WayScience

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Topics cover all sections of the International Electronic Scientific and Practical Journal "WayScience", namely:

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- psychological sciences;
- sociological sciences;
- political sciences;
- philological sciences;
- technical sciences;
- medical sciences;
- chemical sciences;
- biological sciences;
- physical and mathematical sciences;
- other professional sciences.

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Philological sciences

SCIENTIFIC RESEARCH AND INNOVATION

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Scientific research in philology plays a key role in the preservation, development and adaptation of languages and literature to modern challenges. Through the systematic analysis of language processes, the study of texts and their interpretations, scientists contribute to the enrichment of cultural heritage and intercultural communication.

Innovations in philological sciences allow researchers to expand their capabilities by integrating the latest technologies into text analysis and language research. The use of artificial intelligence, corpus linguistics and digital humanities allows for deeper and larger-scale research. For example, automated text analysis helps to identify hidden patterns in literature, and machine translation significantly improves interlingual communication.

Modern philology also focuses on the interaction of the language environment with other areas of science, such as psychology, cognitive science and sociology. This contributes to the creation of new teaching methods, improving communicative strategies and developing intercultural interaction.

Linguistic methodology (linguistic methodology) – a set of standard methods and means (methods and techniques) of research formed in the process of development of linguistic science (as well as as a result of the activities of various scientific schools and directions) that ensure the achievement of the set goal. It is aimed at establishing the nature of language in relation to the consciousness of its speakers, society, culture, communication, processes of cognition of the world, as well as at the formation of tools, attitudes and methods of description and analysis of language and its products [1, p. 4].

Descriptive method – involves the systematization of language units, their classification and analysis without taking into account historical changes. Widely used in synchronic linguistics to study the current state of the language.

Comparative-historical method – aimed at identifying common features and differences between related languages, which allows to recreate the processes of their development.

Structural method – is based on the analysis of the language system through the allocation of levels (phonetic, morphological, syntactic, lexical) and the identification of relationships between language units.

Cognitive method – studies the relationship between language, thinking and cognitive processes of a person. Particular attention is paid to conceptual models that are reflected in the linguistic picture of the world.

Sociolinguistic method – studies the functioning of language in society, taking into account the influence of social factors on language variability, multilingualism, language policy and communicative practices.

Corpus analysis – is based on the use of digital text corpora and automated tools for the study of language patterns, word frequency, syntactic structures and semantic models.

Discursive analysis – focuses on the study of speech in the context of a communicative situation, considering the interaction between language means and social reality [1].

Modern philology is a multidimensional scientific discipline that studies language, literature and their interaction with other areas of social development. The main directions of philological

research are determined by both traditional approaches and the introduction of innovative technologies that contribute to an in-depth analysis of linguistic and literary phenomena.

One of the priority areas is cognitive linguistics, which studies the relationship between language and thinking, analyzing conceptual models of perception of the world. In this context, psycholinguistic and neurolinguistic studies aimed at studying the mechanisms of human linguistic activity are of great importance [2, p. 365].

The second important area is corpus linguistics, which is based on the use of large volumes of text data to analyze grammatical, lexical and stylistic features of language. Thanks to digital technologies, researchers are able to process and interpret linguistic data using automated methods, which significantly expands the capabilities of linguistic studies.

Modern philology pays considerable attention to sociolinguistics, which studies language processes in a social context, including issues of language policy, multilingualism and the dynamics of language change. The study of the functioning of language in society allows us to determine the main trends in its development and disappearance [2, p. 316].

A separate direction is discursive analysis, which involves the study of speech in the context of a communicative situation. It includes the analysis of political, media and academic discourse, which allows us to trace the influence of language tools on the formation of public opinion.

In the field of literary studies, intertextual analysis is actively developing, which studies the connections between texts, as well as the influence of cultural, historical and social factors on the literary process. In addition, digital literary studies, based on the use of artificial intelligence and digital archives for text analysis, is gaining importance.

In recent years, the global trend of scientific and technological progress is the development and widespread implementation of information technologies, which, in turn, has influenced significant changes in all spheres of human activity. It is worth noting that progress towards an information society is the path to a new future for human civilization, including the field of education.

The innovative nature and high quality of education can be ensured by introducing new educational technologies, interactive forms of learning and methods that allow simulating real situations, the use of multimedia technologies and project methods, etc. A. Yankovets notes that new modern technologies affect not only the nature of the transformation of world civilization, but also cause a massive need for independent learning and continuous professional development [3, p. 3].

Modern digital technologies significantly expand the capabilities of linguistic and literary studies, providing automated analysis of large volumes of text data. The use of corpus linguistics allows us to identify patterns in speech, study semantic and syntactic structures using computer algorithms. In literary studies, digital archives and artificial intelligence technologies contribute to the study of intertextual connections, stylistic features of texts and authorial handwriting. In addition, the use of machine translation, chatbots and language models increases the effectiveness of intercultural communication and enriches the methodological tools of the humanities.

Computational linguistics is defined as a scientific and engineering discipline whose task is to understand written and spoken language from the point of view of its (language) computation, as well as the development of artifacts that are able to effectively process and produce language, in the context of both big data and individual dialogue. Since language is a mirror of thinking, understanding how language is computed also provides an understanding of how human thought and intelligence are arranged. Also, since language is a natural and universal means of communication between people, linguistically competent computers will facilitate better interaction between humans and technology and various software, and will provide people with reliable access to the limitless textual and other resources of the Internet [4, p. 7].

Artificial intelligence (AI) plays an important role in modern linguistics, contributing to the automation of the analysis of language structures, natural language processing and modeling of speech behavior. Thanks to machine learning and neural networks, it has become possible to create highly accurate machine translation, speech recognition and text generation. In addition, AI

contributes to the development of corpus linguistics, allowing for the effective analysis of large volumes of text data and the identification of patterns in speech. The use of deep learning algorithms opens up new prospects in the study of cognitive aspects of speech, in particular in the field of semantics and pragmatics.

Nowadays, artificial intelligence is interpreted as follows: as the ability of a system to autonomously select the most qualitative solution to a problem from a set of predefined options; as the ability of an automated system or computer program to perform human functions, making the optimal decision based on the analysis of external factors and taking into account the life experience of humanity; as the ability to solve complex tasks; as the ability to learn, generalize and make analogies; as the ability to interact with the outside world through communication, perception and awareness of the perceived, as science and technology, capable of reproducing the thinking processes of the human brain and directing them to the creation and processing of various computer programs, as well as intelligent machines capable of completely replacing and simplifying human work [5, p. 7].

Among researchers of artificial intelligence, it is customary to distinguish two types of it - weak and strong. The first involves the ability to perform only a narrow list of tasks. Examples of such systems are mobile applications for voice control Google Assistant, Alice and Siri, which allow you to give voice commands to the operating system and receive an understandable response, that is, these applications perform a certain list of functions. In contrast, strong artificial intelligence is capable of performing any human task, but such an artificial intelligence system has not yet been created, but developments in this direction are being carried out [5, p. 7].

Modern philological sciences are developing in close connection with innovative approaches and technological progress, which leads to the emergence of new areas of research and improvement of methodological tools. In the field of linguistics, the introduction of digital technologies, in particular methods of corpus analysis, artificial intelligence and automated natural language processing, is of particular importance, which contributes to a more in-depth study of lexical, syntactic and semantic phenomena.

Literary studies, in turn, use the latest approaches to text analysis, in particular quantitative and computer-linguistic methods, which makes it possible to identify patterns of the author's style and intertextual connections. Innovative technologies also contribute to the expansion of interdisciplinary research in which philology interacts with cognitive, social and information sciences.

Thus, the combination of scientific research and innovative technologies provides a qualitatively new level of development of philological sciences, contributes to the improvement of methodological approaches and expands the possibilities for the analysis of linguistic and literary processes. Prospects for further research lie in an in-depth study of the impact of digital technologies on linguistics and literary studies, as well as in the expansion of interdisciplinary approaches to the analysis of philological phenomena.

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