

## SCIENTIFIC RESEARCH IN THE FIELD OF SPEECH THERAPY

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### Abstract

The article examines key areas of scientific research in speech therapy, including diagnostics, correction of speech disorders, use of technologies and interdisciplinary approaches. Particular attention is paid to modern research methods and their practical application.

**Keywords:** Speech therapy, speech disorders, diagnostics, correction, technologies, neuropsychology, inclusion.

### Introduction

In modern conditions, the importance of scientific research in the field of speech therapy is constantly increasing. This is due to the increase in the number of children and adults with various speech disorders, as well as the need to develop effective methods for their diagnosis and correction.

### Main research areas

#### 1. Classification and study of speech disorders:

Modern research focuses on refining the classifications of speech disorders such as dyslexia , dysgraphia , alalia, aphasia and others. A deeper understanding of their nature allows us to develop more effective diagnostic methods.

#### 2. Development of diagnostic methods:

New approaches include the use of instrumental methods (eg, neuroimaging and electroencephalography) to identify features of brain function in people with speech disorders.

#### 3. Corrective work:

Using game techniques to work with children.

Application of neuropsychological methods for speech restoration in adults after stroke or brain injury.

Integration of speech therapy into inclusive education.

#### 4. Technologies in speech therapy:

Implementation of computer programs and mobile applications for speech correction.



Using artificial intelligence technologies to personalize work.

### **5. Research in the field of bilingualism and multilingualism :**

The characteristics of speech disorders in children growing up in a multilingual environment are becoming an increasingly relevant topic in connection with globalization.

### **6. The relationship between speech disorders and neuropsychological and genetic factors:**

Research into the relationship between speech disorders and genetic abnormalities, as well as autism spectrum disorders, is growing.<sup>1</sup>

Prospects for the development of speech therapy research

Scientific advances in speech therapy facilitate the introduction of innovative approaches:

Using biomarkers for early diagnosis of speech disorders.

Development of individual correction programs taking into account neuropsychological data.

Implementation of virtual and augmented reality in speech therapy practice.

### **1. Increase in the number of speech disorders**

Current statistics indicate an increase in the prevalence of speech disorders, especially among preschool children. The most common problems include delayed speech development, dyslexia, stuttering and other pathologies that can significantly complicate social and educational adaptation.

### **2. Influence of social factors**

Changes in family structure, digitalization of childhood and reduction of live communication at an early age have a negative impact on children's speech development. This requires new approaches to prevention and correction of disorders.

### **3. The need for inclusion**

Speech therapy plays an important role in the implementation of the principles of inclusive education. For the successful integration of children with speech disorders into the educational environment, it is necessary to create effective correctional and developmental programs.

### **4. Development of science and technology**

Modern advances in neuroscience, psycholinguistics and information technology open up new horizons for speech therapy. For example, the introduction of artificial intelligence, virtual reality and biometric technologies allows us to improve diagnostic and correction methods.<sup>2</sup>

### **Practical significance of research**

#### **1. Development of new correction methods**

Research allows us to create individualized and more effective approaches to speech correction that take into account the characteristics of each patient.

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<sup>1</sup> Белоусова, И. В. Логопедия: Теория и практика. – М.: Академия, 2020.

<sup>2</sup> Ткаченко, И. В. Биомаркеры в диагностике и коррекции речевых нарушений. М.: Педагогическое общество России. 2021



## **2. Prevention of speech disorders**

Scientific developments facilitate early identification of risk factors and the implementation of preventive programs aimed at preventing speech disorders.

## **3. Training of specialists**

Research data is used to train speech therapists and improve their qualifications, which ensures high quality of care.<sup>3</sup>

## **Research Prospects**

Integration of interdisciplinary approaches (speech therapy, neuroscience, pedagogy).

Studying the impact of digital technologies and the environment on speech development

Development of technologies for early diagnosis and prevention of speech disorders.

Scientific research in speech therapy not only helps improve the quality of life of people with speech disorders, but also plays a key role in the development of society, ensuring equal opportunities for all its members.

## **Conclusion**

Scientific research in speech therapy plays a key role in the development of theoretical foundations and practical methods of correctional work. They allow for a deeper study of the mechanisms of speech disorders, identifying effective ways of their diagnosis and correction, and developing innovative technologies for training and rehabilitation.

Modern speech therapy actively uses an interdisciplinary approach, integrating the achievements of medicine, psychology, linguistics and pedagogy. This contributes to a more complete understanding of the characteristics of speech development and deviations, and also allows us to adapt methods to the individual needs of each child or adult with speech disorders. Thus, scientific research in speech therapy not only enriches the theoretical basis of this field, but also contributes to improving the quality of speech therapy assistance, making it more effective, accurate and accessible.

Scientific research in speech therapy helps solve current problems related to speech disorders. Integration of knowledge from related sciences, active use of technologies and improvement of diagnostic and correction methods open up new opportunities for improving the quality of speech therapy care.

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<sup>3</sup> Захарова, Е. П. Научные подходы к профилактике и коррекции речевых нарушений у детей и взрослых. СПб.: Логос. 2020



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