general, a frame is a clearly structured structure, a model of knowledge representation. In philosophy and psychology, the concept "abstract image", which is close in semantics, is used more often. Researchers interpret it within the framework of their own mentality; endow it with peculiarities and characteristics in the prism of their scientific potential. This is undoubtedly the case, and this approach leads many discourses to new practices.

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