

PREPARING FOR A TECHNICAL JOB INTERVIEW IN INTERNATIONAL ENGINEERING COMPANIES: LINGUISTIC ASPECT

Vilkhovchenko N. P.

Candidate of Sciences,

Associate Professor at the Department of Foreign Languages for Engineering

Lviv Polytechnic National University

ORCID ID: 0000-0002-0100-2628

This study addresses critical gaps between traditional ESP curricula and authentic communicative competencies required in professional recruitment processes. The research was conducted at Lviv Polytechnic National University during the 2024–2025 academic year and employed a mixed-methods design across three stages. The needs analysis phase surveyed undergraduate engineering students from four specializations and analyzed job advertisements from LinkedIn, DOU, and Djinni to identify industry expectations. The implementation phase integrated a specialized twenty-hour “English for Job Hunting” module into the experimental group’s curriculum, utilizing mock interviews, the STAR (Situation-Task-Action-Result) framework, and AI tools. The control group followed standard Professional English instruction. The evaluation phase assessed outcomes through final mock interviews, measuring lexical density, grammatical correctness, and fluency. Results demonstrated statistically significant improvements in the experimental group, including reduced speech anxiety and greater communicative fluency. The research establishes that successful technical interviews require three interrelated competencies: terminological precision, discourse structuring capabilities, and persuasiveness. Discipline-specific variations across engineering specializations suggest the need for tailored linguistic modules. The study provides evidence-based pedagogical strategies for ESP instructors, curriculum developers, and educational administrators. The developed methodology demonstrates high potential for implementation across technical universities, enhancing the international competitiveness of engineering graduates and their successful integration into global professional communities.

Keywords: ESP, technical interview, engineering students, professional communicative competence, STAR method, mock interviews, linguistic competencies.

Вільховченко Н. П. Підготовка до технічної співбесіди в міжнародних інжинірингових компаніях: лінгвістичний аспект

У статті розглянуто критичні розбіжності між традиційними навчальними програмами з англійської мови за професійним спрямуванням та автентичними комунікативними компетенціями, необхідними в процесах професійного рекрутингу. Дослідження проводили в Національному університеті «Львівська політехніка» протягом 2024–2025 навчального року та використовували методологію, яка охоплювала три етапи. На етапі аналізу потреб було опитано студентів-інженерів чотирьох спеціалізацій та проаналізовано оголошення про роботу на платформах LinkedIn, DOU та Djinni, щоб визначити очікування у певних галузях. На етапі впровадження до навчальної програми експериментальної групи було інтегровано спеціалізований двадцятигодинний модуль «Англійська для пошуку роботи», використовуючи пробні співбесіди, STAR-метод (Ситуація-Завдання-Дія-Результат) та інструменти штучного інтелекту. Контрольна група працювала за стандартною програмою професійної англійської мови. На етапі оцінювання аналізували результати за допомогою фінальних пробних співбесід, вимірювалася лексична щільність, граматична правильність та вільність володіння мовою. Результати продемонстрували статистично значущі покращення в експериментальній групі, включаючи зниження мовленнєвої тривожності та більшу комунікативну спрямованість. Дослідження встановило, що успішні технічні співбесіди вимагають трьох взаємопов'язаних компетенцій: термінологічної точності, здатності структурувати дискурс та переконливості. Специфічні для різних інженерних спеціалізацій варіації свідчать про необхідність адаптованих лінгвістичних модулів. Дослідження пропонує педагогічні стратегії для викладачів англійської мови за професійним спрямуванням (ESP), розробників навчальних програм та адміністраторів освіти. Розроблена методологія демонструє високий потенціал для впровадження в технічних університетах, підвищуючи міжнародну конкурентоспроможність випускників інженерних спеціальностей та їхню успішну інтеграцію у світові професійні спільноти.

Ключові слова: ESP, технічне інтерв'ю, студенти-інженери, професійна комунікативна компетенція, метод STAR, пробні інтерв'ю, лінгвістичні компетенції.

Introduction. The globalization of the technology sector and Ukraine's integration into the international professional space have led to a radical transformation of the requirements for future engineering specialties. International IT corporations, chemical concerns, and construction holdings are modern employers. They need specialists who cannot only demonstrate a high level of technical competence but also effectively articulate complex professional concepts in English. According to analytical reports from leading recruiting platforms, more than 70% of engineering vacancies at international companies require a mandatory technical interview in English. This makes professional foreign language communication a critical factor in employment.

The paradox of modern engineering education is the emergence of the so-called "communication gap". It consists of the discrepancy between the level of professional competencies (i.e., hard skills) of graduates and their ability to present these competencies in the format of professional dialogue in a foreign language. Ukrainian technical universities traditionally provide thorough training in mathematics, physics, programming, or chemical technologies. However, the linguistic component of educational programs is often limited to general English. And attention to the specifics of professional communication is not sufficient. The result is a phenomenon that researchers define as "language numbness", i.e., a psycholinguistic state when a student with deep technical knowledge and a satisfactory level of general English is unable to formulate a technical solution, explain an algorithm, or argue their choice during an interview due to the lack of specific discursive practice.

This problem is especially acute in the context of professional mobility. English functions as a universal tool for accessing the global labor market, and a technical interview serves as a "gateway" that either opens international career opportunities or remains an impassable barrier despite the candidate's high qualifications. The situation in information technology is especially illustrative: Ukrainian developers are recognized worldwide as highly qualified specialists. Unfortunately, a significant number of them are unable to fully realize their potential because they cannot communicate confidently in

English during interviews with representatives of Google, Meta, Amazon, and other transnational corporations.

The relevance of studying the linguistic aspects of preparing for a technical interview stems from the need for a systematic solution to this problem at the higher technical education level. **The purpose** of the article is to identify the key linguistic difficulties that future engineers face during English-language technical interviews and to develop scientifically based methodological recommendations for the targeted preparation of students for this critical stage of professional self-realization.

Analysis of recent research and publications. The issue of linguistic preparation of engineers for professional communication in English is at the intersection of several scientific areas: teaching English for specific purposes (ESP), psycholinguistics of professional communication, and pedagogy of higher technical education.

Fundamental research in ESP, particularly the work of Paltridge and Starfield [5], rethinks traditional approaches to teaching professional English in technical higher education institutions. The authors prove that effective training of engineers cannot be limited to mastering terminology and reading technical documentation. A modern ESP course should develop specific communication skills necessary for real professional situations, including presenting technical solutions, engineering products, and conducting professional dialogue. The economic feasibility of such training is confirmed by empirical data. Specialists with a high level of English receive a starting salary that is 23–37% higher than that of colleagues with limited language skills. Therefore, investments in the development of foreign language communicative competence are strategically justified.

Large-scale research into the "skills mismatch" phenomenon in the engineering field has revealed a critical gap between the academic preparation of graduates and the expectations of employers. A survey of over 1,200 engineering companies conducted by European and American research centers showed that 68% of recruiters cite insufficient development of presentation and communication skills as the main reason for rejecting qualified candidates for engineering

positions. These data argue for integrating specialized courses for technical interview preparation directly into the educational programs of technical universities, rather than treating them as an additional option [1; 2].

The psycholinguistic dimension of the problem is highlighted by Migalos et al. [4], who substantiate the concept of linguistic competence as a foundation for the development of critical thinking and effective work in multicultural engineering teams. Researchers pay special attention to the phenomenon of Verbal Impression Management, including the strategic use of language tools to form a positive professional image during an interview. This ability includes not only grammatical correctness but also pragmatic statements, cultural awareness, and rhetorical persuasiveness.

Research methods and techniques. To achieve the research goal, a comprehensive mixed-methods approach was used. It organically combines quantitative and qualitative methods to analyze the linguistic difficulties of engineering students during preparation for technical interviews in English. The study was conducted during one academic semester (September 2024 – January 2025) at Lviv Polytechnic National University, Department of Foreign Languages for Engineering, and comprised three consecutive stages. The first stage included Needs Analysis. At this stage, a survey was conducted among 120 first- and second-year undergraduate students of four specialties: computer science (n=40), chemical engineering (n=25), electrical engineering (n=30), and civil engineering (n=25). The structured questionnaire included questions to determine students' self-assessment of readiness for an English-language technical interview, identify the main psycholinguistic barriers, and understand their own communicative needs. In parallel, a systematic content analysis of 100 job advertisements for junior engineers on the leading recruitment platforms LinkedIn, DOU, and Djinni was conducted to identify the most sought-after "hard" and "soft skills" across the studied industries. Special attention was paid to the analysis of linguistic formulations of employers' requirements for candidates' communicative competencies.

The second stage included practical implementation. A specialized module "English for Job

Hunting" (20 academic hours) was integrated into the educational process of the experimental group (n=60). The methodological arsenal included several interrelated components. The main training method was simulation games (Mock Interviews), during which students alternately played the roles of an interviewer (HR manager or technical leader) and a candidate for an engineering position. Each simulated interview, lasting about 10 minutes, was recorded on video for further detailed linguistic and discursive analysis with a focus on lexical, grammatical, and pragmatic aspects of speech.

The scaffolding method (pedagogical support) was implemented by providing students with language constructs, professional clichés, and specialized "language frames" to structure their answers according to the STAR (Situation-Task-Action-Result) method, a standard for behavioral interviews in international corporations. The technological component of the training included the use of AI tools, particularly the Google Interview Warmup platform, which allowed students to practice answers to typical technical interview questions individually and receive automated feedback on the use of professional vocabulary, speech pace, and articulation clarity. The control group (n=60) studied according to the standard Professional English course program.

The third stage included evaluating and analyzing the results. A comparative analysis of the effectiveness of the developed methodology was conducted by administering an initial test to both groups in the form of a final mock interview with invited IT industry specialists and experienced ESP expert teachers. The assessment was based on three key criteria: lexical density, i.e., frequency and appropriateness of terminology, phrasal verbs, and action verbs; grammatical correctness, i.e., correct use of tenses, modal verbs, and complex constructions; fluency, including absence of long pauses and fillers when explaining technical processes and algorithms. Statistical analysis of empirical data was conducted using descriptive statistics and a Student's t-test to compare progress indicators between the experimental and control groups. The results of the Google Forms survey were exported and processed in Microsoft Excel.

This allowed us to create visualizations of data in the form of diagrams and summary tables to analyze the dynamics of students' communicative competence development in both groups during the semester.

Results and discussion. Analysis of the collected empirical data allowed us to identify several key positive changes in the language training of students in technical specialties following the implementation of the specialized module "English for Job Hunting". Comparison of entry and exit test results for the experimental group showed statistically significant improvements across all the parameters of communicative competence.

Firstly, the level of lexical confidence and professionalization of speech increased. After conducting a cycle of simulation interviews, the use of specific action verbs characteristic of technical discourse (e.g., integrated, debugged, optimized, synthesized, implemented, validated) increased by 45% compared to the initial indicators. Students demonstrated a noticeable transition from commonly used vocabulary to professionally marked language units. A typical example was the transformation from vague formulations such as "I did this project" to precise professional constructions such as "I executed a comprehensive structural analysis" or "I developed and deployed a microservices architecture". This qualitative shift in the students' lexical repertoire indicates the development of a conscious understanding of the importance of terminological accuracy in creating a professional image during a technical interview.

Secondly, students mastered the structural logic of responses (STAR Method). According to the final mock interviews, 78% of students in the experimental group successfully applied the STAR (Situation-Task-Action-Result) framework to structure their responses to behavioral and situational questions. Using this framework allowed students to reduce the time spent thinking about the answer by an average of 40% and significantly reduce the chaotic presentation of technical information. The greatest progress in mastering the structured approach was observed among students of the Computer Science specialty (87% successful application), which is explained by their natural tendency to algorithmic

thinking and logical sequence. Chemical and civil engineering students demonstrated slightly lower, but still significant indicators – 73% and 71%, respectively.

Thirdly, the psycholinguistic barrier and language anxiety decreased. The use of AI-based training tools, e.g., the Google Interview Warmup platform, combined with video analysis of one's own performance, significantly reduced communicative stress in front of the camera and during oral English speaking. Quantitative analysis showed that the average frequency of long pauses (over 3 seconds) and fillers, such as "uh", "um", "like", and "you know", decreased from 12 to 4 per standardized 3-minute response, representing a 67% improvement. Qualitative analysis of the recordings also revealed increased intonation confidence and decreased self-corrections, indicating greater automation of speech skills in a professional context.

Fourth, the study revealed the sectoral specificity of the development of certain linguistic competencies. Chemical and electrical engineering students demonstrated the best results in the correct use of the passive voice to describe technological processes and experimental procedures, which corresponds to the discursive conventions of their professional communities (e.g., "The compound was synthesized under controlled conditions" rather than active constructions). Civil engineering students showed significant improvement in the spatial description of architectural objects and building structures, as well as in the accuracy with which they used prepositions to express spatial relationships (e.g., above, beneath, adjacent to, perpendicular to).

Statistical analysis using Student's t-test confirmed that all improvements were statistically significant ($p < 0.05$). The control group, trained in the standard Professional English program, demonstrated moderate performance improvement (on average, 12-15%), confirming the effectiveness of targeted preparation for the technical interview format.

Conclusions. Empirical evidence shows that targeted preparation for technical interviews in English is a critical component of the ESP course for engineering students. Effective preparation requires the organic integration of professional technical knowledge with communicative strat-

Table 1

Comparative characteristics of communicative skills before and after the implementation of the methodology

| Evaluation criterion | Before study (avg. score) | After study (avg. score) | Increase |
|---|---------------------------|--------------------------|----------|
| Use of professional terminology | 3.2 | 4.6 | +44% |
| Grammatical accuracy and structure (STAR) | 2.8 | 4.3 | +53% |
| Fluency | 3.0 | 4.1 | +36% |

Note: The assessment was conducted on a 5-point scale

gies characteristic of the professional discourse of international corporations. The gap between academic training and industry requirements can be overcome only by systematically introducing specialized modules into technical university curricula.

The linguistic aspect of a successful technical interview proved to be much richer than mere knowledge of industry terminology. The professional communicative competence of an engineer includes three interrelated components: terminological accuracy, discourse structure, and rhetorical persuasiveness. The key role is played by the ability to use structural algorithms, in particular the STAR method, in combination with professionally marked action verbs, to provide a clear, logical, and convincing description of technical experience, projects, and achievements. This confirms that a modern ESP course should focus on the active formation of discursive competences.

The effectiveness of implementing innovative pedagogical technologies in preparing for technical interviews has been experimentally con-

firmed. The use of AI tools in combination with simulation games and video analysis of one's own speech allowed for a statistically significant reduction in speech anxiety and a significant increase in the fluency of future engineers. These results indicate the need to modernize professional English courses and to create a safe simulation environment for practicing communication skills.

The identified industry-specific characteristics of students' development of linguistic competencies across various engineering specialties (e.g., differences in the use of the passive voice, spatial vocabulary, and specific grammatical constructions) indicate the prospects for further research aimed at developing highly specialized industry-specific language modules. Current directions for future scientific exploration include the creation of specialized ESP courses for new and rapidly growing engineering fields, such as bioengineering, green energy, artificial intelligence and machine learning, nanotechnology, and cybersecurity, where specific discursive practices and terminological systems are emerging.

Bibliography

1. Кузнецова Н. Феномен невідповідності у навичках і кваліфікаціях: фокус на людській капітал у глобальному вимірі. *Теоретичні і методологічні підходи до формування сучасної системи вітчизняних і міжнародних підприємств, організацій і закладів* : монографія. Primedia ELAUNCH LLC. 2021. С. 174–203. DOI: <https://doi.org/10.36074/tmafmsoid.ed-2.13>
2. Albert C., Davia M. University-supported job search methods and educational mismatch in bachelor's and master's graduates. *Education + Training*. 2023. No. 65(10). P. 29–45.
3. Lee H., Lee J. The effects of AI-guided individualised language learning: A meta-analysis. *Language Learning & Technology*. 2024. No. (2). P. 134-162.
4. Migallos K., Parina J. Core Language Skills Significant Among Engineering Graduates to Succeed in the Global Workplace. *Mextesol Journal*. 2023. Vol. 47, No. 1. P. 1–15. DOI: <https://doi.org/10.61871/mj.v47n1-15>
5. Paltridge B., Starfield S. *Handbook of English for Specific Purposes*. Publisher: Wiley-Blackwell. 2013. 577 p. DOI: <https://doi.org/10.1002/9781118339855>.

References

1. Kuznetsova, N. (2021). Fenomen nevidpovidnosti u navychkakh i kvalifikatsiakh: fokus na ljudskii kapital u hlobalnomu vymiri. [Skills and qualifications mismatch phenomenon: focus on human capital in the global measurement]. *Teoretychni i metodolohichni pidkhody do formuvannia suchasnoi systemy vitchyznianskykh i*

- mizhnarodnykh pidpriemstv, orhanizatsii i zakladiv – Theoretical and Methodological Approaches to the Formation of a Modern System of National and International Enterprises, Organizations and Institutions' Development.* (P.174–203). Primedia ELaunch LLC. <https://doi.org/10.36074/tmafmsoid.ed-2.13> [in Ukrainian].
2. Albert, C., & Davia, M. (2023). University-supported job search methods and educational mismatch in bachelor's and master's graduates. *Education + Training.* (65(10)), 29–45. [in English].
 3. Lee, H., & Lee, J. H. (2024). The effects of AI-guided individualised language learning: A meta-analysis. *Language Learning & Technology.* (28(2)), 134–162. [in English].
 4. Migallos, K., & Parina, J. C. M. (2023). Core Language Skills Significant Among Engineering Graduates to Succeed in the Global Workplace. *Mextesol Journal.* (47(1)), 1–15. <https://doi.org/10.61871/mj.v47n1-15> [in English].
 5. Paltridge, Brian & Starfield, Sue. (2013). *Handbook of English for Specific Purposes.* Wiley-Blackwell. <https://doi.org/10.1002/9781118339855>. [in English].

Дата першого надходження статті до видання: 25.02.2026

Дата прийняття статті до друку після рецензування: 19.03.2026

Дата публікації (оприлюднення) статті: 13.05.2026