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CHALLENGES AND STRATEGIES IN DEVELOPING MEDICAL ENGLISH PROFICIENCY AMONG MEDICAL UNIVERSITY STUDENTS

Abstract. *The development of Medical English proficiency has become an important pedagogical issue in medical higher education, especially in non-English-speaking contexts where students are expected to read scientific literature, understand international terminology, participate in academic communication, and communicate professionally in health-related situations. This article analyzes the main problems that medical university students face while learning English and proposes effective strategies for improving their Medical English proficiency. The study is based on a narrative review of research on English for Specific Purposes, English for Medical Purposes, English-medium medical education, digital learning, and AI-supported language instruction. The analysis shows that the most common challenges include complex medical terminology, low or uneven general English proficiency, insufficient speaking and writing practice, limited contextualization of tasks, weak connection between English lessons and medical subjects, and assessment practices that do not always reflect professional communication needs. The article argues that Medical English instruction should be needs-based, context-sensitive, interdisciplinary, communicative, and supported by carefully selected digital tools. It recommends integrating authentic medical texts, clinical role-plays, case-based tasks, terminology training, academic writing practice, blended learning, and responsible AI-supported feedback into the curriculum. The findings may be useful for English language teachers, curriculum designers, and medical universities seeking to modernize foreign language education for future healthcare professionals.*

Keywords: *Medical English; English for Medical Purposes; medical students; ESP; medical terminology; communicative competence; digital learning; AI in education.*

INTRODUCTION

English occupies a special position in modern medical education because it is widely used in research articles, international conferences, academic mobility, postgraduate

study, and professional communication among healthcare specialists. For medical students, English is not only a general foreign language but also a tool for accessing medical knowledge and participating in the global scientific community (Karimnia & Khodashenas, 2018:165; Miao & Holmes, 2023:12). In many non-English-speaking countries, students need English to read textbooks and articles, understand international terminology, prepare presentations, write summaries and abstracts, and communicate in professional contexts (Alanazi & Curle, 2024:2; Nguyen, 2025:1).

The problem, however, is that many medical students enter university with different levels of general English proficiency, while the language demands of medicine are complex and highly specialized. Students may know basic grammar and everyday vocabulary, but still experience difficulty when they encounter terms such as “contraindication,” “intravenous administration,” “differential diagnosis,” or “patient compliance.” These challenges become stronger when English lessons are not connected with students’ medical subjects, clinical cases, or future professional tasks (Hutchinson & Waters, 1987:19; Karimnia & Khodashenas, 2018:168).

English for Medical Purposes (EMP), as a branch of English for Specific Purposes (ESP), should therefore be designed according to students’ real academic and professional needs. ESP theory emphasizes that the content, methods, and assessment of a course should be based on learners’ necessities, lacks, and wants, rather than on a purely general language syllabus (Hutchinson & Waters, 1987:8; Dudley-Evans & St John, 1998:125). In medical universities, this means that English teaching should focus on medical terminology, professional communication, reading of medical literature, case discussion, patient-related language, academic writing, and presentation skills (Basturkmen, 2010:14; Nguyen, 2025:3).

The aim of this article is to identify the main problems of English language learning among medical university students and to propose practical strategies for developing Medical English proficiency. The scientific novelty of the article lies in combining needs-based ESP principles with communicative, interdisciplinary, digital, and responsible AI-supported approaches suitable for medical higher education contexts (Miao & Holmes, 2023:47; Muthukumar et al., 2025:3; Zolfaghari et al., 2025:4).

LITERATURE REVIEW

The theoretical basis of Medical English teaching is closely connected with ESP, which views language teaching as a purposeful activity shaped by the needs of a particular

group of learners. Hutchinson and Waters (1987:19) argue that ESP is not a separate language variety but an approach to language teaching in which decisions about content and method are grounded in the reasons why learners need English. Dudley-Evans and St John (1998:4–5) also emphasize that ESP courses should be related to learners' disciplines and should use tasks that reflect the communicative practices of those disciplines.

Needs analysis is one of the central principles of ESP. In the context of medical education, needs analysis helps teachers determine which skills students need most: reading medical texts, understanding lectures, writing case summaries, speaking in clinical discussions, or presenting research findings. Research on medical students' English needs shows that students often value reading and vocabulary for academic purposes but also want more speaking, listening, and communication practice because these skills are necessary for future professional interaction (Karimnia & Khodashenas, 2018:170).

Recent studies on English-medium instruction and medical education demonstrate that students commonly face difficulties in reading medical materials, understanding lectures delivered in English, giving presentations, speaking fluently, and writing for academic or medical purposes. Alanazi and Curle (2024:5) found that medical students studying through English experienced linguistic challenges connected with lecture comprehension, oral communication, reading, and writing, especially in the early years of study. These findings are relevant for EMP classes because they show that language support must be systematic and continuous, not limited to one or two general English courses.

Medical English teaching also requires attention to terminology. Medical vocabulary is complex because it includes Greek and Latin roots, abbreviations, eponyms, compound terms, and similar-sounding words. Nguyen's review of EMP teaching identifies complex terminology, limited contextual practice, and insufficient teacher preparation as key challenges, while recommending needs-based curriculum design, morphological analysis, role-plays, simulations, and interdisciplinary collaboration (Nguyen, 2025:6–8).

Digital and AI-supported tools are increasingly important in language education and medical education. A structured web-based EMP course reported by Muthukumar et al. (2025:8) showed improvements in students' medical English proficiency across listening, reading, writing, and speaking, and students valued the convenience and clarity of online learning. At the same time, Miao and Holmes (2023:44) stress that generative

AI in education should be used within a human-centered, ethical, and pedagogically appropriate framework, with attention to data privacy, accuracy, bias, and teacher guidance. Therefore, digital tools should support the teacher's pedagogical aim rather than replace professional instruction.

METHODS

This article uses a narrative literature review and pedagogical analysis as its methodological basis. The reviewed sources include theoretical works on ESP and English for Academic Purposes, empirical studies on medical students' English language needs, studies on English-medium medical education, and recent publications on web-based, gamified, and AI-supported language learning (Alanazi & Curle, 2024; Dudley-Evans & St John, 1998; Hutchinson & Waters, 1987; Muthukumar et al., 2025; Zolfaghari et al., 2025).

The analysis was conducted in three stages. First, the main language-learning problems reported in previous studies were identified and grouped into thematic categories: terminology, general proficiency, communicative practice, curriculum relevance, teacher preparation, assessment, and digital integration. Second, these problems were compared with the typical needs of medical university students in non-English-speaking contexts. Third, practical strategies were synthesized from ESP theory, communicative language teaching, blended learning, and responsible AI use (Basturkmen, 2010:22; Miao & Holmes, 2023:47; Richards, 2006:14). The article does not present original survey data; rather, it offers an analytical and practical framework that can be used by English teachers and curriculum designers.

RESULTS AND DISCUSSION

Major problems in learning Medical English. The first major problem is terminological complexity. Medical students must learn not only general English words but also specialized terms connected with anatomy, physiology, pharmacology, pathology, diagnosis, treatment, and clinical communication. Without systematic instruction in word formation, roots, prefixes, suffixes, pronunciation, and collocations, students often memorize isolated words without understanding how terms function in real medical discourse (Nguyen, 2025:6; Tomlinson, 2011:43).

The second problem is uneven general English proficiency. In one group, some students may read texts confidently while others struggle with basic grammar, pronunciation, or listening comprehension. Research on medical students' language needs shows that students' perceived abilities and professional needs are not always balanced; they may need speaking and communication but have limited confidence in those areas (Karimnia & Khodashenas, 2018:172).

The third problem is the dominance of passive learning. In many classes, students read and translate medical texts but do not sufficiently practice speaking, writing, role-play, discussion, debates, or problem solving. Medical students need to use English actively: to ask questions, explain symptoms, summarize a case, describe medication forms, give instructions, and present medical information clearly (Alanazi & Curle, 2024:8; Richards, 2006:21).

The fourth problem is insufficient connection between English lessons and medical subjects. When English lessons are based only on general topics, students may not see a direct link between language learning and their future profession. EMP courses become more meaningful when they include topics such as symptoms, first aid, medication, doctor-patient communication, medical ethics, healthy lifestyle, diseases, diagnostics, and public health (Basturkmen, 2010:38; Nguyen, 2025:9).

The fifth problem is limited collaboration between English teachers and medical specialists. English teachers are experts in language pedagogy, but they may need support in selecting medically accurate content and authentic professional situations. Joint planning can improve the relevance, accuracy, and professional value of EMP materials (Nguyen, 2025:10; Zolfaghari et al., 2025:7).

The sixth problem concerns assessment. Traditional grammar tests or vocabulary translation tasks do not fully measure whether students can use English in medical academic or professional situations. Assessment should include reading comprehension of medical texts, terminology use in context, oral explanations, mini-presentations, patient-instruction dialogues, case summaries, and reflective learning portfolios (Hyland, 2006:67; Richards, 2006:31).

Effective strategies for improving Medical English proficiency. The first strategy is systematic needs analysis. At the beginning of a course, teachers should identify

students' current level, target needs, weak skills, learning preferences, and professional expectations through questionnaires, diagnostic tests, short interviews, observation, and analysis of medical curricula (Hutchinson & Waters, 1987:54; Karimnia & Khodashenas, 2018:174).

The second strategy is teaching terminology through structure and context. Instead of asking students to memorize long lists of words, teachers can introduce roots, prefixes, suffixes, word families, collocations, abbreviations, and pronunciation patterns. Students can analyze terms such as “hypoglycemia,” “hypertension,” “intramuscular injection,” and “antibiotic resistance” by breaking them into meaningful parts and then using them in sentences, dialogues, and case descriptions (Nguyen, 2025:12; Tomlinson, 2011:57).

The third strategy is integrating all four skills around medical themes. A lesson on “medication,” for example, may include reading a short text about dosage forms, listening to a doctor’s instruction, practicing vocabulary for tablets, capsules, syrups, injections, ointments, and sprays, writing short patient instructions, and role-playing a pharmacist-patient conversation. Such integration helps students understand that reading, writing, listening, and speaking are connected in professional communication (Basturkmen, 2010:44; Richards, 2006:27).

The fourth strategy is case-based and simulation-based learning. Medical students usually respond well to practical tasks because they reflect real professional situations. Teachers can use short case scenarios, emergency instructions, symptom descriptions, medical histories, or consultation dialogues. Students may work in pairs or groups to identify key vocabulary, ask questions, explain a problem, give advice, or present a diagnosis-related explanation in simple English (Alanazi & Curle, 2024:9; Nguyen, 2025:13).

The fifth strategy is using digital and AI-supported tools responsibly. Digital platforms can provide vocabulary quizzes, listening practice, interactive flashcards, pronunciation feedback, and self-paced reading tasks. AI tools can help generate controlled practice materials, simplify complex texts, provide examples of medical dialogues, and give feedback on grammar or clarity. However, AI-generated content must always be checked by the teacher for accuracy, ethics, appropriateness, and alignment with learning objectives (Miao & Holmes, 2023:44–47; Muthukumar et al., 2025:10).

The sixth strategy is interdisciplinary cooperation. English teachers can collaborate with medical subject teachers to design short modules, select authentic texts, verify terminology, and create clinical communication tasks. This cooperation makes English lessons more professionally relevant and helps students understand that language is part of medical competence, not an isolated subject (Nguyen, 2025:14; Zolfaghari et al., 2025:9).

Table 1. Main problems and improvement strategies in Medical English instruction

Problem	Pedagogical reason	Recommended strategy	Expected result
Complex terminology	Terms are long, abstract, and often derived from Greek and Latin roots.	Teach roots, prefixes, suffixes, collocations, and pronunciation in context.	Better vocabulary retention and more accurate professional language use.
Uneven English level	Students enter university with different grammar, reading, listening, and speaking abilities.	Use diagnostic assessment, differentiated tasks, pair work, and scaffolded materials.	More inclusive learning and gradual progress for all students.
Passive learning habits	Reading and translation dominate, while communication is limited.	Add role-plays, discussions, case summaries, and oral micro-presentations.	Improved fluency, confidence, and communicative competence.
Weak link with medicine	General topics do not always match students' academic and professional needs.	Organize lessons around medical themes such as symptoms, medication, first aid, and public health.	Higher motivation and clearer professional relevance.
Limited teacher collaboration	Language teachers may need medically accurate content support.	Plan modules together with medical subject teachers and verify terminology.	More authentic, accurate, and interdisciplinary EMP materials.
Traditional assessment	Grammar-only tests do not measure professional language performance.	Use portfolios, case-based speaking, reading tasks, and short writing tasks.	Assessment becomes closer to real academic and professional communication.
Uncontrolled digital use	Students may rely on unverified online or AI-generated answers.	Teach responsible AI use, source checking, and academic integrity.	Improved autonomy, digital literacy, and ethical learning behavior.

PRACTICAL RECOMMENDATIONS

Medical universities should revise English language courses according to a clear EMP model. The curriculum may be organized into thematic modules such as “Human body and anatomy,” “Symptoms and diseases,” “Medication and dosage forms,” “Emergency instructions,” “Doctor-patient communication,” “Medical research articles,”

and “Conference presentation skills.” Each module should include terminology, grammar in context, reading, listening, speaking, writing, and assessment tasks connected with the same professional theme (Basturkmen, 2010:48; Dudley-Evans & St John, 1998:183; Nguyen, 2025:15).

Teachers should also build students’ academic reading skills. Medical students often need to read abstracts, case reports, drug instructions, textbook chapters, and research articles. Lessons should include skimming, scanning, identifying main ideas, recognizing definitions, interpreting tables, and summarizing information (Hyland, 2006:72; Karimnia & Khodashenas, 2018:176). Speaking and writing should receive more attention; students can practice explaining symptoms, asking patient-history questions, describing procedures, giving medication instructions, summarizing clinical cases, and presenting mini-research topics (Alanazi & Curle, 2024:11; Hyland, 2006:89).

Responsible digital learning should be included as a support mechanism. Learning management systems, online quizzes, pronunciation tools, electronic glossaries, and teacher-guided AI activities can increase practice opportunities beyond the classroom. Nevertheless, digital tools should not be used only for entertainment; they should be linked with learning outcomes, feedback, and assessment (Miao & Holmes, 2023:50; Muthukumar et al., 2025:12; World Health Organization, 2021:18). Professional development for English teachers is essential: teachers need training in ESP methodology, medical terminology, digital pedagogy, AI literacy, assessment design, and collaboration with subject specialists (Miao & Holmes, 2023:52; Nguyen, 2025:16; Zolfaghari et al., 2025:11).

CONCLUSION

Medical English proficiency is a necessary component of professional preparation for future healthcare specialists. The analysis shows that medical students face several interconnected problems: difficult terminology, unequal general English levels, lack of communicative practice, weak connection between language lessons and medical subjects, insufficient interdisciplinary cooperation, traditional assessment, and uncontrolled use of digital resources. These problems cannot be solved by increasing vocabulary memorization alone; they require a systematic pedagogical approach (Hutchinson & Waters, 1987:8; Nguyen, 2025:17).

The most effective way to improve Medical English proficiency is to design EMP courses according to students' real academic and professional needs. Such courses should combine terminology training, authentic medical texts, integrated skills practice, case-based tasks, role-plays, academic writing, presentations, digital learning, and responsible AI-supported activities. Medical English should be taught as a practical professional skill that supports students' medical education, scientific development, and future communication in healthcare settings (Dudley-Evans & St John, 1998:189; Muthukumar et al., 2025:14; Zolfaghari et al., 2025:12).

In conclusion, improving Medical English education requires cooperation among English teachers, medical specialists, curriculum designers, and university administrators. When English lessons are professionally relevant, communicative, interactive, and technologically supported, medical students are more likely to develop the language competence needed for academic success, lifelong learning, and participation in the global medical community.

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