



**CONTEMPORARY REQUIREMENTS FOR DEVELOPING
PROFESSIONAL COMMUNICATIVE COMPETENCE IN ENGLISH
AMONG INFORMATION SYSTEMS AND TECHNOLOGIES STUDENTS**

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Abstract: This article examines the requirements that should guide the development of professional communicative competence in English among undergraduate students of Information Systems and Technologies. It adopts a qualitative documentary review and conceptual synthesis of Uzbek educational policy, language education frameworks, computing curriculum guidance, and selected pedagogical publications. The analysis distinguishes general language proficiency from the ability to accomplish disciplinary tasks through appropriate communication. Its principal outcome is a proposed five-component framework encompassing professional-cognitive, linguistic-terminological, discourse-pragmatic, strategic-interactive, and reflective-evaluative competence. The framework is operationalised through requirements elicitation, technical explanation, collaborative problem-solving, and responsible digitally mediated interaction. Content and Language Integrated Learning is considered a means of connecting technical reasoning with explicit language support. A task sequence and an analytic assessment scheme illustrate how the framework could inform university teaching. The synthesis suggests that contemporary provision should combine authentic professional purposes, audience-sensitive communication, linguistic scaffolding, digital responsibility, and evidence-based assessment. These are design propositions rather than experimentally confirmed effects. The article concludes by identifying institutional conditions and an empirical validation agenda for implementation in Uzbek higher education.

Key words: professional communicative competence; English for Specific Purposes; Information Systems and Technologies; CLIL; linguistic scaffolding; digital interaction; authentic assessment.

**СОВРЕМЕННЫЕ ТРЕБОВАНИЯ К РАЗВИТИЮ
ПРОФЕССИОНАЛЬНОЙ КОММУНИКАТИВНОЙ КОМПЕТЕНЦИИ НА
АНГЛИЙСКОМ ЯЗЫКЕ У СТУДЕНТОВ НАПРАВЛЕНИЯ
«ИНФОРМАЦИОННЫЕ СИСТЕМЫ И ТЕХНОЛОГИИ»**



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Аннотация: В статье рассматриваются требования к развитию профессиональной коммуникативной компетенции на английском языке у студентов направления «Информационные системы и технологии». Исследование основано на качественном анализе документов и концептуальном обобщении образовательной политики Узбекистана, языковых рамочных документов, рекомендаций по подготовке специалистов в области информационных систем и педагогических публикаций. Разграничиваются общая языковая подготовка и способность решать профессиональные задачи средствами английского языка. Предлагается модель, включающая профессионально-когнитивный, лингвистико-терминологический, дискурсивно-прагматический, стратегически-интерактивный и рефлексивно-оценочный компоненты. CLIL рассматривается как средство интеграции предметного содержания и языковой поддержки. Разработаны последовательность учебных заданий и подход к оцениванию. Обоснована необходимость аутентичных профессиональных целей, учёта адресата, ответственного цифрового взаимодействия и рефлексии. Полученные результаты представляют собой теоретически обоснованные предложения, требующие эмпирической проверки.

Ключевые слова: профессиональная коммуникативная компетенция; английский язык для специальных целей; информационные системы и технологии; CLIL; языковая поддержка; цифровое взаимодействие; аутентичное оценивание.

**AXBOROT TIZIMLARI VA TEXNOLOGIYALARI YO‘NALISHI
TALABALARINING INGLIZ TILIDA KASBIY KOMMUNIKATIV
KOMPETENSIYASINI RIVOJLANTIRISHGA QO‘YILGAN ZAMONAVIY
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Annotatsiya: Maqolada Axborot tizimlari va texnologiyalari yo‘nalishi talabalarining ingliz tilida kasbiy kommunikativ kompetensiyasini rivojlantirish talablari tahlil qilinadi. Tadqiqot O‘zbekiston ta’lim siyosatiga oid hujjat, til ta’limi mezonlari, axborot tizimlari bo‘yicha kadrlar tayyorlash tavsiyalari va pedagogik manbalarning sifat tahlili hamda konseptual umumlashtirilishiga asoslanadi. Umumiy til tayyorgarligi kasbiy vazifalarni ingliz tili vositasida bajarish qobiliyatidan farqlanadi. Kasbiy-kognitiv, lingvistik-terminologik, diskursiv-pragmatik, strategik-interaktiv va refleksiv-baholash komponentlarini qamrab oluvchi model taklif etiladi. CLIL kasbiy mazmunni lisoniy tayanch bilan uyg‘unlashtirish vositasi sifatida yoritiladi. Topshiriqlar ketma-ketligi va baholash yondashuvi ishlab chiqiladi. Autentik kasbiy maqsadlar, adresat xususiyatlarini hisobga olish, mas’uliyatli raqamli muloqot va refleksiya zarurati asoslanadi. Natijalar tajribada tasdiqlangan samaradorlik ko‘rsatkichlari emas, balki empirik tekshirishni talab qiladigan nazariy takliflardir.

Kalit so‘zlar: kasbiy kommunikativ kompetensiya; maxsus maqsadlar uchun ingliz tili; axborot tizimlari va texnologiyalari; CLIL; lisoniy tayanch; raqamli muloqot; autentik baholash.

1. Introduction

An information system is developed and maintained through communication as well as technical work. A database designer must explain relationships between entities; a support specialist must clarify an incomplete problem report; and a development team must negotiate what a client actually needs. In English language education for Information Systems and Technologies students, these situations raise a curricular question: what should learners be able to accomplish with English when technical knowledge, audience expectations, and communication constraints operate simultaneously?

The Uzbek policy context provides a clear rationale for examining this question. Presidential Resolution No. PQ-5117 of 19 May 2021, “On measures to bring the popularisation of foreign language learning in the Republic of Uzbekistan to a qualitatively new level” (English translation of the Uzbek title), identifies the development of foreign language teaching as an educational priority and emphasises improvement in instructional quality [1]. This article draws on that broad policy orientation. It does not interpret the resolution as requiring a particular CLIL model or a specific English proficiency level for Information Systems students.

The educational implication is that language learning outcomes should be related to what graduates need to do. The ACM/AIS IS2020 model similarly organises curriculum expectations around demonstrable competencies and the performance of contextualised tasks [2]. Applied to English instruction, this orientation directs attention towards explaining a design decision, checking a requirement, documenting a technical



problem, and responding constructively to disagreement. Terminology is necessary within these activities, but successful performance also depends on purpose, sequencing, audience awareness, and the management of uncertainty.

For the purposes of this article, professional communicative competence in English is defined as the integrated capacity to interpret, construct, negotiate, and critically evaluate meaning while carrying out Information Systems and Technologies tasks. The definition includes receptive and productive language use, interaction, and mediation between technical and non-technical participants. It also includes the judgement needed to select relevant information and make limitations visible. This is a working analytical construct, rather than an established disciplinary standard.

A curriculum organised solely around topics such as hardware, networks, or databases can leave this capacity insufficiently specified. A topic identifies what students discuss; a communicative outcome identifies what they do with that content. Knowing the meaning of “backup” differs from explaining to a client why a backup schedule is appropriate and checking whether the client understands the recovery limitations. The distinction makes observable performance central to course design.

The study addresses three questions: which requirements emerge when language, disciplinary, and digital perspectives are considered together; how can these requirements be represented in a coherent competence framework; and how can they inform CLIL-oriented tasks and assessment? Its contribution is an original pedagogical synthesis and a set of reviewable design proposals. No claim is made that the proposed framework has already improved student outcomes or been validated across institutions.

1.1. Literature review

Communicative language teaching supplies a starting point for distinguishing grammatical knowledge from appropriate language use. Canale and Swain’s theoretical account links communicative competence to grammatical, sociolinguistic, and strategic dimensions [3]. Its relevance lies in recognising that an accurate sentence may still fail to achieve a communicative purpose. A technically correct explanation that ignores the listener’s background, or a response that fails to repair misunderstanding, can be inadequate in professional interaction. The five-component model developed below is the present article’s adaptation; it is not attributed to Canale and Swain.

The Council of Europe’s CEFR Companion Volume extends the description of language activity through mediation and online interaction, among other areas [4]. These categories are useful for analysing work in which a student transforms specialist information into an accessible explanation or coordinates meaning through a digital channel. Nevertheless, CEFR descriptors require contextual interpretation: a general language descriptor does not establish whether a database explanation is technically



sound. Here, CEFR concepts inform the communication dimension, while disciplinary criteria remain separately specified.

English for Specific Purposes provides a complementary perspective. Hutchinson and Waters place learner needs and learning processes at the centre of ESP course development [5]. Long's edited volume develops methodological approaches to second language needs analysis across varied settings [6]. Together, these sources support the principle that course design should begin with an investigation of relevant activities and learning conditions. For Information Systems and Technologies, such an investigation should compare students' existing capabilities with the communication demands of study projects and selected professional roles. The present review proposes this procedure; it does not report a completed local employer survey.

CLIL offers a possible instructional connection between disciplinary learning and language development. Coyle, Hood, and Marsh describe an approach in which content and an additional language are addressed together [7]. Its significance here is the need to plan both conceptual work and the language required to carry it out. A task about system security needs an explicit technical objective and a communicative objective. Merely assigning a technical text in English would leave the relationship between these objectives underspecified.

The digital dimension requires further specification. DigComp 2.2 presents digital competence through knowledge, skills, and attitudes, including examples related to emerging technologies [8]. UNESCO's guidance on generative artificial intelligence advocates a human-centred approach and draws attention to educational governance and capacity development [9]. These sources justify treating digital participation as more than tool operation. The resulting pedagogical implication is that students should explain the provenance of information, distinguish checked facts from generated suggestions, and remain accountable for professional messages produced with assistance.

Assessment design also requires alignment. Biggs explains constructive alignment as a relationship between intended outcomes, learning activities, and assessment [10]. Its application here is straightforward: if an outcome concerns clarifying a client requirement, assessment must include evidence of clarification rather than only recognition of vocabulary. This principle informs the proposed assessment scheme, although the specific criteria and task examples are developed by the present author.

2. Materials and methods

The study uses a qualitative documentary review with conceptual synthesis. The analytical corpus consists of ten purposively selected sources listed in the references: one Uzbek presidential resolution, a computing curriculum report, a communicative competence article, a language proficiency framework, three language education books, two digital education or competence publications, and an assessment alignment article. Selection prioritised direct relevance, identifiable authorship or institutional



responsibility, and traceable publication information. Official institutional and publisher records were used to verify bibliographic details and the policy document.

This is a bounded narrative review, not a systematic review or meta-analysis. No exhaustive database search, predetermined screening count, or statistical aggregation is claimed. Foundational publications were retained when they supplied concepts needed for the analysis; more recent institutional documents addressed digital participation and curriculum expectations. The corpus provides conceptual coverage rather than representativeness of all research on English for computing students.

The synthesis compared source contributions and translated convergent principles into observable performances. The task designs and component definitions are the author's proposals.

The unit of analysis was a requirement relevant to professional communication, such as audience adaptation, contextualised performance, or verification of information. Requirements were grouped according to the capability they most directly concern. The grouping was checked conceptually against four illustrative situations: a requirements interview, a technical explanation, a support exchange, and a design review. These situations served as design checks rather than observed classroom events. No participants, interviews, experimental groups, or measured learning outcomes were involved.

No independent coding or expert validation was undertaken. The framework therefore requires subsequent empirical examination.

3. Results

3.1. A five-component framework

The synthesis yields five interdependent components. The central result is a distinction between what learners understand about a technical problem, how they express that understanding, how their message fits its audience, how they maintain interaction, and how they evaluate performance. The following definitions translate this distinction into potential evidence. They are proposed analytical categories rather than separate stages of communication.

Professional-cognitive competence concerns understanding the task, its constraints, and the relevant technical relationships. Evidence might include explaining why a proposed data structure satisfies a stated requirement. A persuasive presentation of an infeasible solution would reveal a weakness in this component.

Linguistic-terminological competence concerns precise terminology and intelligible grammatical relationships. Students must distinguish conditions from consequences, describe sequences, and identify responsibility. Errors become especially consequential when they change the technical meaning of an instruction or report.

Discourse-pragmatic competence concerns organising information for a particular recipient and purpose. Evidence includes converting a specialist explanation into an accessible client update while preserving essential meaning. Strategic-interactive



competence concerns clarification, negotiation, repair, and coordination. A student demonstrates it by checking an ambiguous request and confirming an agreed next step.

Reflective-evaluative competence concerns checking evidence and improving communication responsibly. Evidence includes identifying an unsupported claim and explaining a revision. A single design review may reveal all five components. Separating them is useful diagnostically because it helps teachers locate the source of a difficulty rather than describe the whole performance as simply weak English.

3.2. Contemporary curricular requirements

The first requirement is task-based specificity. Learning outcomes should name a professional action, its conditions, and the expected quality of communication. “Know networking vocabulary” can become “explain a simple network failure to a non-specialist using the available evidence and identify the next diagnostic step.” The latter outcome permits instruction and assessment to address the same performance. It also makes clear that fluent delivery cannot compensate for an explanation unsupported by the task information.

The second requirement is movement between audiences and communication modes. Students should practise converting a technical source into an oral briefing, turning a discussion into an action summary, and rewriting an internal note for a client. The challenge is not merely shortening a text. Students must preserve what the recipient needs, explain unfamiliar terms, and state what remains uncertain. This proposed emphasis operationalises mediation for a disciplinary setting without equating mediation with literal translation.

The third requirement is the planned combination of content challenge and language support. Technical difficulty and linguistic difficulty should be considered separately. Students may understand a familiar system but need expressions for comparison or polite disagreement. Alternatively, their English may be sufficient while the technical scenario is unfamiliar. Teachers should diagnose the source of difficulty before simplifying the task. A bilingual planning note, a diagram, or a model clarification question may provide access while preserving meaningful technical reasoning.

The fourth requirement is accountable digital interaction. A message in an issue tracker should make the problem reproducible; an online meeting contribution should help the group reach a shared understanding; and an AI-assisted draft should be checked before it is presented as reliable. In the proposed curriculum, students retain a brief record of the source used, the uncertainty identified, and the correction made. The purpose is to make judgement visible rather than reward the use of a particular platform.

The fifth requirement is inclusive participation. Collaborative tasks should allocate a necessary communicative contribution to every student. Rotating roles can





prevent the most confident speaker from repeatedly representing the entire group. Preparation time, written prompts, and visual information can support participation, while individual follow-up questions show what each learner can independently explain. Accessibility should also influence material selection, including readable diagrams and usable recordings.

Finally, the curriculum should provide repeated opportunities to revise performance. A first attempt reveals a learning need; focused feedback identifies a manageable improvement; a second attempt shows whether the student can act on it. Revision should include both language and professional meaning. Correcting grammar while retaining an inaccurate technical claim would not satisfy the proposed framework.

3.3. A CLIL-oriented instructional sequence

A practical implementation can organise teaching around a small information-system project. The illustrative project proposed here is a university equipment-booking service. Students receive a short client brief, a simple workflow, and a list of constraints. The content objective is to justify a workable allocation of user roles and information flows. The language objective is to clarify requirements and explain the proposed solution to people with different levels of technical knowledge. These materials and interactions are proposed classroom designs, not reported observations.

The sequence begins with interpretation. Learners read the brief, identify missing information, and formulate questions. Next, they negotiate requirements through a role-based interview. They then compare two workflow options and produce a short decision note. In the mediation stage, they explain the selected workflow to a non-technical user. A changed requirement or access problem introduces an additional interaction challenge. Finally, students compare their original and revised explanations and identify specific improvements.

Scaffolding is strongest when learners first encounter an unfamiliar communicative demand. For example, “Could you clarify who is allowed to approve the request?” supports both grammatical formulation and the professional action of resolving ambiguity. As students become more independent, complete sentence models can be replaced by keywords and then removed. The goal is transfer to an unfamiliar case, so support should be reduced according to evidence of independent performance rather than a fixed timetable.

A technically knowledgeable student should still need to communicate to complete the task. Information can therefore be distributed across roles: the client knows the operational problem, the developer knows a design constraint, and the support specialist knows a recurring user difficulty. No participant possesses the whole solution. This creates a reason to listen, ask questions, and reconcile conflicting information. The



teacher monitors whether interaction produces a shared decision rather than simply a sequence of prepared speeches.

The unit can be implemented with printed briefs and face-to-face discussion if digital access is limited. Where suitable facilities exist, a shared document or simulated issue tracker can preserve the communication history. The educational requirement is a purposeful record of decisions and revisions; the platform itself is secondary.

Transfer should be checked by changing one feature of the scenario. For instance, learners might explain the same workflow to a new audience or respond to a request that conflicts with an earlier requirement. Repeating a memorised script would then be insufficient. Successful adaptation would provide initial evidence that students can coordinate content understanding and communication beyond the original practice conditions.

3.4. Assessment and evidence of development

The assessment proposal combines an individual explanation, an interactive task, and a revised written artefact. These formats offer different evidence and reduce dependence on a single polished product. Students should receive the criteria before performing the task. Teachers should evaluate technical adequacy and communicative quality explicitly, so that students understand whether a weakness concerns the proposed solution, the explanation, or both.

Five analytic criteria follow from the framework. Task understanding concerns whether the learner explains a feasible decision using the supplied constraints. Language precision concerns whether terms and grammatical relationships communicate the intended meaning. Audience adaptation and organisation concern whether the recipient receives the necessary detail in a usable sequence. Interaction concerns whether the learner checks understanding and responds to new information. Evaluation concerns whether claims are checked and revisions justified. These criteria are proposed for piloting, not presented as a validated instrument.

A four-level scale can distinguish performance requiring extensive support, performance requiring occasional support, independent performance in a familiar task, and adaptable performance in a changed task. These are local descriptors rather than equivalents of CEFR levels. If an institution uses CEFR targets, it should establish the relationship through suitable descriptor selection and validation rather than label a locally designed rubric “B2” without evidence.

Feedback should be selective and actionable. After a support exchange, a teacher might identify an unclear reproduction step and one missed opportunity to check understanding. Students then revise the message and repeat the exchange with a different problem. Improvement is evidenced by the changed performance, not by a general



statement that the task was useful. A portfolio can retain the original artefact, feedback, revised artefact, and a short explanation of what changed.

For group projects, shared products should be supplemented by individual evidence. A brief oral defence can ask each student to explain a decision, identify a limitation, and respond to a new condition. Where AI tools are permitted, students should account for their final wording and verify its technical claims. Assessment arrangements should state permitted assistance in advance. Independent reasoning and responsible tool use are therefore treated as compatible but separately observable capabilities.

Before high-stakes application, teachers should compare ratings of common sample performances and discuss differences in interpretation. This moderation can reveal vague descriptors or an unintended preference for fluent delivery over accurate meaning. A future validation study should examine agreement between assessors and whether the criteria identify meaningful differences across tasks. Neither reliability nor predictive validity can be inferred solely from the conceptual coherence of the framework.

4. Discussion

The framework's main implication is that professional English should be specified through situated action. A list of technical topics can guide content selection, but cannot alone explain what counts as competent communication. The proposed model connects disciplinary understanding with language form, audience, interaction, and evaluation. It consequently broadens the evidence teachers need: vocabulary tests may reveal knowledge of terms, whereas task performances reveal whether students can mobilise that knowledge for an identifiable purpose.

CLIL is useful within this model when integration is deliberate. An English teacher can help students organise explanations and negotiate meaning, while a subject specialist can help determine whether a task and solution are credible. Joint planning need not involve co-teaching every lesson. A small set of checked scenarios, model artefacts, and agreed assessment criteria could provide a manageable starting point. Feasibility depends on local workload, subject sequencing, and access to specialist consultation; these conditions cannot be assumed to be identical across universities.

Several tensions require attention. Greater authenticity can increase cognitive load, so task realism should be balanced with students' prior knowledge. Collaboration can encourage interaction while concealing individual difficulties, making individual follow-up important. Language support can widen participation but become a dependency if never reduced. Digital assistance can improve a draft while obscuring the learner's contribution. The framework addresses these tensions through staged



difficulty, role rotation, progressive withdrawal of scaffolding, and evidence of revision and explanation.

The findings have clear limitations. The corpus is purposive, the synthesis involves interpretive judgement, and no learner or employer data were collected. The five components may overlap in actual performance, and the proposed rubric has not been tested for inter-rater agreement. Future research should begin with local needs analysis involving students, language teachers, subject teachers, and relevant employers. A subsequent classroom study could compare baseline and final performances using parallel tasks, independent ratings, and qualitative analysis of revisions. It should report contextual conditions and uncertainty rather than attribute every change to CLIL.

5. Conclusion

Contemporary requirements for professional communicative competence in English extend beyond terminology and general fluency. For Information Systems and Technologies students, the proposed priorities are technically meaningful action, precise and audience-sensitive explanation, collaborative negotiation, responsible digital participation, and reflective improvement. A five-component framework and associated task and assessment designs make these priorities operational. The contribution is a reasoned curricular proposal grounded in selected policy and scholarly sources, not a claim of demonstrated intervention effectiveness. Local validation is the next step towards determining how the framework can support sustainable improvement in university English instruction.

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