

Developing Speech Competence On The Basis Of A Collaborative Approach In The Buildings And Structures Educational Program

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Abstract: This article investigates the methodology for developing the speech competence of civil engineering students through a collaborative approach. The study was conducted based on experimental research involving 564 respondents from Namangan state technical university, Fergana state technical university and Jizzakh polytechnic institute. The findings revealed that instructional activities organized through collaborative learning effectively improve students' oral fluency, interactive communication, discourse management and professional communicative competence. The methodological potential of Jigsaw, Think-Pair-Share and problem-based group tasks in developing speech competence was substantiated. Based on the findings, scientific and practical recommendations were developed for integrating collaborative approaches into engineering education.

Keywords: Speech competence, collaborative approach, civil engineering, communicative competence, ESP, interactive methods, fluency, discourse management.

Introduction: Under the conditions of modern development, the advancement of the education system is closely associated with the socio-economic and cultural changes occurring in society. Therefore, the field of education is required to undergo continuous improvement in accordance with existing demands. Through the educational process, a qualified and competitive generation is formed that is capable of contributing to social development, effectively addressing future challenges, and successfully carrying out professional activities.

Today, the construction sector is recognized as one of the leading branches of the national economy with strategic significance. The sustainable development of this sector is closely linked to the training of qualified and competitive engineering personnel. In this regard, the President of the Republic of Uzbekistan, Shavkat Mirziyoyev, emphasized: "In today's highly competitive environment, one of the most important tasks for the development of our economy is the training of engineering personnel who possess modern knowledge and skills as well as practical experience".

This statement indicates that the effectiveness of the processes involved in designing and constructing infrastructure facilities, industrial enterprises, and residential complexes directly depends on the professional training of highly qualified engineers. From this perspective, students pursuing studies in the field of civil engineering are regarded as an important factor in the country's economic development, urbanization processes, and the comprehensive development of territories.

Future specialists being trained in the field of civil engineering must not only acquire deep theoretical knowledge but also develop the competence to apply it effectively in practical activities. In particular, it is of great importance to form skills in developing design documentation, performing structural calculations, utilizing innovative construction materials and technologies, and creating safe and efficient structures based on current regulatory documents. In addition, global climate change, the need to ensure environmental sustainability, and the necessity of rational use of natural resources require the

improvement of the content of civil engineering education and the implementation of modern pedagogical approaches in practice.

In the context of globalization, proficiency in English is emerging as one of the key professional competencies for specialists working in the field of civil engineering. The main reason for this is that a significant portion of contemporary scientific research findings, technical documentation, international standards, and innovative construction technologies are presented in English. Therefore, knowledge of English plays an important role in effectively utilizing foreign scientific sources, studying advanced practices, and continuously updating professional knowledge. English communicative skills also hold a significant place in establishing cooperation with international construction companies, participating in transnational projects, and facilitating the exchange of professional experience among specialists. This situation indicates the necessity of developing not only the technical knowledge of future engineers but also their professional communication competencies.

From this perspective, the integration of English language instruction with the professional needs of students in the field of civil engineering is considered one of the important pedagogical tasks. In particular, special attention should be paid to the development of skills in working with field-specific terminology, technical texts, analyzing project documentation, and ensuring effective communication in professional communicative situations within the educational content. This, in turn, contributes to the development of students' speech competence, increases their adaptability to the international professional environment, and ensures the effectiveness of their future professional activities.

Literature Review On The Topic

The issue of developing speech competence in students of civil engineering through a collaborative approach is characterized as a multifaceted research area formed at the intersection of foreign language teaching methodology, English for Specific Purposes (ESP), communicative competence theory, and collaborative pedagogy. An analysis of the scientific research conducted on this issue and the existing literature shows that various theoretical and practical aspects of this problem have been the focus of researchers' attention.

The results of the analysis show that research in this area has mainly developed in three important directions. The first direction focuses on clarifying the theoretical and methodological foundations of communicative competence, while the second is

devoted to studying the pedagogical potential of collaborative teaching technologies and their impact on the effectiveness of education. The third direction is aimed at investigating the ESP approach and the practical aspects of professionally oriented foreign language instruction for technical specialties, including civil engineering students.

The theoretical foundations of speech competence were initially developed by the American linguist and sociolinguist Dell Hymes, who interpreted linguistic competence not merely as knowledge of grammatical rules, but as the ability to appropriately and effectively use language forms in specific social contexts. This approach served as an important methodological basis for the formation of communicative competence theory. Later, the theory was further refined by Michael Canale and Merrill Swain, who defined communicative competence as a system consisting of grammatical, sociolinguistic, discourse, and strategic components. The model proposed by these researchers encompasses not only an individual's knowledge of linguistic means but also their ability to meaningfully and purposefully use them in real communicative situations. Therefore, this concept is widely recognized today as one of the key theoretical foundations in foreign language teaching methodology, including research in the field of English for Specific Purposes (ESP).

Similarly, the Common European Framework of Reference for Languages (CEFR) developed by the Council of Europe, as well as its Companion Volume published in 2020, established modern methodological foundations for the assessment and development of language competences. These documents provide a detailed description of the criteria for developing and assessing skills in spoken interaction, mediation, collaborative communication, and professional communication. They are widely applied in ESP education, particularly in research aimed at developing speech competence among students of technical disciplines.

The theoretical and methodological foundations of collaborative teaching are primarily based on Lev Vygotsky's sociocultural theory and his concept of the Zone of Proximal Development (ZPD). According to this theory, the development of an individual's cognitive activity, thinking, and language skills occurs through social interaction and communication processes. Vygotsky emphasizes that interaction with peers and teachers is a crucial factor in learners' cognitive development. Therefore, the collaborative learning approach is grounded in actively engaging students in processes of joint knowledge acquisition, idea exchange, and cooperative problem-solving. Later, the

Social Interdependence Theory developed by David W. Johnson and Roger T. Johnson further expanded the scientific foundations of the effectiveness of collaborative learning. The researchers substantiated that the success of cooperative learning is directly associated with factors such as positive interdependence, individual accountability, promotive interaction, social skills, and reflective group evaluation.

The effectiveness of the collaborative approach in developing speech competence has also been confirmed by the results of numerous empirical studies. In particular, group discussions, collaborative tasks, problem-based learning situations, and project-based activities have been found to have a positive impact on the development of students' fluency, negotiation of meaning, and interactional competence. Specifically, the results of a study conducted in 2024 by A.A.Alzubi and co-authors demonstrate that collaborative interventions based on cooperative learning significantly improved the language acquisition levels and social interaction indicators of students learning English as a foreign language. Similarly, a 2026 analytical study describes collaborative learning as an important pedagogical factor in creating an authentic communicative environment and facilitating meaning-focused negotiation in communication processes. These findings confirm the high didactic potential of the collaborative approach in foreign language education, particularly in the formation of professionally oriented speech competence .

In the context of ESP, particularly in technical and engineering education, research further strengthens the practical significance of this issue. In engineering education, collaborative learning is viewed not only as a means of language acquisition but also as a tool for developing professional problem-solving, technical communication, and teamwork-based decision-making competencies. Survey-based studies on collaborative pedagogy in engineering education demonstrate that group-based instruction increases academic engagement and communicative participation among engineering students. This aspect is especially important for civil engineering students, as professional activity in this field is largely organized through collaborative communication .

However, the analyzed literature indicates that the number of specialized studies devoted specifically to the methodology of developing speech competence among civil engineering students on the basis of a collaborative approach is limited. Existing works mainly address the general ESP, EFL, or technical education context; however, construction terminology,

professional discourse, task-based collaborative speaking activities, and field-specific methodological models have not been sufficiently developed.

This very research gap determines the relevance of the present study and substantiates the necessity of developing a specialized methodology for enhancing the speech competence of civil engineering students based on a collaborative approach.

Research Methodology

In this study, a quasi-experimental research design was employed to determine the effectiveness of developing speech competence among civil engineering students based on a collaborative approach. Experimental and control groups were formed, and in the experimental group the learning process was organized using collaborative methods such as Jigsaw, Think-Pair-Share, and problem-based group discussions, while traditional teaching methods were maintained in the control group. During the learning process, emphasis was placed on developing students' oral communication skills, use of professional terminology, and interactive speech skills through professionally oriented communicative tasks.

In the study, data were collected through pre-tests and post-tests, analytical assessment rubrics, and observation methods. Speech competence was assessed based on CEFR descriptors as well as the fluency, accuracy, interaction, and discourse management components of the Canale and Swain model. The obtained results were analyzed both quantitatively and qualitatively, and the effectiveness of the collaborative approach in developing speech competence was determined.

Analysis And Results

The results of the study were formed and comparatively analyzed based on experimental work conducted among a total of 564 respondents studying in the field of civil engineering at Namangan state technical university (n=234), Fergana state technical university (n=196), and Jizzakh polytechnic institute (n=134). The selection of the sample from three independent higher education institutions strengthened the representativeness of the study and the generalizability of the results. The initial diagnostic assessment (pre-test) showed that the respondents' baseline levels of speech competence were relatively similar. This made it possible to attribute the changes observed as a result of the intervention specifically to the applied collaborative methodology. The final assessment (post-test) demonstrated that the learning process organized on the basis of a collaborative approach had a significant positive impact on the development of the main components of speech

competence.

Based on the analysis, improvements were observed in students' fluency indicators, including the length of responses, continuity of ideas, and the ability to maintain communication without speech interruptions. At the initial stage, respondents tended to produce short and fragmented answers; however, by the end of the intervention, the proportion of extended, logically connected, and communicatively purposeful responses increased. In particular, tasks organized through Think-Pair-Share and Jigsaw contributed to strengthening students' skills in forming initial ideas, engaging in meaningful exchange with a partner, and subsequently participating actively in group discussions. This indicates that fluency is not limited to speaking quickly, but is functionally associated with the ability to construct meaningful and continuous speech.

The results related to the interaction component also demonstrated significant changes. At the pre-intervention stage, respondents mainly relied on a teacher-directed question-answer model; however, after the implementation of collaborative activities, the frequency of peer questioning, clarification, response to others' opinions, and negotiation of meaning increased. In particular, during problem-based discussions grounded in professional contexts, respondents began to use elements such as "technical clarification," "proposal justification," and "problem-solving interaction" more actively. Observation protocols indicated that these changes were stable and recurrent in nature.

Significant improvements were also recorded in discourse management. Initially, students' responses demonstrated interruptions in textual coherence, weak connections between ideas, and difficulties in maintaining a consistent thematic flow. However, after the intervention, there was a noticeable improvement in logical sequencing, the use of cohesive devices, and the ability to organize professional discourse. In particular, during project presentations and "site communication" tasks, students became more active in expressing engineering-related concepts in a coherent manner aligned with communicative objectives. This indicates the methodological potential of collaborative tasks in developing discourse competence.

The results regarding professional vocabulary use also demonstrated a positive dynamic. Initially, respondents tended to use professional terminology in a limited and, in some cases, inaccurate manner; however, after the intervention, the frequency of using technical lexicon and field-specific communicative units increased. Instances of appropriate and

purposeful use of professional expressions such as "structural load," "construction materials," "site safety," and "design specifications" became more frequent. This indicates that the collaborative approach in the ESP context contributes not only to general language development but also to the enhancement of professional communication competence.

Qualitative analysis also confirmed the quantitative observations. In their reflective comments, respondents noted that group work reduced psychological barriers to speaking English, lowered the fear of making mistakes, and increased their confidence in engaging in communication. In particular, it was observed that even students who had previously been less active began to participate more actively in communication through peer interaction. This indicates that the collaborative approach also had a positive impact on motivational and affective factors.

The similarity of the observations across the three higher education institutions also confirmed the stability of the methodology. In other words, despite differences in the number of respondents, the composition of academic groups, and institutional contexts, the main trends observed in the development of speech competence were of a general nature. This demonstrates that the developed methodology has the potential for application not only in a local context but also in other technical higher education institutions.

In general, the results of the experimental work conducted with the participation of 564 respondents demonstrated that the methodology developed on the basis of a collaborative approach is highly effective in developing the speech competence of civil engineering students. The obtained data confirmed the integrated development of fluency, interaction, discourse management, and professional communicative competence components, thereby substantiating the practical validity of the research hypothesis.

Conclusion And Recommendations

The results of the study demonstrated that the methodology for developing speech competence among civil engineering students based on a collaborative approach is effective from both scientific and practical perspectives. The experimental work conducted with 564 respondents at Namangan State Technical University, Fergana State Technical University, and Jizzakh Polytechnic Institute confirmed that the learning process organized on the basis of a collaborative approach had a positive impact on students' fluency, interaction, discourse management, and professional communicative competence. The Jigsaw, Think-Pair-Share, problem-based group discussions, and professionally oriented

communicative tasks used in the study proved to be effective methodological tools for developing speech competence. Accordingly, it was found that integrating the collaborative approach into English language teaching for civil engineering students is appropriate and justified.

Based on the results of the study, the following recommendations were developed: first, it is advisable to systematically implement collaborative approach methods aimed at developing speech competence into civil engineering educational programs; second, the content of English for Specific Purposes (ESP) courses should be enriched with professionally oriented communicative situations, project discussions, and interactive tasks based on technical discourse; third, it is necessary to improve methodological training and professional development programs for foreign language teachers in higher education institutions with a focus on collaborative teaching methods; fourth, it is recommended to further test this methodology in other technical fields, including mechanical engineering, electrical engineering, and civil engineering students. These recommendations contribute to the practical implementation of the research findings and the enhancement of speech competence development in technical higher education.

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