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RESEARCH ARTICLE

Psychological and Pedagogical Features of Teaching Russian To Students of Non-Philological Specialties

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Abstract

The article analyzes psychological and pedagogical features of teaching Russian to students of non-philological specialties. The experimental study was conducted at the Faculty of Applied Mathematics and Intelligent Technologies of the National University of Uzbekistan named after Mirzo Ulugbek and involved 28 first-year students. The material included professionally oriented Russian texts, terminology tasks, algorithm explanation, short annotation writing, mini-presentations and classroom dialogue. The results show that professional content, speech scaffolding and gradual terminology work reduce communication anxiety and increase students' speech activity. The average score for professional communicative skills increased from 54.6 to 74.4 out of 100.

KEYWORDS

Russian language; non-philological specialties; professionally oriented teaching; communicative skills; experiment; motivation.

INTRODUCTION

Teaching Russian to students of non-philological specialties requires a balance between language accuracy, professional relevance and psychological comfort. Students of applied mathematics and intelligent technologies often understand professional content, but they may experience difficulties in oral explanation, written formulation and classroom interaction in Russian. Methods. The study was conducted at the Faculty of Applied Mathematics and Intelligent Technologies of the National University of Uzbekistan named after Mirzo Ulugbek. The participants were 28 first-year students. The experimental model included initial diagnostics, a professionally oriented training module and final assessment. Result. The average total score increased from 54.6 to 74.4 out of 100. The number of students at a high and sufficient level increased from 12 to 21, while the low level decreased from 6 to 1. Conclusion. Russian language teaching for non-philological students becomes more effective when it is connected with professional tasks, visual supports, terminology work, peer interaction and psychologically safe feedback.

Teaching Russian to students of non-philological specialties has a distinct practical orientation. For future specialists in applied mathematics, information systems, artificial intelligence, or software engineering, the Russian language serves not only as an academic subject but also as a means of professional communication. Students need to comprehend academic and scientific texts, explain the process of solving problems, describe algorithms, ask clarifying questions, participate in project discussions, and prepare brief presentations.

In the multilingual educational environment of Uzbekistan, the

Russian language continues to play an important role as a language of academic and intercultural communication. However, students of technical specialties often experience difficulties when transitioning from everyday communication to the academic and scientific register. They may struggle with the accurate use of terminology, formulation of definitions, logical organization of statements, drawing conclusions, and answering topic-related questions. These difficulties are not only linguistic but also psychological in nature: students may understand the content but avoid speaking due to fear of making mistakes.

The purpose of this study is to identify the psychological and pedagogical characteristics of teaching Russian to students of non-philological specialties and to evaluate the effectiveness of a professionally oriented instructional model. The experimental study was conducted among 28 first-year students of the Faculty of Applied Mathematics and Intelligent Technologies at the National University of Uzbekistan named after Mirzo Ulugbek.

The psychological foundation of language learning is closely related to understanding speech as a form of activity. L.S. Vygotsky emphasized the relationship between thought and language, demonstrating that meaning develops through speech use [1]. A.A. Leontiev considered communication as an activity involving motivation, goal-setting, orientation, planning, and control [2]. Therefore, educational tasks should have a clear communicative purpose. When students explain the principles of an algorithm, justify the choice of a method, or ask clarifying questions, language activity becomes meaningful and psychologically motivated [4; 6]. I.A. Zimnyaya also highlighted the relationship between learning activity, motivation, and the learner's personal position [3].

It should be noted that communicative and contextual approaches occupy a significant place in language teaching methodology. E.I. Passov associated communicative orientation with the personal significance of an utterance [4], while A.A. Verbitsky viewed learning activity as a simulation of future professional activity [7]. Consequently, Russian language classes for non-philological students should include professional texts, terminology, dialogue, mini-presentations, and practical communicative tasks [8; 9].

METHODS

The research material consisted of professionally oriented Russian language tasks designed for students of the Faculty of Applied Mathematics and Intelligent Technologies. Twenty-eight first-year undergraduate students participated in the experiment.

The instructional materials included short professional texts ranging from 120 to 180 words on topics such as algorithms, data, artificial intelligence, information security, models, interfaces, software testing, projects, and optimization. These texts were selected because they reflected the students' future professional field and provided opportunities for developing academic and professional communication skills.

The experimental study was conducted in three stages: diagnostic, formative, and control.

At the diagnostic stage, students were asked to complete a set of tasks aimed at assessing their initial level of professional communicative competence in Russian. The tasks included:

comprehension of a professional text;

explanation of a technical term;

oral commentary on a professional situation;

writing a brief annotation;

participation in an educational dialogue.

The purpose of this stage was not to assign final grades but to identify linguistic and psychological difficulties that hinder effective professional communication in Russian.

During the formative stage, a system of tasks with gradual communicative support was implemented. Initially, students received a minimum set of professional terms and language patterns such as:

"The algorithm is designed for …"

"The data are used for …"

"The advantage of this method is …"

"The results indicate that …"

After practicing these structures, students worked in pairs and small groups to solve communicative tasks and subsequently presented their results to the class.

The instructional model was based on the principles of communicative language teaching, contextual learning, and professional orientation. Particular attention was paid to reducing communicative anxiety and increasing students' confidence in using Russian for academic and professional purposes.

The research methods included:

pedagogical observation;

initial and final diagnostic assessment;

analysis of written assignments;

expert evaluation of oral responses;

questionnaire surveys.

Student performance was assessed using a 100-point scale based on five criteria:

Comprehension of a professional text;

Accuracy of terminology usage;

Coherence of oral explanation;

Quality of a short written annotation;

Participation in an educational dialogue.

These indicators made it possible to evaluate both linguistic competence and psychological readiness for professional communication in Russian.

RESULTS AND DISCUSSIONS

The initial assessment revealed that the main difficulties experienced by students were associated with the transition from general language proficiency to professionally oriented communication in Russian. Although most participants were able to understand the overall meaning of professional texts, many encountered difficulties when retelling the content, identifying key ideas, or explaining technical terms in their own words.

Oral responses frequently contained pauses, incomplete sentences, code-switching between Russian, Uzbek, and English terminology, and insufficient use of cohesive devices.

These findings indicate that linguistic knowledge alone is not sufficient for effective professional communication; psychological factors also play an important role.

Three major psychological characteristics were identified during the diagnostic stage.

First, many students demonstrated a relatively high level of communication anxiety. Some participants avoided public speaking despite being able to complete written assignments successfully.

Second, students showed a strong dependence on prepared texts. Reading and understanding information appeared significantly easier than providing spontaneous explanations or participating in discussions.

Third, students demonstrated a high level of professional motivation. Most participants recognized the importance of Russian for reading scientific materials, preparing academic reports, and communicating in educational and professional environments.

The results obtained after the formative stage demonstrated positive changes across all assessed indicators. The greatest improvement was observed in the use of professional terminology and oral explanation skills.

The growth in these indicators can be explained by the fact that students were already familiar with the underlying professional concepts such as algorithms, data, models, optimization, and software testing. Consequently, the primary challenge was not conceptual understanding but rather the ability to express these concepts accurately in Russian. The professional context therefore served as both a motivational and cognitive support mechanism.

Table 2

Dynamics of Initial and Final Assessment Results

Indicator	Maximum Score	Before Experiment	After Experiment	Improvement
Comprehension of professional texts	20	12.0	15.7	+3.7
Accuracy of terminology usage	20	11.2	15.4	+4.2
Coherence of oral explanations	20	10.8	14.9	+4.1
Quality of short	20	11.1	14.6	+3.5

Indicator	Maximum Score	Before Experiment	After Experiment	Improvement
written annotations				
Participation in educational dialogue	20	9.5	13.8	+4.3
Overall average score	**100**	**54.6**	**74.4**	**+19.8**

As shown in Table 2, the overall average score increased from 54.6 to 74.4 points out of 100. The most significant gains were observed in participation in educational dialogue and accuracy of terminology usage.

Following the formative intervention, students became more willing to ask clarifying questions, justify their solutions, use professional vocabulary appropriately, and respond to their peers during discussions. These findings support the effectiveness of professionally oriented communicative tasks in developing academic communication skills.

Although improvement was observed in all areas, the increase in performance related to written annotations was slightly lower than that recorded for oral communication. This can be explained by the greater complexity of academic writing, which requires precise formulations and mastery of conventional academic expressions such as:

- "The article discusses..."
- "The purpose of the project is..."
- "The obtained results indicate that..."

Nevertheless, students' written work became more structured and demonstrated clearer organization, including the presentation of objectives, descriptions, and conclusions.

Table 3

Distribution of Students by Level of Professional Communicative Competence

Level	Before Experiment	Percentage	After Experiment	Percentage
High	3 students	10.7%	7 students	25.0%
Sufficient	9 students	32.1%	14 students	50.0%
Intermediate	10 students	35.7%	6 students	21.4%
Low	6 students	21.4%	1 student	3.6%
Total	28 students	100%	28 students	100%

The distribution presented in Table 3 indicates a substantial increase in the number of students demonstrating high and sufficient levels of professional communicative competence. Before the experiment, only 12 students belonged to these categories, whereas after the intervention their number increased to 21.

A key factor contributing to these improvements was the structured learning environment. Students were provided with speech patterns, professional terminology lists, model responses, and opportunities to rehearse their answers in pairs before presenting them publicly. This approach significantly reduced fear of making mistakes and increased students' confidence during oral communication.

Questionnaire data further confirmed positive changes in motivational and psychological indicators.

CONCLUSION

The findings of the present study demonstrate that teaching Russian to students of non-philological specialties requires a professionally oriented and psychologically supportive instructional approach. For students of Applied Mathematics and Intelligent Technologies, Russian functions not merely as an academic discipline but also as an essential tool for professional communication, academic interaction, and access

to scientific information.

The experimental results confirmed the effectiveness of the proposed instructional model. The implementation of professional texts, terminology-based activities, educational dialogues, mini-presentations, and structured communicative tasks contributed significantly to the development of students' professional communicative competence. The average performance score increased from 54.6 to 74.4 points, indicating substantial progress in comprehension of professional texts, accurate use of terminology, coherence of oral explanations, written communication, and participation in academic dialogue.

The study also revealed important psychological outcomes. Students demonstrated lower levels of communication anxiety, increased willingness to participate in oral discussions, and greater confidence in expressing professional ideas in Russian. The use of speech patterns, communicative scaffolding, pair work, and collaborative activities created a supportive learning environment that facilitated active engagement and reduced fear of making mistakes.

Furthermore, the results suggest that integrating language learning with students' future professional activities enhances both motivation and learning outcomes. When communicative tasks are directly connected to professional contexts, students perceive language learning as meaningful and relevant to their academic and career goals.

Despite the positive results, several limitations should be acknowledged. The study involved a relatively small sample of participants and was conducted over a limited period of time. Future research may include larger groups of students from different technical specialties and investigate the long-term impact of professionally oriented language instruction on communicative competence development.

In conclusion, the research confirms that a professionally oriented communicative approach, supported by appropriate psychological and pedagogical conditions, is an effective means of developing Russian-language communicative competence among students of non-philological specialties. The proposed instructional model can be recommended for implementation in higher education institutions seeking to improve the quality of language training for future specialists in technical and technological fields.

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