

## THE PECULIARITY OF NEUROTECHNOLOGY APPLICATION IN FOREIGN LANGUAGE TEACHING

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**Abstract.** *The article is devoted to the topical issues of effective application of neural networks in foreign language teaching; it analyses the pedagogical, methodological and psychological potential of exercises, mini- and macro-texts generated with the help of neural networks and the possibilities of their combined integration into the linguodidactic process of foreign language teaching. For accessible interpretation of the studied object such methods as the analysis of lexical-methodological article to determine the dominant lexemes "electronic library", "neural network", "artificial intelligence"; pedagogical monitoring (experimentation of skills and difficulties in the formation of language and speech experiences of students, ways of their solution); modelling of practical tasks and exercises are applied.*

**Key words:** *electronic library, neural network, artificial intelligence, pedagogical monitoring, communicative function, personalized learning, the communicative approach.*

## ОСОБЕННОСТИ ПРИМЕНЕНИЯ НЕЙРОТЕХНОЛОГИЙ В ОБУЧЕНИИ ИНОСТРАННЫМ ЯЗЫКАМ

**Аннотация.** *Статья посвящена актуальным вопросам эффективного применения нейронных сетей в обучении иностранным языкам; анализируется педагогический, методический и психологический потенциал упражнений, мини- и макротекстов, сформированных с помощью нейронных сетей, и возможности их комплексной интеграции в лингводидактический процесс обучения иностранным языкам. Для доступной интерпретации изучаемого объекта применяются такие методы, как анализ лексико-методической статьи для определения доминирующих лексем «электронная библиотека»,*

*«нейронная сеть», «искусственный интеллект»; педагогический мониторинг (экспериментирование навыков и трудностей в формировании языкового и речевого опыта учащихся, пути их решения); моделирование практических заданий и упражнений.*

**Ключевые слова:** *электронная библиотека, нейронная сеть, искусственный интеллект, педагогический мониторинг, коммуникативная функция, персонализированное обучение, коммуникативный подход.*

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A neural network is a software algorithm that operates on the principle of enumerating values on the way to a solution. If you want, you can save successful solutions and make the neural network interact with them in different ways: the neural network will self-learn.

To understand neural network logic, it is necessary to keep in mind the idea that a neural network does not understand the essence. It just goes through the interpretation and analyses which values lead to the goal set by the programmer. Because of this, the neural network cannot "understand" its error. It "sees", the result is not achieved, and after that it varies other similar equivalents. The simplest and most obvious method of selecting the appropriate option is to select training materials depending on the person's level of intelligence and needs. The algorithm is the same: we send people from a certain group the material and measure the reaction. Then we memorise the reaction and try other materials. The ones that users reacted best to are labelled as suitable for teaching other people in the selected group. Then there is the checking of completed tasks and the ability to point out the wrong points that led to an incorrect answer. The easiest way to implement this is in language learning: even with complex grammar, we do not have complex logical chains and a huge number of variables, which are present in maths and physics. Neural networks are also able to take into account which tasks are given the worst and emphasise these topics: suggest repeating the material and giving additional tasks. In our opinion, in the ideal distant future, a neural network will fulfil a communicative function in relation to humans, understand them and convey knowledge in the simplest and most understandable form. But in order to do this, the neural network will have to have a huge knowledge base, so for now it is only an anthropohypothesis of the future. Let's take a closer look at individual moments.

How neural networks began to be used and how they help us learn today.

G. D. Svirina, Candidate of Philological Sciences at St. Petersburg University, believes that everything started with the launch of the Knewton project in 2008. It was launched to help students create class schedules.

Ten years later Knewton is still functioning, which hints to the administration about the demand for such functionality. After similar programmes were launched by various language learning platforms.[1]

Before you start learning, a personalised prediction is made: it asks your age, your level of knowledge and interests, and why you are learning the language. Based on your answers, the neural network then selects the right programme for you. Due to the instant automated selection it is easier for a person to learn the language: you can watch TV series, read popular science articles or listen to Pushkin or Shakespeare in the original. In addition, a beginner does not dive into complicated topics, and a learner does not skip familiar words. This is how learning becomes more effective. With the development and widespread use of neural networks, the amount of learning material available online is also growing. This helps to make online learning more effective: the more materials, the more approaches can be tried and the more explanation options are available to students. The systems have also learned to monitor a student's progress and his or her state, which helps to predict possible behaviour and correct it in the future, in time to motivate him or her to continue learning.

Online quizzes, tests, and assignments can provide students with instant feedback, allowing them to track their progress and identify areas for improvement. Teachers can also use digital tools to assess students' language skills, monitor their performance, and provide targeted support for students to achieve their learning goals.[2]

Personalized learning allows teachers to provide targeted feedback and assessments that respond to each student's unique needs and areas for improvement. This helps students monitor their progress and make adjustments to their learning strategies.[3]

This approach emphasizes real-life communication and interaction, and aims to develop students' speaking and listening skills through the use of meaningful and authentic language. [4]

The communicative approach values communication for its own sake, emphasizing the exchange of ideas, information, and feelings. Traditional methods may prioritize accuracy and correctness over meaningful communication, leading to a focus on grammar exercises and translation exercises. A communicative approach often integrates cultural elements into language teaching, which helps students develop cultural awareness and intercultural competence. Traditional methods may focus only on language structures and neglect the cultural aspects of language learning.

In general, the communicative approach is a more dynamic, interactive, and student-oriented approach to language teaching that emphasizes communication, authenticity, and cultural understanding offers a focused approach. By shifting the focus from memorization to practical language use in real-life situations, teachers help students develop not only language knowledge, but also the ability to communicate effectively and confidently in the target language. [5]

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