Further it is planned to implement the written machine learning algorithm into the game and improve it, then hold competitive matches between the machine and the person, as well as the machine and the machine.

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MULTI-LINGUAL DICTIONARY AS A DIDACTIC TOOL FOR LEARNING A FOREIGN LANGUAGE

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In the process of learning a foreign language, the work with the dictionary is essential. Such work can be different. At first, it is usually limited to translation: we use translation dictionaries in which semantic material is presented both in the language being studied and in a known language. Afterwards there is a progressive change of teaching methods and, accordingly, the transition to explanatory, monolingual dictionaries of the language under study. Lexicographic publications and materials of various types accompany the process of studying a foreign language communication at all levels and stages.

Coined in English 1680, the word "lexicography" derives from the Greek λεξικόν lexicon and γράφω grapho, "to scratch, to inscribe, to write". Lexicography can be divided into two separate but equally important groups: theoretical and practical ones [1]. The theoretical lexicography studies the semantic structure of words, their peculiarities, interpretation and so on. The practical study is dealing with issues of compiling, writing and editing dictionaries. The practical applied orientation is particularly important in today's realities. Today, the term "computer (or electronic) lexicography" appears more and more frequently in scientific publications and studies because of the Informatization of all spheres of the human life, which entails the informatization of science and its individual branches.

One of the leading specialists in computer linguistics Vladimir Selegey notes, that computer lexicography is a special area of practical lexicography with its own approaches not only to the type of displaying a dictionary but also to the content of it [2].

The form and content of dictionaries should not be overlooked, a function that is undoubtedly subject to change within the context of automation and informatization of educational process.

In this article, we propose a hypothesis that in modern realities, the dictionary can and should not be only a source of information, but also a didactic and methodological tool for teaching, in addition to already known and innovative methods and technologies of teaching.

The aim of the research is to create an example of a multi-lingual dialog dictionary that allows interaction between the program (the dictionary itself) and the student.

Material and methods. Using mathematical modeling, we created two prototypes: a multi-lingual bot dialogue dictionary and a bilingual training dictionary, on the basis of which the bot functions. Prototype is a chat bot program capable of dialog with the user using a predefined "phrasebook" – a list of phrases and expected answers to them. In this case, the "phrasebook" is a model of the training glossary, which contains language pairs of words in the studied and native (or already familiar) language – translations. During the experiment, based on the Chat2004 platform (a freely distributed program for the creation of dialogue bots), we have developed a model of the German-Russian dictionary of terms of the closest kinship, recommended for learning during the standard topic "Meine Familie", and suitable for use in German lessons of the primary level (4-6 grade primary and secondary schools).

Findings and their discussion. The fundamental and basic characteristic of this model is its interactivity. We call interactive those tools and devices that provide continuous dialogue between the user and the computer [3]. Such educational tools and methods are currently leading in the teaching methodology, as they provide the implementation of personalized and technological approaches. Two algorithms are possible to provide interactivity: the user responds to the requests of the program: the student can enter the translation of those words that are randomly given by the bot, or the program responds to the user's request for a predefined correspondence contained in the dictionary in the form of pairs (word translation). The study identified the following advantages and features of the Dialogue Dictionary as a didactic tool, among others

1) The whole paradigm corresponds to a person-centered approach to learning: the vocabulary of the Dialogue Learning Dictionary is a maximally personalized, pedagogically selected material that corresponds to the level of learning, interests and learning needs of every student.

2) On the same basis, the dictionary model can be considered suitable for narrow topics: the dictionary contains a certain sample of vocabulary units (terms) and will not include redundant information. It increases the relevance of the acquired knowledge and, consequently, the level of motivation to assimilate it.

It has to be noticed that the use of this model in practice requires a number of important pedagogical conditions. The "before use" training should involve all participants of the educational process: students should be prepared and instructed on the algorithm of "communication" with the dictionary, the teacher

should take a responsible approach to vocabulary and bot training, the choice of the strategy and technology for its application in the classroom, think through the methodological and pedagogical meaning of its implementation. That means that working with a dialogue bot requires a very thorough and, as a rule, long preparatory stage, as the functioning of the program largely depends on it.

There may be many variants of technological application of this model in teaching: with the help of a dialogue bot we can test students' knowledge on a given topic using the latest technologies, students can apply to the bot for reference information submitted in an interesting form. After the conversation with the bot, the teacher can review the logs (full recording of the dialogue with the program) and draw a conclusion about the level of vocabulary assimilation on the topic. It is also possible for students to create their own dialogue dictionaries and learn from them as a special way to practice vocabulary.

Conclusion. The current level of technologies development of the world dictates the need for an ever-increasing transformation of the educational process. The use of described in the article prototype makes learning more effective, interactive and interesting for students, what should be given special attention in the development of new paradigms and norms in education today, as well as new understanding and reflection of the learning process itself.

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UNIFORM GLOBAL ATTAINABILITY
OF A LINEAR CONTROLLED DISCRETE-TIME PERIODIC SYSTEM

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Today, along with the study of linear controlled periodic systems of ordinary differential equations much attention is paid to the exploration of similar systems with discrete time.

The main aim is to receive the necessary and sufficient conditions of uniform global attainability of a linear discrete-time controlled periodic system.

Material and methods. We obtained the main results using the methods of theory of control over asymptotic invariants of linear differential systems, linear algebra and matrix theory.