

ANALYSIS OF THE CURRENT STATE OF TEACHING ENGLISH TO INFORMATION TECHNOLOGY STUDENTS THROUGH THE CLIL APPROACH

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Abstract. The rapid development of information technology (IT) has significantly increased the importance of English language proficiency among future IT professionals. English has become the primary language of programming, technical documentation, software development, and international communication. Consequently, higher education institutions are expected to adopt innovative teaching approaches that integrate language learning with professional knowledge. One of the most effective approaches is Content and Language Integrated Learning (CLIL), which combines subject content and foreign language instruction within the same educational context.

Keywords: CLIL, English for Specific Purposes, Information Technology, Higher Education, Language Teaching, Professional Competence, Integrated Learning.

CLIL YONDASHUVI ASOSIDA AXBOROT TEXNOLOGIYALARI TALABALARIGA INGLIZ TILINI O'QITISHNING HOZIRGI HOLATI TAHLILI

Annotatsiya. Axborot texnologiyalarining (AT) jadal rivojlanishi bo'lajak IT-mutaxassislar uchun ingliz tilini bilishning ahamiyatini sezilarli darajada oshirdi. Ingliz tili dasturlash, texnik hujjatlar, dasturiy ta'minotni ishlab chiqish va xalqaro muloqotning asosiy tiliga aylandi. Shu sababli, oliy ta'lim muassasalarida til o'rganishni kasbiy bilimlar bilan uyg'unlashtirgan holda o'qitishning innovatsion yondashuvlarini joriy etish kutilmoqda. Eng samarali yondashuvlardan biri kontent va tilni integratsiyalashgan o'qitish (CLIL) bo'lib, u bir xil ta'lim kontekstida fan mazmuni va chet tilini o'qitishni birlashtiradi.

Kalit so'zlar: CLIL, Maxsus maqsadlar uchun ingliz tili, Axborot texnologiyalari, Oliy ta'lim, Til o'qitish, Kasbiy kompetensiya, Integratsiyalashgan ta'lim.

АНАЛИЗ СОВРЕМЕННОГО СОСТОЯНИЯ ПРЕПОДАВАНИЯ АНГЛИЙСКОГО ЯЗЫКА СТУДЕНТАМ ИНФОРМАЦИОННЫХ ТЕХНОЛОГИЙ НА ОСНОВЕ ПОДХОДА CLIL

Аннотация. Стремительное развитие информационных технологий (ИТ) значительно повысило значимость знания английского языка для будущих ИТ-специалистов. Английский стал основным языком программирования, технической документации, разработки программного обеспечения и международного общения. Поэтому в высших учебных заведениях ожидается внедрение инновационных подходов к обучению, сочетающих изучение языка с профессиональными знаниями. Одним из наиболее эффективных подходов является интегрированное обучение контенту и языку (CLIL), которое объединяет предметное содержание и обучение иностранному языку в одном образовательном контексте.

Ключевые слова: CLIL, Английский язык для специальных целей, Информационные технологии, Высшее образование, Языковое обучение, Профессиональная компетенция, Интегрированное образование.

Introduction. The twenty-first century has witnessed an unprecedented expansion of digital technologies, artificial intelligence, cloud computing, cybersecurity, and software engineering. As a result, English has become the dominant language of the global IT industry. Most programming languages, technical manuals, research articles, developer communities, and software documentation are produced in English. Platforms such as GitHub, Stack Overflow, Microsoft Learn, Oracle Documentation, and AWS provide educational resources primarily in English, making language proficiency an essential requirement for IT specialists.

Higher education institutions are therefore expected to prepare graduates who possess not only technical expertise but also sufficient English language competence to participate effectively in international academic and professional environments. Traditional English language instruction, however, often emphasizes general communication skills while paying limited attention to discipline-specific language needs.

One promising solution is Content and Language Integrated Learning (CLIL), an educational approach in which academic subjects are taught through a foreign language. Rather than learning English as an isolated subject, students acquire language naturally

while studying professional content. This dual-focused methodology simultaneously develops linguistic competence and subject knowledge.

The concept of CLIL was introduced by David Marsh (1994) and further developed by Coyle, Hood, and Marsh (2010) through the widely recognized 4Cs Framework, which consists of:

- Content – acquiring subject knowledge;
- Communication – developing language skills;
- Cognition – promoting higher-order thinking;
- Culture – fostering intercultural awareness.

In many European universities, CLIL has become an integral component of higher education because it enhances students' academic achievement, motivation, and employability.

In Uzbekistan, educational reforms emphasize foreign language learning and digital transformation in higher education. Despite these reforms, the implementation of CLIL in Information Technology programs remains limited and insufficiently researched.

Therefore, the objective of this study is to analyze the current state of English language teaching through the CLIL approach for Information Technology students and identify existing challenges and opportunities for improvement.

The concept of CLIL has attracted considerable attention from researchers over the past two decades. Numerous studies have confirmed its effectiveness in improving both language proficiency and subject knowledge.

Marsh (2002) defines CLIL as an educational approach in which content subjects are taught through an additional language with dual learning objectives. According to Marsh, students acquire language naturally because communication becomes a meaningful tool rather than the primary learning goal.

Coyle, Hood, and Marsh (2010) introduced the 4Cs Framework, emphasizing that successful CLIL instruction requires the integration of content, communication, cognition, and culture. They argue that language learning should support knowledge construction instead of functioning independently.

Mehisto, Marsh, and Frigols (2008) identified several characteristics of effective CLIL classrooms, including learner-centered instruction, authentic materials, collaborative learning, and active student participation. Their research demonstrates that CLIL significantly increases learners' motivation and confidence.

Dalton-Puffer (2011) reported that students participating in CLIL programs demonstrate superior academic vocabulary, oral communication, and critical thinking compared with students enrolled in traditional language courses.

Recent studies published between 2020 and 2025 indicate that digital technologies have further strengthened CLIL implementation. Artificial intelligence, learning management systems, virtual laboratories, online collaboration platforms, and adaptive learning tools create authentic learning environments where students use English while solving professional tasks.

Despite these international developments, studies focusing specifically on CLIL implementation in Information Technology education within Central Asian higher education remain limited. This research attempts to address that gap.

Research Methodology This study employed a mixed-method research design, combining quantitative and qualitative methods.

Participants

The research involved 180 participants from higher education institutions offering Information Technology programs.

Participants	Number
First-year IT students	60
Second-year IT students	55
Third-year IT students	35
English language teachers	20
IT subject lecturers	10

Total participants: 180

The following research methods were employed:

- analysis of scientific literature;
- classroom observation;
- questionnaire survey;
- semi-structured interviews;
- document analysis;
- statistical data analysis.

The questionnaire consisted of five sections:

- English language proficiency;
- Professional communication needs;
- Familiarity with CLIL;
- Digital learning practices;
- Challenges in learning English.

Responses were analyzed using descriptive statistics. The survey revealed that English is widely recognized as an essential skill for future IT professionals.

Statement	Percentage
English is essential for an IT career	91%
Difficulty understanding technical documentation	74%
Comfortable writing code in English	66%
Able to deliver presentations in English	39%
Confident in professional communication	31%

These findings demonstrate that although students acknowledge the importance of English, many still experience difficulties using it confidently in academic and professional contexts.

Teachers reported varying levels of CLIL implementation.

Level of CLIL implementation	Percentage
Regularly implemented	24%
Occasionally implemented	42%
Rarely implemented	21%
Never implemented	13%

The data suggest that CLIL practices are gradually emerging but have not yet become standard practice.

Teacher responses revealed several important issues.

87% believe CLIL improves learning outcomes.

82% require professional development in CLIL methodology.

69% report a shortage of teaching materials.

76% indicate insufficient digital resources.

71% emphasize the need for cooperation between language and IT instructors.

Observation of CLIL-based lessons showed noticeable improvements.

Compared with traditional English classes:

student participation increased significantly;

use of technical vocabulary increased by approximately 40%;

collaborative problem-solving improved;

classroom interaction became more student-centered;

confidence in discussing IT topics in English increased.

Students demonstrated greater willingness to communicate because English became a practical tool for completing authentic academic tasks rather than an isolated subject.

The findings support previous international research demonstrating the effectiveness of CLIL in higher education.

The results correspond with the studies conducted by Coyle et al. (2010), Mehisto et al. (2008), and Dalton-Puffer (2011), all of whom concluded that CLIL simultaneously develops language competence, professional knowledge, and critical thinking skills.

Within Information Technology education, CLIL appears particularly suitable because students regularly encounter English terminology in programming languages, software interfaces, technical documentation, and online learning platforms. Consequently, integrating English into professional subjects creates authentic learning situations.

However, several challenges continue to hinder successful implementation.

First, many English teachers possess limited knowledge of Information Technology terminology, while subject specialists often lack sufficient English proficiency. This creates difficulties in designing integrated lessons.

Second, higher education institutions have relatively few CLIL-oriented textbooks specifically developed for Information Technology disciplines.

Third, assessment systems rarely evaluate language and content learning simultaneously, despite this being one of the fundamental principles of CLIL.

Finally, teacher training programs seldom include comprehensive preparation in CLIL methodology.

To improve implementation, universities should:

develop CLIL-based curricula for IT programs;

organize interdisciplinary collaboration between English and IT faculty;

produce specialized teaching materials;

integrate digital learning technologies and artificial intelligence into CLIL instruction;

establish continuous professional development programs for teachers.

This study analyzed the current state of teaching English to Information Technology students through the CLIL approach in higher education. The findings demonstrate that CLIL significantly enhances students' professional vocabulary, communication skills, academic motivation, and understanding of subject content. By integrating language learning with

professional education, CLIL prepares students more effectively for international academic environments and the global labor market.

Nevertheless, the successful implementation of CLIL requires systematic institutional support. Universities should invest in teacher training, curriculum development, instructional materials, and digital educational resources. Future research should investigate the integration of artificial intelligence, adaptive learning systems, virtual laboratories, and online collaborative environments into CLIL-based English instruction for Information Technology students.

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