

RECENT APPROACHES AND ADVANCED TECHNOLOGIES OF THE FOREIGN COMMUNICATIVE COMPETENCE LEARNING

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Abstract

This research examines contemporary methodological approaches and technological innovations in developing foreign language communicative competence within technical higher education institutions. Employing action research methodology with 184 engineering students over two academic semesters, the study analyses the effectiveness of blended learning models, mobile-assisted language learning, and task-based collaborative frameworks in enhancing authentic communication skills. The findings demonstrate that integrating digital technologies with communicative language teaching principles significantly improves students' pragmatic competence, interactional fluency, and professional discourse abilities, whilst traditional grammar-translation methods show limited impact on real-world communication preparedness.

Keywords: communicative competence, innovative technologies, blended learning, task-based approach, professional discourse.

Анотація

Дане дослідження розглядає сучасні методологічні підходи та технологічні інновації у розвитку іномовної комунікативної компетентності у технічних закладах вищої освіти. Застосовуючи методологію дослідження дією з залученням 184 студентів інженерних спеціальностей протягом двох академічних семестрів, дослідження аналізує ефективність моделей змішаного навчання, мобільного навчання мов та колаборативних фреймів на основі завдань у покращенні автентичних комунікативних навичок. Результати демонструють, що інтеграція цифрових технологій з принципами комунікативного навчання мов значно покращує прагматичну компетентність студентів, інтеракційну плавність та здатності до професійного дискурсу, тоді як традиційні граматико-перекладні методи показують обмежений вплив на готовність до реальної комунікації.

Ключові слова: комунікативна компетентність, інноваційні технології, змішане навчання, підхід на основі завдань, професійний дискурс.

Introduction

The twenty-first century has witnessed a fundamental paradigm shift in foreign language education, moving from knowledge-centred instruction towards competence-based learning frameworks that prioritize authentic communication over linguistic accuracy alone. Within technical universities, where graduates must navigate increasingly globalized professional environments, the development of robust communicative competence has become not merely desirable but essential for career success and international collaboration. Contemporary engineering practice demands professionals capable of participating effectively in multinational project teams, presenting technical findings at international conferences, negotiating contracts across cultural boundaries, and maintaining professional correspondence with global partners.

However, traditional pedagogical approaches prevalent in many Ukrainian technical institutions continue to emphasize grammatical structures and vocabulary acquisition whilst providing insufficient opportunities for meaningful communicative practice. This methodological conservatism produces graduates with substantial declarative knowledge about language systems but limited procedural ability to deploy this knowledge in spontaneous, purposeful communication. The discrepancy between educational outcomes and professional requirements necessitates comprehensive reassessment of both pedagogical approaches and technological tools employed in foreign language instruction.

Recent technological developments have created unprecedented opportunities for innovative language pedagogy. Mobile applications, virtual reality environments, artificial intelligence tutors, collaborative digital platforms, and multimedia resources offer possibilities that transcend temporal and spatial limitations of traditional classroom instruction. Yet technology adoption without principled pedagogical frameworks risks superficial engagement that fails to develop genuine communicative competence. The challenge facing contemporary language educators involves synthesizing technological affordances with evidence-based

methodological approaches to create learning experiences that authentically prepare students for professional communication demands.

The Ukrainian educational context presents particular considerations. Following European integration efforts and adoption of Common European Framework of Reference standards, Ukrainian technical universities face pressures to modernize language programs whilst contending with resource limitations, variable digital infrastructure, and diverse student preparation levels. Moreover, the ongoing necessity for international collaboration in scientific research, technology transfer, and academic mobility amplifies the urgency of developing effective communicative competence among engineering students. These contextual factors create both challenges and imperatives for pedagogical innovation that warrant systematic investigation.

This study aims to investigate the effectiveness of modern methodological approaches combined with innovative technological tools in developing foreign language communicative competence among technical university students, and to establish evidence-based recommendations for curriculum design and pedagogical practice.

The specific research objectives include: analysing contemporary theoretical frameworks for communicative competence development in technical education contexts; evaluating the efficacy of blended learning models that integrate face-to-face instruction with digital technologies; examining the impact of task-based collaborative approaches on pragmatic and sociolinguistic competence; assessing mobile-assisted language learning contributions to autonomous skill development; and identifying optimal combinations of pedagogical approaches and technological tools for diverse learning contexts within technical higher education.

The research employed action research methodology, recognized as particularly appropriate for investigating pedagogical innovations within authentic educational settings. The study was conducted across two consecutive academic semesters (September 2024-May 2025) at Vinnytsia National Technical University, involving 184 second-year engineering students studying English at B1-B2 proficiency levels.

Participants were distributed across four groups: three experimental groups implementing different innovative approaches and one control group following conventional instruction methods. Experimental Group 1 utilized a blended learning model combining weekly face-to-face sessions with asynchronous online activities through Moodle platform, incorporating video lectures, interactive exercises, and forum discussions. Experimental Group 2 employed task-based learning with emphasis on collaborative projects simulating authentic engineering communication scenarios, supported by digital collaboration tools including Slack, Trello, and Google Workspace. Experimental Group 3 integrated mobile-assisted language learning through dedicated applications (Duolingo, Quizlet, Tandem) with gamification elements and peer interaction features.

Data collection methods encompassed quantitative and qualitative instruments. Pre-test and post-test assessments measured communicative competence across multiple dimensions: linguistic competence (vocabulary range, grammatical accuracy, phonological control), sociolinguistic competence (register appropriateness, cultural awareness), pragmatic competence (discourse coherence, functional effectiveness, interaction strategies), and strategic competence (communication repair, circumlocution abilities). Speaking assessments utilized Cambridge Assessment English criteria adapted for technical contexts, while writing tasks included professional genres such as technical reports, email correspondence, and abstract composition.

Qualitative data were gathered through semi-structured interviews with thirty participants representing diverse proficiency levels and learning style preferences, reflective portfolios documenting learning experiences and strategy development, and classroom observations conducted by independent evaluators using standardized protocols. Additionally, technology engagement analytics from learning management systems and mobile applications provided behavioural data regarding usage patterns, time investment, and activity preferences.

Statistical analysis employed ANOVA and post-hoc comparisons to identify significant differences among groups, while qualitative data underwent thematic analysis following established grounded theory procedures to identify recurring patterns and emergent themes.

Quantitative analysis revealed statistically significant improvements in communicative competence across all experimental groups compared to the control group, though effect sizes varied considerably across competence dimensions and methodological approaches. Experimental Group 1 (blended learning) demonstrated the most substantial overall gains, with mean post-test scores 23% higher than pre-test baselines and 18% superior to control group outcomes. Particularly notable were improvements in pragmatic

competence (31% increase) and sociolinguistic appropriateness (27% increase), suggesting that varied interaction contexts facilitated through blended formats enhance communicative adaptability.

Experimental Group 2 (task-based collaborative learning) showed exceptional development in interactional fluency and strategic competence, with students exhibiting significantly reduced hesitation phenomena, more sophisticated turn-taking behaviours, and enhanced negotiation of meaning compared to other groups. Collaborative project work involving authentic engineering scenarios – such as designing sustainable infrastructure solutions or troubleshooting technical problems – appeared to activate both linguistic resources and domain-specific knowledge simultaneously, promoting integrated skill development. However, this group showed modest gains in grammatical accuracy (only 9% improvement), indicating that meaning-focused communication may require supplementary form-focused instruction to address persistent linguistic errors.

Experimental Group 3 (mobile-assisted learning) demonstrated strong vocabulary acquisition (34% increase in productive vocabulary range) and improved pronunciation through application-based practice. The gamification elements proved highly motivating, with usage analytics revealing that 78% of students engaged with applications outside scheduled class time, averaging 47 minutes daily. However, this approach showed limited impact on pragmatic and sociolinguistic competence development, presumably because mobile applications emphasize decontextualized skill practice rather than authentic communicative interaction.

The control group, following traditional grammar-translation methodology with textbook-based exercises and teacher-centred instruction, showed minimal communicative competence gains (6% overall improvement), despite demonstrating adequate performance on discrete-point grammar tests. This finding reinforces established research indicating that explicit grammatical knowledge does not automatically transfer to communicative ability.

Qualitative data provided nuanced insights into learner experiences and perceptions. Interview participants consistently emphasized appreciation for authentic communication tasks that connected language learning with their engineering studies and future professional roles. Students reported increased confidence and willingness to communicate when technology-mediated interaction reduced performance anxiety associated with face-to-face speaking. However, several participants expressed frustration with insufficient immediate feedback in asynchronous contexts and occasional technical difficulties disrupting learning flow.

Thematic analysis of reflective portfolios revealed that successful learners across all experimental groups demonstrated metacognitive awareness regarding their strategy use, actively experimenting with different approaches and reflecting on effectiveness. Less successful learners tended toward passive consumption of materials without strategic engagement or reflective practice, suggesting that technological affordances alone cannot compensate for insufficient learner agency and metacognitive development.

An unexpected finding involved differential effectiveness across proficiency levels. Lower-proficiency students (B1) benefited most substantially from structured blended learning with explicit guidance, while higher-proficiency students (B2) thrived in task-based collaborative environments offering greater autonomy and complexity. This interaction between proficiency and pedagogical approach suggests that one-size-fits-all methodologies may be less effective than differentiated instruction responsive to learner readiness.

Conclusions

This research demonstrates that modern methodological approaches integrating innovative technologies offer substantial advantages over traditional instruction for developing foreign language communicative competence in technical university contexts. The evidence supports several key conclusions that warrant consideration in curriculum design and pedagogical practice.

First, blended learning models combining face-to-face interaction with technology-enhanced asynchronous activities provide optimal frameworks for comprehensive communicative competence development, particularly when structured to facilitate varied interaction types and authentic communication purposes. Second, task-based collaborative approaches effectively develop interactional fluency and strategic competence whilst promoting integration of linguistic and professional knowledge, though they require supplementary attention to linguistic accuracy. Third, mobile-assisted learning serves as valuable supplementary tool for vocabulary acquisition and autonomous practice but cannot substitute for interactive communicative experiences essential for pragmatic and sociolinguistic development.

Technical university language programs should adopt flexible, hybrid models that combine these approaches strategically based on specific learning objectives, student proficiency levels, and available resources. Effective implementation requires substantial instructor professional development to build technological competencies and facilitate learner-centred, technology-enhanced instruction. Additionally,

institutional infrastructure investment ensuring reliable digital access remains prerequisite for successful innovation adoption.

Future research should investigate several underexplored areas. Longitudinal studies tracking communicative competence retention and professional communication effectiveness among graduates would establish whether pedagogical innovations produce lasting impacts on career outcomes. Comparative research examining cultural and institutional contexts could identify universal principles versus context-specific adaptations. Investigation of emerging technologies such as virtual reality simulations, artificial intelligence conversation partners, and augmented reality applications represents promising directions as these tools mature. Furthermore, research exploring optimal approaches for developing intercultural communicative competence – increasingly vital in globalized professional environments – deserves particular attention. Finally, examining affective dimensions including motivation, anxiety, and self-efficacy in technology-enhanced contexts would deepen understanding of factors influencing learner engagement and achievement.

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