COGNITIVE EVALUATION AND SPEECH INFLUENCE FACTORS IN THE FORMATION OF SCIENTIFIC TEXTS

Khudoyberdiyeva Nargiza
SAMSIFL Independent researcher
Teacher of SAMIES academic lyceum

Annotation. This article examines the role of cognitive evaluation and speech-related factors in the formation of scientific texts. The study explores the mechanisms of scientific thinking, information processing, conceptualization, and their expression through linguistic means. Particular attention is paid to the cognitive and linguistic factors that ensure the logical structure, accuracy, and communicative effectiveness of scientific discourse. The findings demonstrate the interrelationship between cognition and speech in the process of scientific text production.

Key words: cognitive evaluation, scientific text, speech factors, scientific discourse, conceptualization, cognition, communication, linguistics, academic writing, cognitive processes.

Аннотация: В данной статье рассматривается роль когнитивной оценки и речевых факторов в формировании научных текстов. Исследуются механизмы научного мышления, обработки информации, концептуализации и их языкового выражения. Особое внимание уделяется когнитивным и лингвистическим факторам, обеспечивающим логичность, точность и коммуникативную эффективность научного дискурса. Результаты исследования демонстрируют взаимосвязь мышления и речи в процессе создания научного текста.

Ключевые слова: когнитивная оценка, научный текст, речевые факторы, научный дискурс, концептуализация, мышление, коммуникация, лингвистика, академическое письмо, когнитивные процессы.

Annotatsiya: Mazkur maqolada ilmiy matnlarning shakllanishida kognitiv jarayonlar va nutqiy omillarning o‘rni tahlil qilinadi. Tadqiqot davomida ilmiy fikrning yuzaga kelishi, axborotni qayta ishlash, konseptuallashtirish hamda uni til vositalari orqali ifodalash mexanizmlari ko‘rib chiqiladi. Shuningdek, ilmiy matnning mantiqiyligi, aniqligi va kommunikativ samaradorligini ta’minlovchi kognitiv hamda lingvistik omillar yoritiladi. Natijalar ilmiy matn yaratish jarayonida tafakkur va nutqning o‘zaro bog‘liqligini ko‘rsatadi.

Kalit so‘zlar: kognitiv baholash, ilmiy matn, nutq omillari, ilmiy diskurs, konseptuallashtirish, tafakkur, kommunikatsiya, lingvistika, ilmiy yozuv, kognitiv jarayonlar.

INTRODUCTION

In the contemporary scientific paradigm, the study of cognitive processes and their interaction with language has become one of the central areas of interdisciplinary research. Scientific texts are not merely collections of specialized terminology and factual information;

they are complex communicative structures that reflect the cognitive activities of researchers and the linguistic mechanisms through which scientific knowledge is conceptualized, organized, and transmitted.

The formation of scientific texts is influenced by a variety of cognitive and speech-related factors. Cognitive evaluation plays a crucial role in selecting, interpreting, and structuring information according to the goals of scientific communication. Researchers rely on mental processes such as perception, categorization, conceptualization, reasoning, and critical assessment when generating scientific discourse. At the same time, speech factors determine how scientific ideas are verbalized and presented to a target audience through appropriate linguistic forms, discourse strategies, and rhetorical devices.

Recent developments in cognitive linguistics, psycholinguistics, and discourse analysis have highlighted the close relationship between thought and language in academic communication. The effectiveness of a scientific text largely depends on the author's ability to transform complex cognitive structures into *coherent, logical*, and *accessible* linguistic representations. Consequently, understanding the cognitive and speech mechanisms underlying scientific text production is essential for improving academic writing and scientific communication.

The purpose of this study is to examine the role of cognitive evaluation and speech influence factors in the formation of scientific texts. The research aims to identify the cognitive processes involved in scientific text creation and to analyze the linguistic means through which scientific knowledge is communicated effectively. The findings contribute to a deeper understanding of the interaction between cognition and language in scientific discourse and provide insights into the development of effective academic writing practices.

Cognitive evaluation is a fundamental process that enables individuals to perceive, analyze, interpret, and organize information. In scientific communication, cognitive evaluation serves as the basis for knowledge construction and textual representation. Scientists continuously engage in cognitive activities such as observation, comparison, classification, inference, and critical analysis when producing scientific texts.

The formation of a scientific text begins with the conceptualization of a research problem. During this stage, authors activate their background knowledge and cognitive schemas to identify relevant information and establish logical relationships among concepts. Cognitive evaluation helps researchers determine the significance, reliability, and applicability of information before incorporating it into scientific discourse.

Furthermore, cognitive processes influence the structure of scientific texts. The organization of ideas into introductions, literature reviews, methodologies, results, and conclusions reflects the logical progression of thought. Therefore, scientific writing can be viewed as a linguistic manifestation of cognitive activity, where knowledge is transformed into a coherent textual form.

Speech factors play a significant role in shaping the effectiveness and clarity of scientific texts. These factors include lexical choice, grammatical structures, coherence, cohesion,

discourse strategies, and stylistic conventions. Through language, scientific knowledge becomes accessible to readers and members of the academic community.

One of the primary characteristics of scientific discourse is precision. Authors employ specialized terminology to express concepts accurately and avoid ambiguity. The use of objective language, passive constructions, and formal vocabulary contributes to the credibility and neutrality of scientific texts. At the same time, cohesive devices such as conjunctions, reference words, and transitional expressions ensure logical connections between ideas.

Speech factors also influence the communicative impact of scientific texts. Effective scientific communication requires the adaptation of linguistic forms to the intended audience. Researchers must present complex information in a manner that is understandable while maintaining scientific accuracy. Consequently, linguistic competence is an essential component of successful academic writing.

The relationship between cognition and speech is particularly evident in scientific discourse. Cognitive processes generate ideas, hypotheses, and interpretations, while speech mechanisms provide the means for expressing them. Scientific texts emerge through the interaction of mental and linguistic systems.

Conceptualization and verbalization are two interconnected stages of scientific text production. During conceptualization, knowledge is structured cognitively. During verbalization, these cognitive structures are transformed into linguistic expressions. The quality of a scientific text depends on the effectiveness of this transformation process.

Cognitive linguistics suggests that language reflects conceptual structures stored in the human mind. Therefore, scientific texts not only communicate information but also reveal the author's cognitive perspective. Different linguistic choices may represent different ways of conceptualizing the same phenomenon, highlighting the dynamic relationship between thought and language.

CONCLUSION

The study has demonstrated that cognitive evaluation and speech influence factors are essential components in the formation of scientific texts. Cognitive processes such as perception, conceptualization, categorization, reasoning, and critical analysis provide the intellectual foundation for the creation and organization of scientific knowledge. These processes enable researchers to evaluate information, establish logical relationships between concepts, and construct coherent scientific arguments.

At the same time, speech factors serve as the primary means through which cognitive content is transformed into communicative forms. Lexical precision, grammatical accuracy, coherence, cohesion, and adherence to academic discourse conventions significantly influence the quality and effectiveness of scientific texts. The interaction between cognition and speech ensures that scientific ideas are communicated clearly, logically, and objectively.

The findings confirm that successful scientific writing depends on the integration of cognitive and linguistic competencies. Authors must not only possess deep subject knowledge

but also demonstrate the ability to present that knowledge through appropriate linguistic and rhetorical strategies. Therefore, the development of both cognitive skills and academic writing abilities is essential for effective scientific communication.

Future research may focus on comparative analyses of cognitive and speech mechanisms in different academic disciplines, as well as the impact of digital technologies and artificial intelligence on scientific text production.

REFERENCES

1. Арутюнова Н. Д. Язык и мир человека. – М.: Языки русской культуры, 1999. – 896 с.
2. Кубрякова Е. С. Язык и знание: На пути получения знаний о языке. – М.: Языки славянской культуры, 2004. – 560 с.
3. Lakoff G., Johnson M. Metaphors We Live By. – Chicago: University of Chicago Press, 2003. – 276 p.
4. Langacker R. W. Cognitive Grammar: A Basic Introduction. – Oxford: Oxford University Press, 2008. – 562 p.
5. Halliday M. A. K., Matthiessen C. M. I. M. An Introduction to Functional Grammar. – 4th ed. – London: Routledge, 2014. – 808 p.