



THE ROLE OF ENGLISH IN DEVELOPING THE PROFESSIONAL COMMUNICATIVE COMPETENCE OF INFORMATION SYSTEMS AND TECHNOLOGIES STUDENTS

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Abstract: This article examines the role of English in developing the professional communicative competence of Information Systems and Technologies students. A focused documentary analysis and conceptual synthesis connect recent Uzbek policy documents, computing curriculum guidance and scholarship on language education. The study identifies four educational functions of English: accessing professional knowledge, expressing technical reasoning, coordinating collaborative work and mediating between specialist and non-specialist audiences. Its methodological results comprise a competence framework, a task alignment matrix and an assessment procedure. Content and Language Integrated Learning (CLIL) is used to explain how disciplinary understanding and language development can be planned within the same learning activity. The analysis argues that terminology knowledge becomes professionally useful when students employ it to interpret evidence, clarify requirements and justify decisions. Proposed teaching sequences combine documentation reading, professional discussion, written products and reflective revision. English proficiency and technical competence require related but distinguishable assessment evidence. The article is a conceptual study without participant data; the proposed framework requires empirical validation before its effectiveness can be established.

Key words: English language; professional communicative competence; information systems and technologies; CLIL; technical communication; mediation; assessment.

Axborot tizimlari va texnologiyalari yoʻnalishi talabalarining kasbiy kommunikativ kompetensiyasini rivojlantirishda ingliz tilining oʻrni

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Annotatsiya: Maqolada axborot tizimlari va texnologiyalari yoʻnalishi talabalarining kasbiy kommunikativ kompetensiyasini rivojlantirishda ingliz tilining oʻrni oʻrganiladi. Maqsadli hujjatlar tahlili va konseptual umumlashtirish orqali Oʻzbekistonning yangi siyosiy-meʼyoriy hujjatlari, kompyuter sohasi taʼlim dasturlariga oid tavsiyalar va til taʼlimiga doir ilmiy qarashlar oʻzaro bogʻlanadi. Ingliz tilining toʻrtta taʼlimiy vazifasi aniqlashtiriladi: kasbiy bilimlarni oʻzlashtirish, texnik fikrlashni ifodalash, hamkorlikdagi faoliyatni muvofiqlashtirish hamda mutaxassislar va



nomutaxassislar o'rtasida mazmunni tushunarli yetkazish. Metodik natijalar kompetensiya tuzilmasi, topshiriqlarni muvofiqlashtirish matritsasi va baholash tartibidan iborat. CLIL yondashuvi yagona o'quv faoliyatida kasbiy mazmunni anglash va tilni rivojlantirishni rejalashtirish uchun asos sifatida qo'llanadi. Terminologik bilimlar dalillarni talqin qilish, talablarni aniqlashtirish va qarorlarni asoslashda qo'llangandagina kasbiy ahamiyat kasb etishi asoslanadi. Taklif etilgan o'qitish ketma-ketligi hujjatlarni o'qish, kasbiy muhokama, yozma mahsulot yaratish va refleksiv tahrirni birlashtiradi. Ingliz tilini egallash va texnik kompetensiya o'zaro bog'liq, biroq farqlanadigan baholash dalillarini talab qiladi. Maqola ishtirokchilar ma'lumotlariga asoslanmagan konseptual tadqiqot bo'lib, taklif etilgan tizim samaradorligini aniqlash uchun empirik tekshiruv zarur.

Kalit so'zlar: ingliz tili; kasbiy kommunikativ kompetensiya; axborot tizimlari va texnologiyalari; CLIL; texnik muloqot; mediatsiya; baholash.

1 Introduction

For Information Systems and Technologies students, professional communication involves making technical knowledge usable by other people. A student may understand a database concept but struggle to explain its implications to a client, ask a precise clarification question or document a decision for a project team. English instruction therefore needs a clear relationship with professional actions. Its educational purpose extends from understanding a source to negotiating what that source means for a particular problem.

Recent Uzbek policy provides a relevant context. Presidential Decree No. PF-21 of 16 February 2026 approved the revised Uzbekistan 2030 Strategy for 2026–2030 and emphasised measurable outcomes and the alignment of strategic planning [1]. This establishes a broad rationale for connecting educational objectives with assessable performance. It does not prescribe a particular English teaching method; the classroom implications considered here are the author's pedagogical interpretation.

A more direct connection appears in Presidential Resolution No. PQ-51 of 1 February 2024, which supports the preparation of qualified specialists in digitalisation and explicitly links digital skills with foreign-language development and IT service export needs [2]. Its provisions include support for international IT certification and English certification at B2 or above. Resolution No. PQ-388 of 26 December 2025 amended the financing provision, with the relevant amendment entering into force on 1 January 2026 [3]. These measures establish a policy connection between English and professional development. They should not be interpreted as a universal B2 graduation requirement for every university programme.

The educational problem is how to translate this connection into coherent learning experiences. An English course built mainly around general conversation may insufficiently address technical explanation. A course dominated by terminology lists may leave students unable to use familiar words in negotiations or reports. At the same time, increasing technical complexity without language support can restrict participation. Curriculum design must therefore connect professional meaning, communicative purpose and accessible learning conditions.





This article asks three questions. What functions does English perform in the development of professional communicative competence? How can these functions be translated into integrated tasks for Information Systems and Technologies students? Which assessment criteria can make progress visible without confusing language proficiency with technical expertise? The aim is to develop a conceptual framework that answers these questions and offers a basis for subsequent classroom investigation.

The scope includes reading, listening, speaking and writing as connected parts of professional activity. A typical sequence may begin with documentation, continue through discussion and end with a written recommendation. CLIL is examined as a means of planning subject understanding and English development together. The argument concerns the design of learning opportunities, not a claim that studying through English automatically improves either technical achievement or employability.

1.1 Literature review

International computing guidance supports a competence-oriented view of degree design. The ACM/AIS IS2020 report frames undergraduate Information Systems education around competencies and recognises that programmes must adapt the model to their institutional setting [4]. This orientation is relevant because professional communication requires the use of knowledge in context. In the present article, the implication is to define English learning through observable actions rather than through coverage of specialist topics alone.

The ACM/IEEE Information Technology Curricula 2017 report identifies effective communication with different audiences and participation in teams among graduate outcomes [5]. These outcomes justify attention to explanation, audience awareness and collaborative work in technical education. They do not establish English as the only language of professional practice. Instead, they provide professional purposes to which an English course can contribute when additional-language communication is relevant.

The CEFR Companion Volume extends the account of communication through descriptors for mediation, online interaction and plurilingual competence [6]. Mediation is particularly useful for understanding situations in which a learner makes technical information accessible to someone else. For example, a student may explain the implications of an English-language specification in accessible English or discuss it first in Uzbek before preparing a final English response. Language choice should follow the learning purpose and the audience.

Coyle, Hood and Marsh conceptualise CLIL through the relationship among content, communication, cognition and culture [7]. Their framework helps teachers plan an activity in which language is used to understand and communicate disciplinary meaning. For the topic considered here, the central design question is whether students must both reason about an IT problem and communicate that reasoning. Simply placing IT vocabulary in a language exercise does not demonstrate such integration.

Dalton-Puffer's review connects CLIL with classroom discourse and draws attention to difficulties in assessing content outcomes [8]. This is relevant when English fluency is taken as evidence of subject understanding. The proposal developed below





responds by separating evidence of technical reasoning from evidence of linguistic clarity, while collecting both through an integrated task. A student can therefore receive targeted feedback on a misconception without having every difficulty classified as a language problem.

Graham and colleagues' systematic review of CLIL and English-medium instruction reports mixed findings across 25 studies and identifies methodological limitations affecting strong conclusions [9]. Its evidence supports caution rather than an unconditional claim of success. The reviewed contexts do not establish the effect of the framework proposed in this article. Together, the sources provide complementary foundations: computing guidance clarifies professional purposes, language frameworks describe communicative activity, and CLIL scholarship informs integration while highlighting the need for careful evaluation.

2 Materials and methods

The study combines focused documentary analysis with conceptual instructional design. The corpus consists of nine sources selected for their relevance to the research questions: three presidential documents, two international computing curriculum reports, one language reference framework, one CLIL book and two research reviews. Legal sources were consulted in their available official versions on LexUZ. Academic and professional sources were checked through publisher, journal or sponsoring organisation pages. This is a purposive conceptual study rather than a systematic literature review.

Selection followed three criteria. A document needed identifiable provenance, a direct connection with professional competence or integrated language learning, and sufficient accessible information to support a bounded claim. Policy documents were used to establish priorities and context; curriculum reports to identify professional purposes; language and CLIL sources to inform communicative activity and pedagogy. The analysis did not treat these different document types as equivalent evidence of learning effectiveness.

The analytical procedure involved four steps. First, statements about professional activity, communication and educational outcomes were identified. Second, these statements were grouped according to the function of English in learning and work. Third, each proposed function was linked to a task, a language demand and an observable product. Fourth, the resulting design was examined for consistency between what students would practise and what teachers would assess. This examination was performed conceptually and did not involve classroom testing or expert-panel validation. The unit of analysis was the relationship between a professional purpose and the communication required to fulfil it. For example, reading a specification was analysed in relation to the decision that the reader must make, the information that must be extracted and the explanation subsequently required. This approach avoids assuming that a text is professionally useful simply because it contains specialist terminology. It also identifies where an additional support, such as a diagram or clarification prompt, may be necessary.

Three distinctions guided interpretation. A policy priority was distinguished from a legally prescribed curricular threshold. A plausible teaching mechanism was distinguished from a demonstrated learning effect. Finally, successful group production





was distinguished from individual competence. These distinctions structure the results and prevent the use of broad claims where the available materials support only a limited conclusion.

No participant recruitment, surveys, interviews or achievement testing were conducted. The examples below are author-developed instructional scenarios; their timings, outputs and descriptors are proposals. Consequently, the results consist of a competence framework and practical design principles, not statistical estimates. Future empirical work would need to examine feasibility, learner differences and outcome validity. Documentary selection was limited in scope, and conclusions should not be read as an exhaustive account of all research on English in computing education.

3 Results

3.1 Functions of English in professional competence

The synthesis identifies four functions for English instruction in this setting. The knowledge-access function concerns interpreting professional information and judging its relevance to a problem. The reasoning function concerns explaining procedures, connecting evidence with claims and comparing alternatives. The coordination function concerns clarifying responsibilities and maintaining shared understanding during joint work. The mediation function concerns making a technical message usable for a particular audience. These are analytical categories proposed in this article, not measured factors from a validated instrument.

The functions are connected in actual activity. When students read a description of a software service, they first identify relevant requirements. They then discuss possible interpretations, compare alternatives and explain a recommendation to a client. The same information passes through several communicative forms. English learning becomes professionally meaningful when the learner can manage these transformations accurately, rather than reproduce the wording of the original text.

3.2 A proposed task alignment matrix

Table 1 connects each function with an illustrative task and evidence. It can guide the selection of reading, speaking and writing activities within one unit. The examples describe educational products and do not imply certification of workplace readiness.

Table 1 Functions of English and corresponding task evidence

Function	Illustrative task	Assessment evidence
Knowledge access	Read requirements and identify constraints	Accurate source notes and relevant questions
Technical reasoning	Compare options and justify a choice	Evidence linked to a defensible recommendation
Coordination	Negotiate roles and clarify a shared plan	Recorded agreement and responsive interaction
Mediation	Explain a technical change to a user	Accessible explanation preserving key meaning



The matrix also helps teachers detect incomplete lesson designs. A task labelled “read about databases” lacks an explicit professional decision and an assessable output. A clearer instruction is to identify two relevant constraints in a short requirements document and explain how they affect a proposed data structure. Language support can then target conditional relationships, precise reference and the organisation of an explanation.

Professional communicative competence is therefore defined here as the readiness and capacity to interpret, evaluate and communicate professionally relevant information in English, coordinate meaning with others and revise one’s performance. This definition makes accuracy and responsibility part of communication. A competent response can include a request for missing information or an explicit statement of uncertainty when the evidence does not justify a definite answer.

3.3 Components and learning objectives

The proposed competence framework contains five related components. Professional-cognitive competence concerns understanding concepts and evaluating information. Linguistic-terminological competence concerns selecting intelligible language and contextually appropriate terminology. Discourse-pragmatic competence concerns organising a message according to genre, audience and purpose. Strategic-interactive competence concerns clarification, negotiation and repair. Reflective-evaluative competence concerns recognising weaknesses and using feedback to improve a professional product.

These components provide different explanations for similar difficulties. A weak presentation may result from inadequate subject knowledge, poor organisation or a failure to anticipate audience questions. Additional vocabulary practice would address only some of these problems. A short diagnostic task should therefore elicit both what students understand and how they communicate it. Teachers can then choose whether to clarify a concept, model a discourse structure or provide an interactional prompt.

Learning objectives should specify a professional action, the information available and the expected evidence. For example, students may be asked to explain a proposed system change to a non-specialist user using a diagram and a short source text. Success requires an accurate account of the change, selection of relevant details and an understandable explanation of its implications. The objective identifies why the learner speaks and what the listener should understand afterwards.

In a written task, students could prepare an issue report that distinguishes an observed problem from an inferred cause. The language objective concerns sequencing, qualification and precise description; the content objective concerns the completeness and coherence of the report. A teacher can check whether another student can follow the description without inventing missing information. The exercise therefore links language choices to their practical consequences.

3.4 Linguistic scaffolding and material selection

Scaffolds should support the communicative purpose. A bilingual glossary may help with technical reference; an evidence grid may help learners distinguish claims from observations; a question bank may support clarification during discussion. A model





paragraph can demonstrate how to move from a problem statement to a justified recommendation. However, a complete model answer may conceal whether the learner has developed an independent understanding.

Materials should be selected according to conceptual difficulty, linguistic difficulty and professional relevance. Short texts can remain demanding when they contain compressed assumptions. A diagram or contextual note may offer better support than extensive simplification. Adaptations must preserve conditions, qualifications and relationships among ideas. Subject colleagues should check technical accuracy, particularly when a language teacher modifies a specialist explanation. The proposed approach allows learners to use Uzbek for initial clarification when useful, while retaining an explicit English communicative outcome. Multilingual resources are thus planned supports rather than evidence of instructional failure.

3.5 An integrated learning sequence

An illustrative unit concerns the selection of a backup arrangement for a fictional university department. Students receive a teacher-created needs brief, a small comparison sheet and a short explanatory text. All technical assumptions are supplied and checked by a subject specialist; the task does not require students to infer current vendor specifications or advise a real organisation. The communicative purpose is to recommend an option and explain its limitations to a non-specialist manager.

The first stage is diagnosis. Each learner writes a brief initial interpretation of the problem and identifies information that is missing. This separates unfamiliar terminology from conceptual uncertainty. The teacher reviews a sample of responses and clarifies essential concepts before the students compare options. A diagnostic question may ask why a low purchase price alone is insufficient for the decision. The answer reveals whether students can connect a criterion with the broader problem.

The second stage combines source reading with linguistic preparation. Students extract the supplied constraints, record evidence and compare the meaning of key expressions. A planning grid contains separate spaces for a claim, its supporting information and its limitation. Useful language includes expressions of comparison, conditions and cautious recommendation. The teacher models one reasoning step, leaving the substantive decision for the group to develop.

The third stage is professional interaction. Group members represent different concerns, such as continuity of work, usability and cost. They question one another's priorities and identify which facts support their proposals. The discussion must result in a recorded decision and at least one condition under which that decision would change. This requirement encourages students to examine the limits of an answer rather than defend it regardless of new information.

The fourth stage is production. Each group prepares a short briefing and a written recommendation. Students explain the chosen option, connect it to the supplied constraints and distinguish evidence from assumptions. Each learner answers an individual follow-up question. This creates a basis for assessing both the shared product and personal understanding. The audience can request clarification if a term has not been explained sufficiently.





The fifth stage is reflection and revision. Learners compare the initial interpretation with the final recommendation, identify a content issue and a communication issue, and revise one section. The teacher collects the source notes, group decision and revised individual contribution. These connected products reveal how the recommendation developed. The sequence is proposed as a reusable pattern for topics such as requirements analysis, user support or project reporting. Its transfer to a different topic depends on checking subject accuracy and changing the criteria accordingly; identical worksheets alone do not create meaningful integration.

3.6 Assessment of professional communication

Assessment should make technical understanding and English performance separately visible while preserving the integrated task. Five criteria correspond to the proposed components: relevance and accuracy of reasoning; intelligibility and terminology; organisation and audience awareness; interaction and clarification; and evidence-based revision. A profile across these criteria is more diagnostically useful than a single mark. It shows whether the next instructional step concerns a concept, a language choice or a communicative strategy.

For professional reasoning, the teacher checks whether the learner identifies relevant information, links it to the conclusion and acknowledges a limitation. For linguistic performance, the question is whether language enables an accurate and understandable message. Minor errors that do not obscure meaning differ from errors that reverse a condition or misrepresent a technical relationship. This distinction should be reflected in feedback rather than treating every surface error as equally consequential.

Discourse assessment considers the structure of the product and its fit with the audience. A report may be grammatically accurate but fail to explain why a decision matters. Interaction assessment considers how the learner responds to another person, requests clarification and checks shared understanding. Reflective assessment requires an actual revision and a short explanation of its purpose. A statement that the task was interesting does not demonstrate the capacity to improve a professional message.

A proposed five-point scale can describe performance within each criterion. Level one indicates insufficient evidence of successful completion; level two indicates partial completion with substantial assistance; level three indicates adequate completion under familiar conditions; level four indicates clear and largely independent performance; level five indicates flexible performance when a relevant condition changes. These descriptors are provisional. Teachers must develop criterion-specific examples and establish agreement before using them for consequential decisions.

Individual evidence is essential even when tasks are collaborative. A fluent group spokesperson can conceal uneven understanding, while a hesitant learner may have contributed important reasoning. Follow-up questions, short individual summaries and revision notes allow the teacher to examine these differences. The aim is to assess demonstrated competence rather than confidence, speaking frequency or the visual quality of a presentation.

Assessment quality also depends on comparable conditions. Students should receive equivalent access to source materials, preparation time and permitted supports. Teachers





need to record whether translation software or generative tools were used because a polished product alone cannot demonstrate unaided performance. Where such tools are allowed, students should verify the content, explain their choices and respond to questions about the product. This is an assessment proposal, not evidence that a particular technology necessarily improves learning. Local piloting should examine whether the procedure is practical, fair and sensitive to development.

4 Discussion

The analysis suggests that English contributes to professional competence through the activities it enables students to perform with knowledge. Access to information is an initial step; learners also need to judge relevance, communicate reasoning and coordinate action. The proposed framework makes these relationships explicit. Its contribution is an instructional synthesis connecting professional purposes with tasks and evidence, rather than a claim that language proficiency is a sufficient condition for technical competence. CLIL is useful here as a planning approach because it requires deliberate attention to disciplinary meaning and language development [7]. The proposed sequence connects these through a professional decision. However, meaningful integration depends on task quality and teacher cooperation. An English-only discussion with little subject reasoning can remain superficial. A technically demanding assignment without accessible support may make the language classroom an obstacle to participation. The design must therefore examine both demands together.

The role of English also needs to be understood within a multilingual educational setting. Students may acquire disciplinary knowledge in Uzbek or other languages and communicate with local users who do not require English. An appropriate course prepares them to move between audiences and linguistic resources. It should support access and explanation without devaluing local-language knowledge. Professional adequacy depends on the accuracy and usefulness of the message, as well as the language required in the particular situation.

Institutional feasibility requires a manageable division of responsibility. Subject teachers can verify technical assumptions and identify representative professional situations. English teachers can analyse genre, interaction and linguistic support. Joint review of a small number of learner products can identify recurring difficulties. Starting with one integrated unit provides more usable evidence than assuming that an entire curriculum can be transformed without attention to workload, resources and teacher preparation.

The study has clear limitations. Its corpus is purposive, its examples are constructed and its assessment descriptors are unvalidated. Outcome evidence from broader CLIL and EMI research cannot establish effects in this population [9]. A future study should use baseline measures of language and subject understanding, comparable tasks, independent ratings and a later transfer task. It should document instructional time and implementation conditions, and account for initial group differences before attributing gains to the approach.

5 Conclusion

English can support the professional communicative competence of Information Systems and Technologies students by enabling knowledge access, technical explanation,





collaboration and mediation. These functions become educationally meaningful when learners interpret evidence, negotiate understanding and produce audience-appropriate responses. The proposed framework links five competence components with integrated tasks and differentiated assessment. Its implementation requires accurate subject content, purposeful linguistic scaffolding and individual evidence within collaborative work. The framework offers a basis for syllabus development and empirical investigation; its effectiveness remains to be tested in actual university classrooms.

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