



Proceedings of the International Scientific Conference

Scientific Research in the Age of Global Change



Amsterdam, Netherlands
November 4, 2025



International
Scientific Conference

Scientific Research in the Age of Global Change

Proceedings

November 4, 2025

Amsterdam, Netherlands

UDC 001.1

DOI: <https://doi.org/10.64076/iedc251104>

ISBN 978-9-403-83978-3

Scientific Research in the Age of Global Change: Proceedings of the International Scientific Conference (Amsterdam, Netherlands, 4 November 2025). Bookmundo, 2025.

The collection includes the proceedings of the International Scientific Conference “Scientific Research in the Age of Global Change”, which took place on 4 November 2025. This collection is intended for scientists, educators, students, government officials, business representatives, and the general public.

Working language of the conference: English.

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Interdisciplinary approaches to enhancing communication skills of future civil engineers in the context of globalization

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Abstract. *The article examines interdisciplinary approaches to developing the communication skills of future civil engineers in the context of globalization. It highlights the integration of English for Specific Purposes (ESP) with technical subjects to enhance foreign language professional competence. Practical examples show that combining language and engineering disciplines improves professional communication, critical thinking, and readiness for international collaboration.*

Keywords: *foreign language professional competence; interdisciplinary approach; civil engineering education; English for Specific Purposes (ESP); communication skills.*

In the era of globalization, engineering education faces new challenges related to the integration of professional knowledge and effective communication in multicultural environments. English has become not only a tool of international collaboration but also a language of construction standards, documentation, and research. For future civil engineers, the ability to communicate professionally in English is a key component of their global competitiveness and employability. Therefore, interdisciplinary approaches that combine linguistic, professional, and digital competencies play a decisive role in the development of foreign language professional competence.

Scholars such as Coyle, Hood, and Marsh [1] emphasize the potential of the CLIL (Content and Language Integrated Learning) approach, which integrates subject-specific content and language learning. Hyland [2; 3] and Graddol [4] highlight that language training in technical fields should focus on authentic professional communication and the acquisition of discipline-specific discourse. For civil engineering students, this means learning English not as an abstract academic discipline but as a medium for understanding construction technologies, materials, and project management.

In Ukrainian research, Melnyk [5], Pavlyuk [6], and Dudnyk [7] also stress the importance of integrating linguistic and professional preparation. They view foreign language professional competence as a combination of linguistic, communicative, sociocultural, and professional components, developed through authentic materials and context-based learning.

Interdisciplinary interaction in the teaching of *English for Specific Purposes (ESP)* for future civil engineers is most effective when linguistic objectives are

combined with engineering problem-solving and project work. Below are several examples of such practices:

1. Project-Based Learning (PBL) with Construction Case Studies. Students work in small groups to design and present a sustainable building project using English as the working language. Each team prepares project documentation – such as structural descriptions, safety reports, and technical specifications – modeled on authentic engineering templates. This allows students to apply construction terminology while improving teamwork and professional communication skills.

2. Integration with Engineering Software and Digital Tools. During English lessons, students analyze instructions, manuals, and user interfaces of engineering software like AutoCAD, Revit, or BIM tools in English. Tasks may include describing design workflows, explaining modeling parameters, or creating oral presentations on project outcomes. This strengthens both technical vocabulary and digital literacy.

3. CLIL-Based Modules on Construction Technologies. A series of mini-lectures or workshops is delivered in English in collaboration with a subject lecturer in structural mechanics or materials science. Students read short authentic texts (e.g., excerpts from construction standards or technical journals), discuss them, and complete communicative tasks such as “*Explain the function of reinforced concrete beams in load-bearing systems*” or “*Compare steel and composite structures in terms of durability and cost.*”

4. Simulated Professional Communication. Role-playing tasks imitate real-world engineering contexts: meetings with clients, safety briefings, or site inspections. For instance, students may role-play a discussion between a project manager and a client about delays due to weather conditions or safety compliance. Such activities develop fluency in problem-solving and negotiation – essential skills for international collaboration.

5. Cross-Curricular Projects with Environmental and Sustainability Focus. Students develop reports or presentations in English on topics such as “*Green Building Technologies,*” “*Smart Materials in Modern Construction,*” or “*Waste Reduction in Infrastructure Projects.*” These assignments integrate knowledge from ecology, materials science, and management with professional English vocabulary and discourse patterns.

The integration of language and content through interdisciplinary approaches creates an authentic learning environment that mirrors real professional contexts. It shifts language instruction from rote memorization to applied communication. The use of CLIL, digital technologies, and project-based learning promotes motivation, autonomy, and practical readiness for global professional communication. Moreover, interdisciplinary collaboration between language and engineering lecturers ensures that educational outcomes align with real industry requirements.

In the conducted studies, we have already analyzed the effectiveness of using specialized English-language engineering websites for the development of foreign language professional competence among future civil engineers. The research focused on working with authentic technical texts, building professional vocabulary, and completing practical tasks closely aligned with real engineering activities [8]. Additionally, the use of professional English-language forums was examined, allowing students to discuss engineering issues, collaborate in teams, and critically evaluate information, thereby integrating language learning with practical professional skills [9].

In future research, it is planned to explore the potential of integrating Large Language Models (LLMs) as tutors in foreign language learning and to assess the impact of interdisciplinary digital platforms on the development of academic writing and professional communication skills. Special attention will be paid to combining CLIL and ESP approaches in preparing civil engineering students for international professional interaction, opening new perspectives for enhancing their foreign language professional competence.

Conclusion. In the context of globalization, interdisciplinary approaches in teaching *English for Specific Purposes* to civil engineering students are essential for developing their communicative competence and professional identity. By combining linguistic and technical content, educators prepare future engineers not only to use English effectively in their careers but also to participate in international projects, research collaborations, and innovations. Such integration ultimately supports Ukraine's alignment with global educational and professional standards.

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Advantages of integrated learning in teaching a foreign language in a higher education institution

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Abstract. *The model of integrated learning emerges as one of the priority approaches in teaching a foreign language in higher education institutions. Integral competence is positioned as a common denominator that aligns the value-oriented and goal-directed principles of foreign language knowledge. General and professional skills are harmonized within a holistic system of foreign language competencies, where the language is viewed not merely as a tool but as a resource.*

Keywords: *foreign language competencies, educational integration, linguistic discourse, foreign language.*