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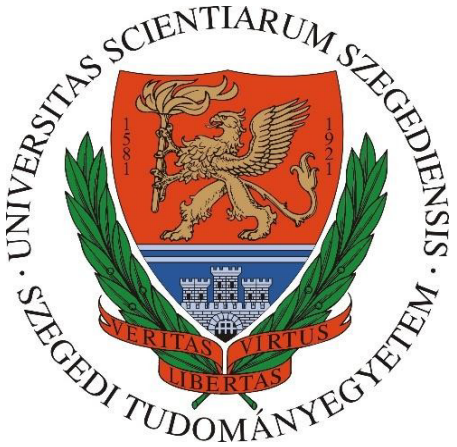

Learning and Teaching English for Medical Purposes in Hungary: Investigating Student Motivation and Teacher Perspectives

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PhD Dissertation

Supervisor:
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Andrea Stötzer
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LIST OF ABBREVIATIONS AND ACRONYMS

This list presents the abbreviations and acronyms most frequently used throughout the dissertation. Additional abbreviations and acronyms specific to individual studies are defined in the respective Chapters.

ANOVA	Analysis of Variance
CFA	Confirmatory Factor Analysis
CLIL	Content and Language Integrated Learning
EAP	English for Academic Purposes
EFA	Exploratory Factor Analysis
EFL	English as a Foreign Language
EGP	English for General Purposes
EHEA	European Higher Education Area
EMI	English-Medium Instruction
EMP	English for Medical Purposes
ERPP	English for Research Publication Purposes
ESL	English as a Second Language
ESP	English for Specific Purposes
GLM	General Linear Model
HEI	Higher Education Institution
HMI	Hungarian as the Medium of Instruction
ILE	Intended Learning Effort
KMO	Kaiser–Meyer–Olkin
KWT	Kruskal–Wallis test
L2	Second Language
L2MSS	Second Language Motivational Self System
LGP	Languages for General Purposes
LSP	Languages for Specific Purposes
MCT	Monte Carlo Test
PCA	Principal Component Analysis
Q–Q plot	Quantile–Quantile plot
RAs	Reliability Analyses
RO	Research Objective
RQ	Research Question
SLA	Second Language Acquisition
SPSS	Statistical Package for Social Science

LIST OF TABLES[1]

[1] The tables and figures specifically created for this dissertation have labels containing the letter *D*. The numbering and titles of all tables and figures belonging to the published articles appear exactly as in the original publications.

CHAPTER FIVE: Study 4

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[2] The tables and figures specifically created for this dissertation have labels containing the letter D. The numbering and titles of all tables and figures belonging to the published articles appear exactly as in the original publications.

CHAPTER ONE
Introduction

1.1 Objectives of the dissertation

This dissertation aims to advance our understanding of English for Medical Purposes (EMP) instruction by examining both learner and teacher perspectives within the Hungarian higher education context. The overarching objective is to investigate how motivation to learn EMP can be conceptualized, measured, and supported more effectively. In doing so, the dissertation seeks to contribute to both theory-building and pedagogical practice in the field of EMP. To this end, the specific objectives of the dissertation are as follows:

1. To clarify the conceptual boundaries of EMP and establish its relevance as a distinct subfield within ESP.
2. To validate an adapted, theory-driven questionnaire based on Dörnyei's L2 Motivational Self System (L2MSS) (Dörnyei, 2005, 2009), contextualized for use with Hungarian medical students learning EMP.
3. To analyze the motivational profiles of medical students in non-English-medium instruction (non-EMI) settings and identify the factors that influence their intended learning effort.
4. To examine the professional characteristics and institutional positioning of EMP instructors, with special attention to their career trajectories, qualifications, challenges, and professional identity.
5. To compare and contrast student and teacher perceptions of the most significant motivational drivers and barriers in EMP learning, in order to uncover potential misalignments and shared insights.

Through these objectives, the dissertation adopts a dual-lens approach that highlights the interplay between student motivation and teacher agency, addressing long-standing gaps in the EMP literature and offering context-sensitive recommendations for improving EMP instruction.

1.2 Structure and rationale of the dissertation

This dissertation follows a study-based format[3] (also referred to as an article-based dissertation or compilation thesis) (Creswell & Gutterman, 2024; Gustavii, 2012). It consists of five peer-reviewed journal articles (see Table D1).

Table D1 Summary table of the published studies included in the dissertation

	Reference (APA 7)	Type	SJR	In-text citation
Study 1 MTMT	Stötzer, A., & Farkas, É. (2024). ContEMPorary matter: Updating our understanding of English for Medical Purposes. *Journal of Teaching English for Specific and Academic Purposes*, *12*(3), 741–754. https://doi.org/10.22190/JTESAP241006055S	Narrative literature review	***Education*** **Q3**	Stötzer & Farkas, 2024

[3] Throughout the dissertation, American English spelling conventions have been applied consistently, as all published studies (with the exception of Study 4, which required UK spelling in accordance with the journal's guidelines) use US spelling.

	Reference (APA 7)	Type	SJR	In-text citation
Study 2 MTMT	Stötzer, A., Farkas, E., & Bagyura, M. (2025). From theory to instrument: Developing an L2 motivational self system-inspired questionnaire. *Educational Process: International Journal*, *16*, e2025252. https://doi.org/10.22521/edupij.2025.16.252	Original research	***Education*** **Q2**	Stötzer et al., 2025c
Study 3 MTMT	Stötzer, A., Bagyura, M., & Farkas, É. (2026). Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes. *Educational Process: International Journal, 20*, e2026001. https://doi.org/10.22521/edupij.2026.20.1	Original research	***Education*** **Q2**	Stötzer et al., 2026
Study 4 MTMT	Stötzer, A., Bagyura, M., & Farkas, É. (2025). Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary. *English Teaching & Learning*, *49*(4), 889–915. https://doi.org/10.1007/s42321-025-00207-1	Original research	***Education*** **Q2** *Linguistics and Language* Q1	Stötzer et al., 2025b
Study 5 MTMT	Stötzer, A., Bagyura, M., & Farkas, É. (2025). Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers. *Social Sciences & Humanities Open, 12*, 102024. https://doi.org/10.1016/j.ssaho.2025.102024	Original research	***Social Sciences*** **Q1** *Decision Sciences* Q2 *Psychology* Q2	Stötzer et al., 2025a

The studies collectively explore various dimensions of learning and teaching EMP within the context of Hungarian higher education, each addressing a distinct yet thematically connected aspect of the field. The logical flow and conceptual arc of the research are described in detail in Section 1.9, below.

One of the key reasons for adopting a study-based format was the importance of disseminating research findings as widely and effectively as possible (see Table DA.3 in Appendix K for conference presentations). In a developing and still underrepresented field such as English for Specific Purposes (ESP), especially within the context of medical education, visibility and accessibility are crucial. Publishing the results as individual journal articles ensured that each study could reach both international scholarly audiences and practitioner communities. This approach also allowed the findings to inform ongoing academic discussions and curriculum development processes while the broader research project was still underway. In this sense, the compilation format served not only as a means of structuring the dissertation but also as a strategic choice to maximize the impact and relevance of the research.

To that end, the following sections outline the broader educational and institutional landscape in which EMP is taught and clarify the key conceptual frameworks (Sections 1.3, 1.4 and 1.5), providing the necessary background for interpreting the structure and logic of this dissertation. It is within this context that the main research questions (Section 1.6) first took shape, serving as the foundation for the empirical studies included in this dissertation. Following the discussion of the contextual background and the articulation of the main research questions, we highlight the scholarly and practical relevance of our research (Section 1.7). It is followed by a dedicated methodological section (Section 1.8) which outlines the overall research design, including the narrative literature review, the development and validation of

student and teacher questionnaires, and the comparative analyses of motivational drivers and barriers. Then, the logic of inclusion and the thematic interconnections between the five articles will be discussed in detail, followed by concise summaries of each study within this introductory part of the dissertation (Section 1.9). Subsequently, the full-text versions of the five peer-reviewed articles are presented as stand-alone chapters (Chapter Two to Chapter Six). As all papers were published in open access journals, they are included in the dissertation without modification. They are presented in their original content and in a format that closely resembles the versions appearing in the respective journals. Accordingly, they do not necessarily adhere to the stylistic or formatting conventions of the APA 7th edition throughout. Spelling variations likewise reflect the editorial requirements of the journals in which the articles were published (British or American English) and have been retained to preserve the authenticity of the original publications. The dissertation concludes with a synthesis of key findings, a critical discussion of their implications, and reflective observations that bind the individual studies into a unified scholarly narrative (Chapter Seven). The appendices (Appendix A to Appendix K) constitute an integral part of the dissertation, providing supplementary materials that support the transparency, reproducibility, and contextual understanding of the research. These include summary tables presenting the research design and methodology applied across the five studies and the main research questions alongside their corresponding findings (Table DA.1 and Table DA.2, as well as a visual summary of the overall EMP research project (Figure DA.1), all included in Appendix A; the full versions of the student and teacher questionnaires (Appendices B–E), and the ethical approval issued by the Doctoral School of Education (Appendix F). Further supporting documentation is provided, including the Author Declaration (Appendix G), co-author consent statement, the AI use statement, and a list of related publications and conference presentations (Appendices H–K).

1.3 What is English for Medical Purposes?

English for Medical Purposes (EMP) is a branch of English for Specific Purposes (ESP) that focuses on the linguistic and communicative needs of healthcare professionals, medical students, and others working in medical and health-related fields. As such, it encompasses not only the acquisition of specialized medical vocabulary, but also the development of communication skills essential for professional interactions, including patient communication, interprofessional collaboration, academic discourse, and engagement with medical literature (Baethge, 2008; Maher, 1986, 1987; Tweedie & Johnson, 2022).

In the literature, the target audience of EMP is diverse, encompassing a wide range of non-Anglophone learners whose professional or academic activities are situated within the field of healthcare. These include undergraduate students of medicine, dentistry and pharmacy as well as other health science majors who require specialized English language skills to succeed in their studies and future clinical and professional practice (Sarré & Whyte, 2016). In addition, postgraduate medical professionals (such as physicians, pharmacists, physiotherapists, and nurses) often seek EMP instruction to enhance their ability to communicate in international medical settings, participate in conferences, read and publish research articles, or engage with patients in multilingual environments. Another important group consists of individuals working in medical administration, clinical research, or medical translation and interpreting, whose roles demand high-level proficiency in medical English. The specific needs and motivations of EMP

learners therefore vary widely, but they share a common goal: to acquire the linguistic and communicative competence necessary for effective functioning within professional medical/healthcare contexts.

In the present study, we use the term 'English for Medical Purposes' (EMP) in its narrower, discipline-specific sense, referring specifically to EMP instruction among (typically undergraduate) medical students. As discussed in Study 1 (Stötzer & Farkas, 2024), the term 'EMP' is often employed broadly in the literature; however, this broader application risks obscuring important distinctions between different professional groups within the health sciences. When subspecialties such as dentistry, pharmacy, physiotherapy, or nursing are also included, the more appropriate and inclusive term would be English for Health Sciences Purposes (EHSP). This terminological differentiation is essential, as the linguistic needs, terminology, learning contexts, and expected communicative competences may vary significantly across health professions. While certain findings from the present study may hold relevance for the related fields, others may not be readily transferable. Accordingly, our research was limited to medical students in Hungarian-language undergraduate programs, and our interpretation of EMP aligns with this target group.

Both in Hungary and in international contexts (in non-Anglophone countries), teaching EMP is typically carried out by language professionals with a background in English language teaching, applied linguistics, or translation studies (Jurkovič et al., 2024; Szymańska-Tworek & Makowska-Songin, 2019; Vega Umaña, 2020). In most cases, these educators are trained teachers of English as a foreign or second language (EFL/ESL) who have not specialized formally in the medical profession. While some may possess degrees or certificates related to the healthcare domain, it is more common for EMP teachers to develop their expertise through self-directed learning. Given the interdisciplinary nature of the field, EMP instruction requires not only pedagogical skills but also a working knowledge of medical discourse, communication norms in healthcare settings, and domain-specific terminology. As a result, EMP teachers often operate in a space that bridges language education and medical communication, navigating both linguistic and content-related challenges in the classroom.

1.4 Teaching and learning Languages for Specific Purposes in Hungary

As globalization and international academic mobility have intensified, the need for discipline-specific language instruction has become more pronounced across a wide range of fields, including business, law, science, engineering, and medicine. As university-level language instruction has gradually shifted from general English towards more specialized, discipline-specific varieties (Einhorn, 2022; Hyland, 2022; Supunya, 2023), Languages for Specific Purposes (LSP), including and especially ESP, seem to be gaining an increasingly significant role in Hungarian higher education in recent years. LSP instruction in Hungary typically takes place in university settings, where elective or compulsory courses are offered as part of undergraduate programs.

The Program and Outcome Requirements (KKK in Hungarian) of General Medicine programs in Hungary, as stipulated in Section 16/A of Act CCIV of 2011 on National Higher Education, are officially issued by the minister responsible for higher education and are binding for all higher education institutions. Nevertheless, the individual universities have autonomy in developing their curricula. At the time of our research project, including both the pilot (2022)

and main study (2024) phases, institutional implementation of the KKK requirement – namely, that graduates be able to communicate their medical knowledge effectively in foreign-language environments – varied considerably across Hungary's four medical schools. In practice, this resulted in divergent approaches: two institutions (Semmelweis University and the University of Pécs) required students to pass a medical language exam as part of graduation requirements, whereas the other two (the University of Debrecen and the University of Szeged) did not. Furthermore, although elective courses in English or German for Medical Purposes were offered at the latter institutions, it was, for example at the University of Szeged, possible to complete the medical degree without taking any language or medical language courses at all.

Recent legislative changes in Hungary (Act LIX of 2022 contains provisions that amend Act CCIV of 2011 on National Higher Education[4]) have further strengthened the role of LSP instruction, requiring institutions to provide students with opportunities to develop LSP competencies. As a result, there is growing demand for LSP (predominantly ESP) courses that go beyond general language proficiency and equip learners with the communicative tools necessary for specialized academic and workplace contexts.

While LSP courses are now more institutionally embedded (partly as a result of regulatory mandates), the status of LSP instructors remains poorly defined. In the Hungarian higher education system, there is currently no officially recognized position or job title for "LSP teacher". Most LSP instructors are employed under the general category of language teachers[5] (often with teaching loads equivalent to those of secondary school language teachers, even though LSP instruction demands a markedly different and more time-intensive set of competencies). Others seek to enhance their professional legitimacy by pursuing academic advancement, typically through doctoral studies and research activities. Despite the lack of formal recognition, the representatives of this "profession" have a self-organized community: the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes[6] (SZOKOE), established in 2003, offering a professional forum for LSP practitioners, facilitating research dissemination, and fostering dialogue within the field.

This paradox (where LSP instruction is increasingly expected to be provided at a high level, yet the instructors themselves operate in a structurally underdefined role) raises important questions about professional identity, institutional recognition, and long-term sustainability. These tensions underline the importance of continued research and dialogue on LSP education and LSP teacher development in Hungary and beyond.

[4] Original Hungarian text of the amendment: 2022. évi LIX. törvény egyes felsőoktatással, szakképzéssel és felnőttképzéssel összefüggő törvények módosításáról - 7. A nemzeti felsőoktatásról szóló 2011. évi CCIV. törvény módosítása - 37. § Az Nftv. a következő 49/A. §-sal egészül ki: „49/A. § A felsőoktatási intézmény gondoskodik az […] idegen szaknyelvi ismeretek oktatásáról, […] biztosítja […], hogy a hallgató megszerezhesse a […] szakképzettség gyakorlásához szükséges idegen szaknyelvi ismereteket. A felsőoktatási intézmény […] biztosítja a tudásmérés lehetőségét a hallgató részére és értékeli az idegen szaknyelvi ismeretek megszerzését. A felsőoktatási intézmény a tantervben meghatározhat az idegen szaknyelvi ismeretként elfogadható államilag elismert nyelvvizsgát vagy más nyelvtudásmérést."

[5] Under the current provisions of the Hungarian Act on Higher Education (Act CCIV of 2011 on National Higher Education), language teachers working within universities are not formally recognized as academic staff or university instructors in the full legal sense.

[6] For the English site of the Association, see http://szokoe.hu/?lang=en

1.5 How to capture motivation in learning English for Medical Purposes?

This section serves a dual purpose. First, it provides a brief overview of how motivation is conceptualized in the broader field of language learning research. Second, it highlights those aspects of motivation that are particularly relevant in the context of EMP, where learning goals, learning conditions, and professional trajectories differ in important ways from those associated with English for General Purposes (EGP). By establishing this conceptual foundation, the section prepares the ground for the subsequent discussion of motivation frameworks that are later operationalized in the empirical studies included in the dissertation.

1.5.1 Motivation in language learning

Language learning motivation is an intensively researched area (Lamb, 2017); however, teaching and learning ESP (including EMP) is largely different from teaching and learning EGP in several ways. If we accept that learning (and teaching, as a matter of fact) ESP (especially EMP) is different from learning (and teaching) EGP in many aspects, we can assume that there may be some motivational factors that are more relevant in learning ESP/EMP, and the exploration of these factors may be beneficial to language learners and language teachers alike.

The 1990s saw the emergence of a new generation in the research of language learning motivation represented by, among others, many outstanding Hungarian researchers such as Zoltán Dörnyei, Marianne Nikolov, Judit Kormos, and Kata Csizér. The research on language learning motivation is multidisciplinary, i.e. researchers take into account the perspectives and findings of the most important disciplines: biology, physiology, psychology, pedagogy, sociology, and ethics. As Hutchinson and Waters (1987, p. 48) point out, motivation is a complex and highly individual matter. In the literature, the following two definitions are frequently cited – Dörnyei and Ottó's definition of second language (L2) motivation (Dörnyei & Ottó, 1998, p. 65):

> "In a general sense, motivation can be defined as the dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized and (successfully or unsuccessfully) acted out".

Pintrich and Schunk (2002, p. 5) define motivation as "the process whereby goal-directed activity is instigated and sustained". The two definitions share the word 'process', which gains importance if we look at Dörnyei's (2005, pp. 66−67) three phases of L2 motivation research, where the third stage is labelled as the 'process-oriented period' which is characterized by an interest in motivational change. According to Al-Hoorie (2017), the new emerging themes of language motivation include the dynamic, affective, unconscious and long-term aspects of motivation to learn languages.

According to Dörnyei (2005, p. 76), Self-Determination Theory (SDT) has been "one of the most influential approaches in motivational psychology, and several attempts have been made in the L2 field to incorporate certain elements of the theory to explain L2 motivation". Deci and Ryan's SDT (Ryan & Deci, 2017) focuses on various types of intrinsic and extrinsic motives. Brown (1994) emphasizes the importance of intrinsic motivation in language learning. Intrinsic motivation is self-rewarding, i.e. we are doing something because it is inherently interesting or enjoyable (Ryan & Deci, 2000). On the other hand, in the classic case of extrinsic motivation, one is propelled (coerced, seduced, pressured) to act. According to Ryan and Deci

(2017), the intrinsic-extrinsic 'dichotomy' should be seen rather as a continuum (also as the autonomy–control continuum). Furthermore, extrinsically motivated behaviors can vary widely in the extent to which they are controlled versus autonomous (Ryan & Deci, 2017). Thus, we can assume that some of the medical students may have internalized and integrated the idea and importance of learning EMP even if they were required to take an EMP exam, while for some of the students, the exam certainly will appear as an external coercive factor. On the other hand, for some of the presumably 'intrinsically-driven' students, other factors may also prevail as external regulation (e.g. strong parental guidance or expectations).

Pavel (2020) in her study carried out in Romania, also aimed to explore the motivation of tertiary students (in the healthcare domain) to learn EMP/ESP. Her questionnaire included questions on motivation and learning strategy (based on Oxford's taxonomy; Oxford, 1990). One of Pavel's hypotheses was that medical students are strongly motivated to learn EMP, mainly in the hope of working abroad. Therefore, she assumed that extrinsic motivation would be the main factor in the language learning process. At the same time, she acknowledged that, based on her personal experience, language learners are enthusiastic about attending language classes and willing to take on extracurricular tasks – all of which go well beyond extrinsic motivation. To her surprise, the students scored higher on intrinsic motivation than on extrinsic motivation.

1.5.2 Integrative and instrumental motivation

Integrative and instrumental motivation/orientation/attitude are also frequently used in motivation research. The term integrativeness was created by Gardner and Lambert (1959, 1972). This component of language learning was meant to describe one's interest in language learning in order to interact with valued members of the other community (Gardner was originally inspired by the Canadian bilingual context) (Gardner, 2001, p. 1). According to Brown (1994), a distinction should be made between integrative and instrumental orientations, and we should not use the word 'motivation' instead of 'orientation'. "Orientation means a context or purpose for learning; motivation refers to the intensity of one's impetus to learn" (Brown, 1994, p. 75). Brown also points out that the dichotomy of instrumental and integrative orientations cannot be confused with extrinsic and intrinsic motivation.

Csizér and Kormos (2007) define integrative orientation as a means of identifying with a given language, the speakers of the language, and their culture. The extent of integrative orientation indicates how much energy students are willing to invest in language learning (Csizér & Kormos, 2007, pp. 2–3). Instrumental orientation is characterized by external factors such as obtaining a degree, earning more money, or having a better job. In such a case, language is more like a 'tool' in the hands of the language learner in possession of which they can achieve their personal or professional goals. This aspect of language learning is clearly present in learning EMP. At the same time, this type of motivation can also positively affect language learning (Gardner & MacIntyre, 1991). Csizér and Kormos (2007) ask how integrative motivation can be interpreted in Hungary, where intercultural contact is not an issue. An answer is provided by Dörnyei, who says that by learning English, the learners' goal is no longer to identify themselves with a particular target language culture but to become a "cosmopolitan citizen of the world" who can make themselves understood (Csizér & Dörnyei, 2005). In the context of EMP, integrative motivation could describe the motivation (drive) of the language

learner or language user to become a member of an international medical discourse community: either as a reader of medical articles published in international journals, or as an author of such articles, or as a lecturer at the university teaching international students, or as a physician working at/attending a conference abroad. This concept is supported by the research of Tomak and Šendula-Pavelić (2017) from the University of Rijeka, Croatia. In the research of Csizér and Kormos (2007), integrative and instrumental motivation are no longer seen as mutually exclusive but as mutually reinforcing concepts (Dettai, 2019). The picture is further nuanced by the recognition that motivation is not a fixed but a dynamic and constantly changing construct, and as a result, language learning motivation needs to be examined as a process (Csizér & Dörnyei, 2005; Dörnyei & Ottó, 1998; Kormos & Csizér, 2005; Szaszkó, 2020; Ushioda, 2001).

1.5.3 Dörnyei's L2 Motivational Self-System and the concept of 'engagement'

It was Dörnyei who fused second language learning (L2) motivation with the psychological theories of the self. One of the most effective methods of modern mainstream psychology is the theory of possible selves[7], which attempts to link the human self with human action (Dörnyei & Ushioda, 2011, p. 80), and examine their interaction (Szaszkó, 2020). Dörnyei's L2 Motivational Self-System (L2MSS) posits (Dörnyei, 2013, p. 13) that there are three primary sources of the motivation to learn a foreign/second language: "(a) the learner's vision of oneself as an effective L2 speaker, (b) the social pressure coming from the learner's environment and (c) positive learning experiences". Accordingly, EMP learners/medical students visualize themselves as effective language speakers in the future: they imagine how they will perform, communicate, and write in English as fully-fledged physicians/researchers. As stated in Dörnyei's (2005) theory of L2MSS, language learners' motivation is directly influenced by three factors: (1) the students' 'ideal L2 self', i.e. to what extent they can see/visualize themselves as they are using the foreign language at a high level in the future; (2) the students' 'ought-to L2 self', i.e. "the attributes that one believes one ought to possess to meet expectations and to avoid possible negative outcomes" (Dörnyei, 2009, p. 29); (3) last but not least, students' motivation is also shaped by their language learning experiences (Csizér, 2012, 2019). According to Csizér (2020), in the case of secondary school students, the latter, i.e. the effect of language learning experiences, is stronger than the effect of the ideal L2 self. As Csizér (2020) has pointed out, in the case of university students, the effect of these two factors seems to be equal, and in the case of adult language learners who were examined as a separate category, the effect of the ideal L2 self has been found stronger than that of language learning experiences.

Takahashi and Im (2020) conducted an empirical comparison of Deci and Ryan's SDT (1985) and Dörnyei's L2MSS examining their respective predictive power in relation to L2 achievement. Their findings suggest that internalized motivation is a strong predictor of intended learning effort, which in turn contributes to L2 proficiency (Takahashi & Im, 2020, p. 691). Notably, they found that the influence of the ideal L2 self was considerably weaker than that of the learners' prior L2 learning experience (this latter contradicts what is originally argued in the theory).

[7] "*Possible selves* are visions of the self in a future state; they represent the individuals' ideas of what they might become, what they would like to become, and what they are afraid of becoming" (Markus & Nurius, 1986).

The interest in understanding language learning motivation is not only theoretical but also fundamentally pedagogical. A more fine-grained understanding of learners' motivational dispositions enables the design of more effective and responsive language instruction, as it sheds light on why learners invest effort, how they envision their future language use, and what factors sustain or undermine their commitment to learning. At the same time, it is widely acknowledged that language learning motivation is shaped by a multitude of individual, social, and contextual factors, many of which lie beyond the direct influence of teachers. What educators can meaningfully influence, however, is the degree and quality of learners' engagement in the learning process. While motivation explains why learners intend to learn a language, engagement captures how this intention is translated into sustained action, participation, and effort within the learning process (Mercer & Dörnyei 2020). Student engagement has become a central focus in Dörnyei's later work and can be seen as a conceptual extension of the L2MSS.

1.5.4 Motivation in learning ESP and EMP

Although a substantial body of research has examined motivation and attitudes toward language learning more broadly, relatively few studies have focused specifically on the motivational factors and attitudinal dynamics associated with learning ESP, and even fewer have addressed EMP in particular. In the ESP context, Dudley-Evans and St John (1998) were among the first to argue that language learners' motivation depends on their ability to connect English with their profession or occupation of interest. This premise is now widely accepted, particularly in light of English's firmly established status as the global language (world language) in academia (Dörnyei & Ushioda, 2011, p. 72). Lu and Corbett (2012, p. 4) emphasize that medical students need to be able to communicate effectively in often difficult or stressful situations in addition to learning the specific terms associated with their profession. According to Tomak and Šendula-Pavelić (2017), successful ESP instruction depends on identifying learners' specific needs, applying contemporary pedagogical methods, and integrating materials that genuinely engage students. Wette (2018) likewise found that participants of ESP courses often perceive them as more motivating than general English courses, primarily due to their pragmatic orientation. While affective factors, such as affinity for a language, its culture, or its speakers, can be central to language acquisition more generally (particularly for languages other than English; see Dettai, 2019), ESP tends to function primarily as an instrumental tool. For learners in medical or research-oriented fields, English is often viewed less as a cultural object and more as a means of advancing academic or professional goals.

As can be seen from the above, the practice-oriented nature of ESP is a major motivating factor. Tomak and Šendula-Pavelić (2017) studied motivation toward studying ESP among medical and healthcare students. They categorized motivational factors into three groups: instrumental, integrative, and personal motivation subgroups. They found that students of medical and healthcare studies were more integratively motivated (Tomak & Šendula-Pavelić, 2017, p. 151). It means that they learn ESP because they want to integrate into the target language society or better collaborate with their colleagues (Tomak & Šendula-Pavelić, 2017, p. 166). This theory of belonging is supported by the research of Pavel (2020), who argues that the need to belong to the target language community is consistent with the psychological needs described in the self-determination model (Deci et al., 2002): the need for competency,

autonomy, and belonging. Among the limitations of their research, Tomak and Šendula-Pavelić mention that many more aspects of motivation could be investigated (e.g. language learners' anxiety, the role of parental expectations/encouragement, student behavior, context, etc.).

In the case of medical doctors, the concept of belonging to the target language (discourse) community can be used both in a narrow and a broad sense. In a broad sense, it refers to the target language discourse community (e.g. physicians practicing in Hungary will need English if they want to publish articles, hold conference presentations, or simply keep up with the rapidly developing medical science as readers). In a narrow sense, belonging to the target language community refers to working abroad. In our view, the latter is not a negligible aspect either, since in exploring the motivations of Hungarian medical students, we must take into account that many of those who consciously choose to learn EMP are planning their future abroad. To accomplish this goal, an advanced level of English is essential.

1.6 Research gaps and research questions

The research presented in this dissertation was shaped by the evolving recognition of EMP as a distinct yet variably defined subfield within ESP. Given the considerable conceptual ambiguity surrounding EMP, where the term is often applied inconsistently to a range of learner groups and content types, it was essential to begin by clarifying the scope and theoretical underpinnings of the field. This conceptual inquiry informed the research questions of our Study 1, a narrative literature review (Stötzer & Farkas, 2024), which sought to define EMP more precisely (Study 1: RQ1), establish its growing educational relevance (Study 1: RQ2), and examine the professional background of those who teach it (Study 1: RQ3) (for the list of research questions/objectives, see Table D2 below and Table DA.2 in Appendix A).

Building on this conceptual groundwork, the second phase of the research turned to the question of student motivation: specifically, how medical students' motivation to learn EMP could be captured through a context-sensitive measurement tool. Empirical research exploring medical students' motivation to learn EMP remains scarce, particularly in non-English-medium instruction (non-EMI) settings. Existing studies have primarily focused on the intrinsic–extrinsic or instrumental–integrative motivation dichotomies, leaving more nuanced, theory-driven approaches underutilized. To date, no research has applied Dörnyei's L2 Motivational Self System (L2MSS) to investigate the motivational profile of medical students learning EMP, even though this framework has proven effective in a wide range of second language acquisition contexts. Study 2 (Stötzer et al., 2025c) thus focused on the development and validation of an EMP-specific questionnaire, drawing on Dörnyei's L2 Motivational Self System (L2MSS) and incorporating supplementary psychosocial dimensions. Two key research questions guided this stage: whether the adapted and contextualized scales were appropriately structured and internally consistent for the Hungarian EMP context (Study 2: RQ1), and whether the extracted principal components formed coherent motivational dimensions with meaningful interrelationships (Study 2: RQ2). The validation process established the psychometric soundness of the instrument and laid the groundwork for further investigation into motivational predictors.

Study 3 (Stötzer et al., 2026) sought to explore how these motivational dimensions—both 'core' (Ideal L2 Self, Ought-to L2 Self, Integrativeness, Instrumentality-Promotion, Instrumentality-Prevention) and 'supplementary' (Self-Confidence, Self-Efficacy, Positive and

Negative Attitudes toward EMP, L2 Anxiety)—influence students' Intended Learning Effort (ILE) in the context of learning EMP. The research objectives of this study were twofold: to examine the direct and indirect effects of the 'core' motivational variables on ILE (Study 3: RO1), and to investigate how the 'supplementary' psychosocial constructs shape those core dimensions that significantly predict learning effort (Study 3: RO2).

Recognizing the central role that instructors play in shaping student motivation, the next study, Study 4 (Stötzer et al., 2025b) shifted focus to the teaching side of EMP, an area often overlooked in empirical research. Given the limited number of EMP specialists available, we expanded our sample to include a broader group of LSP teachers, whom we accessed through the Hungarian Association of LSP Teachers and Researchers (SZOKOE). This study explored their educational backgrounds and professional identity (Study 4: RQ1) and the main challenges and difficulties they face in their teaching practice (Study 4: RQ2). This broader view enabled us to position EMP instruction within the wider landscape of LSP education, shedding light on structural constraints, identity dilemmas, and professional development needs.

The final study, Study 5 (Stötzer et al., 2025a), adopted a dual-lens approach, simultaneously examining medical students' and their EMP teachers' perspectives on the key motivational drivers and barriers influencing EMP learning. This comparative design allowed us to identify areas of alignment and divergence between the two groups (Study 5: RO1-3), offering deeper insights into how motivational engagement in EMP is co-constructed (or at times, undermined) within the learning environment. By collecting and contrasting data from both stakeholders, the study contributes to a more holistic understanding of the motivational dynamics at play in EMP contexts.

Together, these five studies provide an integrated account of EMP motivation and instruction in Hungary, moving from theoretical clarification to instrument development, motivational modelling, teacher identity research, and dual-perspective analysis. The dissertation highlights the value of studying EMP not only as a linguistic or curricular phenomenon, but as a complex, socially situated process shaped by the intersecting experiences of students and educators alike.

Table D2 List of research questions and research objectives

	Research questions / Research objectives
Study 1	RQ1 How is EMP conceptually defined?
	RQ2 What factors underline the importance of learning EMP?
	RQ3 Who are the teachers of EMP?
Study 2	RQ1 Are the scales adapted and contextualized to assess the motivational disposition of Hungarian medical students in the context of learning EMP appropriately structured and internally consistent?
	RQ2 Do the extracted principal components form coherent dimensions, and what relationships exist among these dimensions?
Study 3	RO1 To examine and demonstrate the direct and indirect effects of the 'core' motivational dimensions on medical students' Intended Learning Effort in the context of learning EMP.
	RO2 To explore and demonstrate how 'supplementary' variables influence those core motivational dimensions which have direct effects on Intended Learning Effort.
Study 4	RQ1 What are the educational pathways and professional identity of LSP teachers?
	RQ2 What are the main challenges and difficulties of LSP teachers?

	Research questions / Research objectives
Study 5	RO1 To identify the most salient drivers and barriers of medical students' motivation to learn English for Medical Purposes in non-EMI medical programs. RO2 To determine the degree of alignment and divergence between students' and EMP teachers' perceptions within the same institutional context. RO3 To derive empirically grounded, practice-oriented implications for EMP curriculum design in non- EMI settings.

1.7 Relevance and novelty of this research

The teaching of LSPs, including EMP, is in a state of constant evolution, shaped by shifting pedagogical paradigms, technological developments, and policy changes at both institutional and national levels. While English has become the global language of academia (Dörnyei & Ushioda, 2011, p. 72), teaching and learning EMP has remained an under-researched area. This dissertation seeks to address this gap by systematically exploring both student and teacher perspectives on EMP learning and instruction, thereby contributing to a more nuanced and research-informed understanding of EMP instruction.

The initial impetus for this research was partly personal and practice-driven. Having taught EMP for over twenty-five years, I have witnessed first-hand the growing complexity of this educational domain, marked by changing learner needs, curricular constraints, and institutional expectations. Recurring questions arising from the classroom and broader institutional contexts prompted me to seek evidence-based answers to issues and challenges that I, like many other EMP practitioners, face in day-to-day teaching.

From the beginning, the research project was guided by a dual aim: to explore student motivation and to investigate the professional realities of those who teach EMP. These two dimensions are inherently interrelated, as student motivation and success are deeply influenced by the learning environment and the teacher's role within it. However, despite this, LSP instructors (including EMP teachers) have rarely been the subject of systematic empirical inquiry. The dissertation is the first to empirically examine the professional identity, motivation, and working conditions of EMP/LSP teachers in Hungary, thus addressing a long-standing blind spot in ESP research.

By foregrounding this topic, the present research aims to bring visibility to the field of EMP, which has long lacked the attention it deserves. In terms of originality, the dissertation breaks new ground both theoretically and empirically. First, it clarifies conceptual ambiguities and provides a comprehensive synthesis of the most recent and significant literature on EMP motivation. Second, methodologically, it introduces and validates a newly-developed instrument grounded in Dörnyei's L2MSS, which can be adapted and used in other (inter)national or institutional settings as well. Third, pedagogically, the studies included in the dissertation have considerable practical implications. By placing both students and teachers at the center of analysis, the research promotes a more holistic and inclusive understanding of EMP, aiming to inform both scholarship and practice in a sustainable and context-sensitive manner. Ultimately, our goal has been to bridge theory and practice, to generate research-based insights that can inform real-world educational strategies, support teacher development, and contribute to more effective and responsive EMP programs.

1.8 Overview of research methodology

Methodologically, the dissertation is structured around four main strands. First, a narrative literature review, presented in Study 1 (Stötzer & Farkas, 2024), maps the conceptual and empirical landscape of EMP and it informed the development of the student and teacher questionnaires. Second, Study 2 (Stötzer et al., 2025c) describes the development and validation process of the student questionnaire, while Study 3 (Stötzer et al., 2026) presents the modeling phase conducted with the now validated instrument, closely building upon the previous phase. Third, Study 4 (Stötzer et al., 2025b) outlines the methodology of the teacher questionnaire, which enabled a primarily descriptive analysis of LSP instructors' professional background and challenges. Finally, Study 5 (Stötzer et al., 2025a) features a comparative analysis of student and teacher perceptions, using forced-choice, top-three selection lists included in both the student and teacher questionnaires. Figure D1 illustrates the structure of the student and teacher questionnaires, followed by a more detailed elaboration of the four methodological strands. Together, these methodological strands provide a comprehensive, multi-perspective examination of EMP teaching and learning in Hungary and a robust exploration of the two key pillars in the educational ecosystem of EMP: learner motivation and teacher agency.

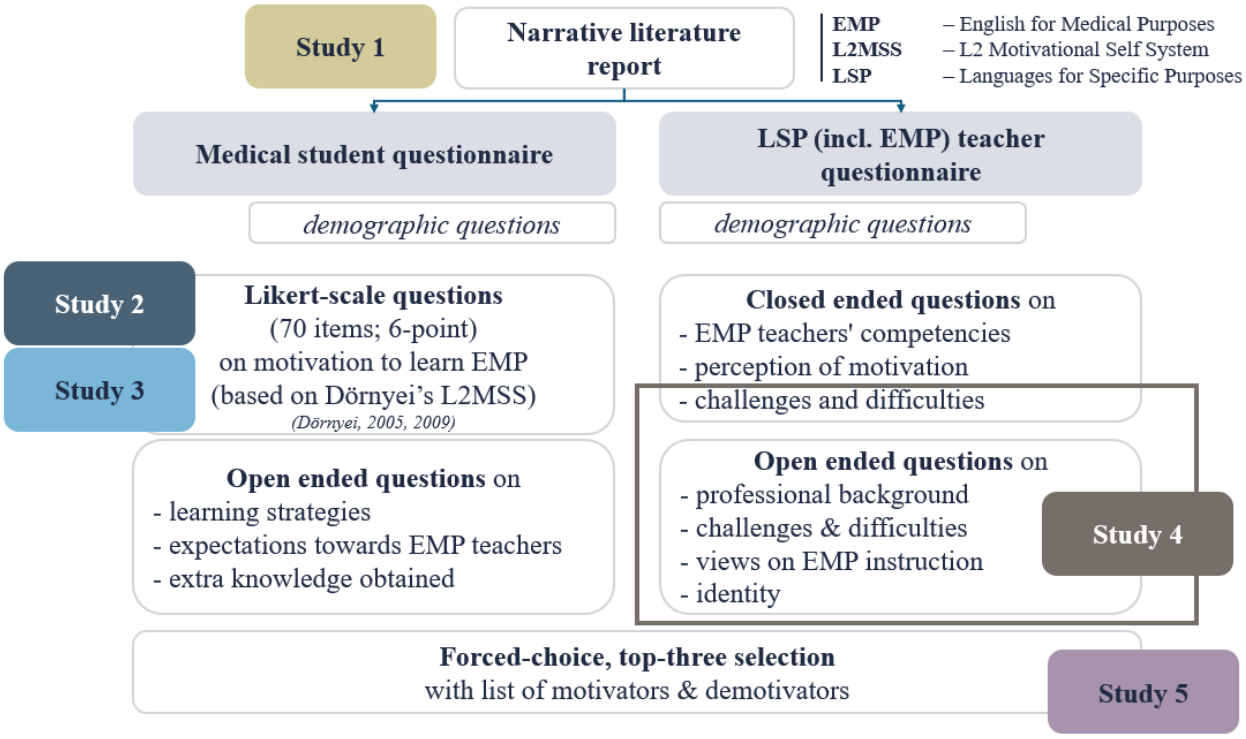

Figure D1 Structure of the student and teacher questionnaires

1.8.1 Narrative literature review

The narrative literature review (Study 1, Stötzer & Farkas, 2024) included in the dissertation serves to clarify the conceptual boundaries of EMP as a subfield within ESP and map out the existing empirical and theoretical literature on EMP instruction and EMP teacher identity. Methodologically, the review followed a structured process of source selection, relying on backward snowballing, inclusion and exclusion criteria, and thematic synthesis. The analysis offered a critical overview of prevailing definitions, research foci, and gaps, thus laying the theoretical groundwork for the empirical studies that followed.

1.8.2 Research phase with student questionnaire

The development of the student questionnaire was grounded in Dörnyei's L2 Motivational Self System (L2MSS), a widely used and empirically supported framework in second language motivation research. While Dörnyei's model has been applied extensively in various contexts, it was originally designed to measure motivation related to general foreign language learning, not LSPs. To date, no published study has applied the L2MSS framework specifically to the domain EMP, despite the fact that EMP represents a unique and highly goal-oriented language learning context where students' future professional identities and perceived communicative needs are likely to play a critical role in shaping their motivation. Given that EMP learners are typically advanced adult learners with clearly defined academic and career trajectories, their motivational dispositions may differ significantly from those of general language learners. We presumed that the EMP context is particularly well-suited for an L2MSS-based investigation, as the model's emphasis on future self-guides (e.g., Ideal L2 Self) aligns well with the future-oriented, instrumental goals characteristic of EMP learners.

The original model has been used in a variety of ways by different scholars; however, the present study drew primarily on the versions developed by Ryan (2009), Taguchi et al. (2009), and Brady (2019a, 2019b). In our research, however, we did not adopt the L2MSS questionnaire items in their original or previously applied form. Instead, when we translated the items into Hungarian, we adapted them to the context of learning EMP, ensuring that each statement reflected the realities of medical students' learning environment (for the Hungarian and English versions of the student questionnaire see Appendix B and Appendix C, respectively). A comparative overview of the questionnaire structures used by Ryan (2009), Taguchi et al. (2009), and Brady (2019a, 2019b) and the one we applied can be found in Study 2, Table A.1. As a result of the pilot study (conducted between November and December, 2022), the main study (conducted between February and April, 2024) employed a 70-item Likert-scale questionnaire, comprising the contextualized versions of the L2MSS items tailored to the EMP learning environment. A 6-point Likert scale was used to deliberately exclude a neutral option in order to encourage respondents to express a directional stance, thereby reducing central tendency bias, which is common in attitudinal and motivational research. At the same time, it is acknowledged that the absence of a neutral midpoint may place greater cognitive demands on some respondents, may force a choice among participants who genuinely hold neutral or ambivalent views, and may in some cases result in less stable or less precise responses. This choice also reflects the scale format applied in the questionnaire used by Brady (2019a, 2019b), which was adopted and adapted for the purpose of our research.

Following expert review and a think-aloud protocol involving medical students, the pilot study was conducted among students enrolled in the Hungarian-language medical program at the Albert Szent-Györgyi Medical School of the University of Szeged. In the pilot study, following the prior approval of the Dean of the Albert Szent-Györgyi Medical School, the Registrar's Office posted the link to the pilot questionnaire (prepared on the Google platform) on the medical school's virtual notice board for the medical students in the Hungarian program ($N \approx 1200$). The main study implemented a nationwide survey by distributing the questionnaire to all medical students enrolled in the Hungarian-language programs at all four medical schools in Hungary. Given the limited number of responses ($n = 103$) obtained during the pilot study, for the main study we requested permission from the Deans of the four Hungarian medical schools to have their respective Registrar's Offices distribute the questionnaire link directly to the institutional email addresses of medical students enrolled in the Hungarian-language programs[8] ($N = 5800$). This time, the number of respondents was 283. The number of all respondents in both phases (pilot and main studies) exceeded the above figures. Altogether 161 and 486 students submitted their responses in the pilot and main studies, respectively. It was because the sample bifurcated at the point where participants were asked whether they had previously enrolled in an EMP course. Only those who responded affirmatively were presented with the full set of items targeting their motivation to learn EMP, which are the focus of the current analysis. Respondents who had not taken an EMP course were instead asked to provide open-ended responses explaining their reasons for not enrolling. These qualitative comments were collected for further investigation but are beyond the scope of the present study (for the overall structure of the research project see Figure DA.1 in Appendix A).

In Study 2 (Stötzer et al., 2025c), the data analysis began with checking normality using the Kolmogorov–Smirnov test, skewness/kurtosis values, and visual inspection of histograms and Q–Q plots. Ten separate Principal Component Analyses (PCA) were conducted, each with a maximum of 12 items, to identify the component structure. Kaiser–Meyer–Olkin (KMO) and Bartlett's test confirmed the suitability of the data for PCA. Components with eigenvalues >1 and explaining at least 33% of the variance were retained. A loading threshold of 0.400 was applied, and no rotation was performed. Reliability was assessed using both Cronbach's alpha (acceptable threshold: 0.7) and McDonald's omega (acceptable threshold: 0.65 [Kalkbrenner, 2021]), due to non-normality in many variables. Indices were created for each motivational dimension by averaging the item scores. The resulting scale ranged from 1 to 6, where higher values reflected stronger disagreement. In addition to PCA, paired t-tests were used to compare mean scores across dimensions, and Spearman's correlations examined interrelations among constructs due to the ordinal nature of the data.

In Study 3 (Stötzer et al., 2026), the validated questionnaire was used to build a mediation model that explored how both 'core' motivational variables (e.g., Ideal L2 Self, Ought-to L2 Self, Instrumentality–Promotion and –Prevention, and Integrativeness) and 'supplementary' variables (Self-confidence, Self-efficacy, L2 anxiety, Attitude toward EMP) influence students' Intended Learning Effort (ILE). Data analysis involved linear regression and

[8] All undergraduate medical students (years 1 to 6) enrolled in Hungary's Hungarian-language medical programs, approximately 5800 students (60% female, 40% male, based on Hungarian Statistical Office data in 2024) were invited to participate (Stötzer et al., 2025a).

mediation analyses to identify direct and indirect predictors of Intended Learning Effort (ILE). These analyses helped model how internal and external motivational components interact to shape students' effort investment in EMP learning.

The description of the methodology related to the forced-choice selection section of the student questionnaire is provided below, in Section 1.8.4.

1.8.3 Teacher questionnaire

Study 4 (Stötzer et al., 2025b), focuses on LSP instructors. Given the small number of EMP specialists in Hungary, the study employed a broader sampling strategy and surveyed 44 LSP teachers from 15 Hungarian higher education institutions (HEIs). The custom-designed questionnaire included 10 demographic items, 22 closed-ended questions, and 9 open-ended questions (for the Hungarian and English versions of the teacher questionnaire see Appendix D and Appendix E, respectively). It investigated participants' educational backgrounds, career trajectories, teaching responsibilities, and perceived challenges. Descriptive statistical analysis, Kruskal–Wallis tests, and Monte Carlo simulations were used to examine group-level trends and subgroup differences. Open-ended responses were thematically analyzed to yield qualitative insights into professional identity and institutional positioning. The teacher questionnaire was distributed between February and April 2024 with the assistance of the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes (SZOKOE), who helped disseminate the link to their members. In addition, we contacted 19 foreign language centers and organizational units at 17 HEIs offering LGP and LSP courses, requesting their support in forwarding the questionnaire to colleagues involved in LSP teaching (Stötzer et al., 2025b). Although there are no official records of the exact number of LSP teachers in Hungary, estimates suggest a population of approximately 300 to 350. Accordingly, the participation of 44 LSP teachers from 15 higher education institutions represents a meaningful and sufficiently diverse sample for exploratory purposes (Stötzer et al., 2025b).

1.8.4 Comparative analyses in Study 5

The pilot student questionnaire did not yet include the forced-choice items in which students were asked to select four factors from a predefined list that they believed most supported their EMP learning, and four factors from another list that they perceived as the most significant barriers. These items were added to the version of the questionnaire distributed during the main study and were also administered to teachers—along with additional questions—within the framework described below. Thus, these forced-choice items were included in both the student and teacher questionnaires (see Appendices B–E). The design of these items was informed by the findings of Mezei and Fejes (2020), who conducted semi-structured interviews with 12 teachers (primary education, upper grades) to explore their perspectives on the practical application of the TARGETS dimensions (Task, Authority, Recognition, Grouping, Evaluation, Time, and Social Relationship) in classroom settings. The data from these interviews were analyzed and the authors identified factors that teachers perceive as motivators and demotivators in their professional practice. These lists served as our basis for the compilation of the lists presented in Study 5, Table 3 (Stötzer et al., 2025a). We used these lists as a starting point and adapted them to better suit the higher education EMP context by excluding items deemed less relevant and adding factors such as teacher's EMP proficiency, teacher's discipline-related knowledge, learners' anxiety, and the teacher–student

relationship, which were more pertinent to the university setting under investigation. The refined lists were then transformed into two forced-choice items: both EMP students and EMP teachers were presented with the adapted lists of motivational drivers and barriers and were asked to select the three they considered most influential in the context of EMP learning.

Study 5 (Stötzer et al., 2025a) complements the findings of the previous studies by comparing students' perceptions of key motivational drivers and barriers with those reported by their EMP instructors. In the comparative analysis of motivational drivers and barriers, only the responses of EMP teachers were considered, rather than those of LSP instructors. This was a deliberate methodological choice, based on the rationale that only EMP teachers (those who directly teach EMP to Hungarian medical students) are familiar with the linguistic, curricular, and motivational specificities of the context under investigation. The questionnaire responses from this group thus offered insights grounded in the same instructional environment as the student sample.

The comparison relied on forced-choice, top-three selection items, which required participants to choose the three most salient motivators and demotivators from a refined list of factors (originally adapted from Mezei & Fejes, 2020). These lists were modified to reflect the higher education EMP context. In terms of data analysis, a two-step procedure was followed. First, items were analyzed based on raw selection frequencies across both student (n=283) and EMP teacher (n=20) groups. Second, these selections were organized into broader motivational and demotivational dimensions, inspired by Dörnyei's L2 Motivational Self System and relevant pedagogical constructs. Frequencies were normalized as proportions of possible selections to allow for valid cross-group comparisons. This method enabled a clearer interpretation of patterns in the rankings and revealed key areas of convergence and divergence between student and teacher perspectives, using a structured forced-choice checklist administered to both groups.

1.9 Summaries of the included studies

Before presenting the full-text versions of the five peer-reviewed publications that form the core of this dissertation, a brief summary of each article is provided below. These concise overviews serve to contextualize the subsequent chapters and illustrate how the individual studies collectively advance our understanding of EMP learning and teaching in the Hungarian higher education context. The five peer-reviewed articles that form the backbone of this study-based dissertation are not standalone publications in isolation, but thematically and conceptually interlinked components of a coherent research program. The overarching aim of this program was to better understand the dynamics of student motivation to learn EMP within the Hungarian higher education context, from both learner and teacher perspectives. To achieve this, the research was structured along a logical progression, moving from conceptual clarification to instrument development, empirical investigation, teacher-focused inquiry, and ultimately, comparative interpretation.

The research project began by addressing a foundational issue: the conceptual ambiguity surrounding EMP itself. Although EMP is widely used as a curricular label, its definition, scope, and relation to other LSP domains often remain unclear. Study 1 (Stötzer and Farkas, 2024) thus provides a narrative literature review that lays out a conceptual framework, differentiating EMP from related terms such as English for Health Sciences Purposes (EHSP), and calling for

more context-sensitive pedagogical and institutional approaches. Building on this conceptual grounding, the next step was to examine student motivation, a factor known to be crucial in second language acquisition. At the time of the research, no validated instrument existed in Hungary that could reliably measure medical students' motivation to learn EMP. Moreover, although international studies have explored EMP motivation, none of them have employed Dörnyei's L2 Motivational Self System (L2MSS), which we found particularly suitable for capturing the future-oriented, identity-related aspects of learning EMP in non-EMI contexts. Dörnyei's L2MSS is a framework that emphasizes learners' self-concept, ideal language selves, and future-oriented vision, providing particularly suitable lens for exploring EMP motivation. Study 2 (Stötzer et al., 2025c) reports on the development and validation of a L2MSS-based questionnaire, which we contextualized and tailored to the Hungarian EMP context. Armed with this validated instrument, Study 3 (Stötzer et al., 2026) presents the results of a nationwide questionnaire-based study involving 283 Hungarian medical students. Using regression and mediation analyses, it identifies the key motivational predictors of intended learning effort (ILE), emphasizing the central role of Ideal L2 Self and Integrativeness, reframed here not as cultural assimilation but as identification with a global medical community. Fully aware that learners' motivation is inherently shaped by its context, Study 4 (Stötzer et al., 2025b) shifts the analytical focus to the teacher side of this particular learning environment. Teachers, including LSP/EMP instructors, play a pivotal role in shaping the conditions for learning, yet their experiences and challenges are rarely investigated. This article explores the professional identity, challenges, and institutional embeddedness of Hungarian LSP teachers through a national survey, highlighting the resilience and self-directed development that characterizes this often invisible group. Finally, Study 5 (Stötzer et al., 2025a) brings together the student and teacher perspectives by comparing their responses to a shared set of forced-choice items. Both groups were asked to identify the top three motivators and demotivators in EMP learning. Crucially, this study focuses on EMP teachers who teach the very students who completed the student questionnaire, making it possible to generate comparative insights grounded in a shared educational setting. The results reveal strong alignment on many points (e.g., the role of career goals and language anxiety) but also highlight areas of divergence that have direct pedagogical implications for curriculum design and classroom practice.

Taken together, the five studies build a cumulative and interwoven understanding of EMP learning motivation in Hungary. They demonstrate that conceptual clarity, context-sensitive tools, learner voices, and teacher perspectives are all essential for designing effective EMP instruction.

1.9.1 ContEMPorary matter: Updating our understanding of English for Medical Purposes

This focused narrative review, Study 1 (Stötzer & Farkas, 2024) addresses long-standing conceptual and pedagogical ambiguities in the field of EMP, a specialized subset of English for Specific Purposes (ESP) that appears to be gaining increasing prominence in medical education. Despite its growing visibility, EMP is often loosely defined and inconsistently applied across institutional and disciplinary boundaries. The review argues for a more precise terminology and proposes a functional distinction between EMP (used specifically for medical students and physicians) and English for Health Sciences Purposes (EHSP), which refers to the broader array

of health-related disciplines such as physiotherapy, dentistry, and nursing (Stötzer & Farkas, 2024).

The paper begins by situating EMP within the broader ESP landscape, acknowledging the global dominance of English in medical science and academia (Di Bitetti & Ferreras, 2017; Heming & Nandagopal, 2012). It highlights how EMP differs fundamentally from English for General Purposes (EGP) and English as a Foreign Language (EFL), as it is both purpose-driven and content-based, aligned with the communicative and professional needs of medical learners (Dudley-Evans & St John, 1998; Pavel, 2020).

The review also challenges traditional approaches to needs analysis, arguing that they must evolve beyond linguistic target descriptions to include motivational factors, learning strategies, and student preferences for instructional format (Bui & Huong, 2023). Moreover, it emphasizes the complex professional profile of EMP teachers, many of whom lack formal training in medical disciplines and thus rely on self-education, professional resilience, and collaboration with medical content specialists (Sarré & Whyte, 2016; Bajzát, 2020; Chateaureynaud & John, 2022).

Drawing on recent EU-level initiatives such as TRAILs and CATAPULT, the review underscores the need for a formal competence framework and structured career pathways for LSP/EMP educators (Sarré, Skarli, & Turula, 2021). These developments are especially pressing given the growing demands for authentic, integrated, and learner-centered EMP instruction in both Hungarian and international contexts.

In conclusion, this article provides a conceptual and terminological foundation for subsequent empirical investigations into EMP motivation and teaching practices. By calling for terminological clarity, context-sensitive pedagogy, and institutional support, it offers not only a theoretical reframing of the field but also practical directions for curriculum planners, teacher educators, and language policymakers aiming to strengthen EMP instruction in higher education.

1.9.2 From theory to instrument: Developing an L2 motivational self system-inspired questionnaire

In an era where English has become the global language of science and medicine, mastering EMP is crucial for non-Anglophone medical students. However, despite the increasing importance of EMP, research on medical students' motivation in this domain remains scarce, and existing tools fail to adequately capture the specific motivational factors influencing EMP learners. Addressing this gap, Study 2 (Stötzer et al., 2025c) presents the development and validation of a novel questionnaire, rooted in Dörnyei's L2 Motivational Self System (L2MSS), to assess medical students' motivation for learning EMP.

The study surveyed 283 medical students from four medical schools in Hungary, all enrolled in non-English-medium instruction (non-EMI) programs. Using Principal Component Analysis (PCA) to examine the internal structure of the adapted questionnaire. The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity confirmed the dataset's suitability for PCA, while Cronbach's α and McDonald's ω were used to establish internal consistency. The questionnaire measured nine motivational dimensions, including Ideal L2 Self, Ought-to L2 Self, Integrativeness, Instrumentality (Promotion and Prevention), Attitude toward EMP, Self-Efficacy, Self-Confidence, and L2 Anxiety.

A key contribution of this study is the development of a methodologically sound and globally adaptable instrument, filling a critical research gap in ESP (English for Specific Purposes) and EMP motivation studies. Unlike previous research that predominantly focused on instrumental vs integrative motivation dichotomies, this questionnaire provides a multidimensional perspective, offering a more nuanced understanding of medical students' motivation to learn EMP.

The results revealed that Hungarian medical students' motivation is primarily driven by their Ideal L2 Self (i.e., their vision of themselves as competent EMP users in their future careers) and Self-Efficacy (belief in their ability to succeed in EMP learning). Instrumentality-Promotion, reflecting the recognition of career and academic benefits from EMP mastery, was also a strong motivational factor, whereas Ought-to L2 Self (external pressures to learn EMP), representing external pressures, played a less significant role. These findings align with previous research showing that goal-oriented motivation is a defining characteristic of EMP learners. Additionally, the study identified two distinct attitudinal components, one reflecting a positive outlook toward EMP and another capturing negative perceptions, suggesting that some students experience anxiety or resistance toward learning EMP.

Beyond its theoretical contributions, this study offers practical insights for curriculum development and pedagogical strategies in EMP instruction. The study highlights practical ways to enhance EMP instruction by aligning teaching strategies with students' motivational profiles. Authentic materials, professional simulations, and task-based learning could strengthen students' Ideal L2 Self by helping them visualize their future roles as competent English-speaking professionals. Additionally, addressing L2 anxiety through confidence-building activities and supportive learning environments could further enhance engagement. The validated questionnaire not only serves as a diagnostic tool for educators but also offers a framework for future research in other national and institutional settings.

By developing a contextualized, empirically tested instrument, this study makes a significant contribution to understanding EMP learning motivation. It bridges the gap between theoretical insights and practical applications, enabling educators to tailor curriculum design and pedagogical approaches to better support medical students. In the long run, fostering EMP proficiency not only enhances students' academic and professional opportunities but also strengthens their ability to participate in international medical discourse, benefiting both their careers and the broader healthcare community.

1.9.3 Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes

Study 3 (Stötzer et al., 2026) explores an underexamined yet increasingly significant area in English for Specific Purposes (ESP): the motivational factors influencing non-Anglophone medical students' efforts to learn EMP. As EMP becomes central to medical education globally, understanding what drives students to engage meaningfully with it is essential for effective curriculum design. Despite its growing relevance, existing motivational research in EMP has largely overlooked contemporary frameworks, such as Dörnyei's L2 Motivational Self System (L2MSS). This study addresses this gap by offering a context-sensitive motivational model tailored to the realities of medical education.

Drawing on a newly developed instrument grounded in L2MSS and augmented with psycho-social variables, the study surveyed 283 Hungarian medical students enrolled in Hungarian-medium instruction (HMI) programs across four universities. All participants had completed at least one EMP course. The questionnaire captured core motivational dimensions (e.g., Ideal L2 Self, Integrativeness, Instrumentality) and supplementary constructs (e.g., Self-confidence, Self-efficacy, L2 anxiety). Using linear regression and mediation analyses, the authors mapped direct and indirect predictors of Intended Learning Effort (ILE).

Three core dimensions emerged as direct predictors of ILE: Integrativeness, Ideal L2 Self, and Instrumentality-Prevention. Notably, Integrativeness exerted the strongest influence, reframed in this context not as cultural assimilation but as identification with a global professional community. Medical students demonstrated motivation to engage with EMP not to integrate into English-speaking cultures but to participate in international research, publishing, and collaboration, which are hallmarks of contemporary medical careers.

The Ideal L2 Self also strongly predicted learning effort. Students with a clear self-image as proficient future EMP users (delivering presentations, publishing in English, or communicating internationally) were more committed to their studies. Instrumentality-Prevention, though weaker, also contributed to motivation: students sought to avoid professional set-backs associated with inadequate EMP competence.

Interestingly, neither Instrumentality-Promotion nor Ought-to L2 Self showed direct effects on ILE. However, both had significant indirect effects via their influence on Integrativeness and Ideal L2 Self. This suggests that external expectations and aspirational goals may serve as motivational "primers," but their effects on effort are mediated by more internalized, self-conceptual variables.

The study also examined how supplementary psychosocial variables shaped these core motivators. Self-confidence emerged as a particularly strong predictor of both Integrativeness and Ideal L2 Self, indicating that students who feel capable in English are more likely to identify with a professional linguistic identity. Self-efficacy supported Ideal L2 Self development, while L2 anxiety enhanced prevention-based motivation. Positive attitudes toward EMP boosted both Integrativeness and Instrumentality-Prevention, while negative attitudes weakened the latter, revealing the affective underpinnings of motivational engagement.

Pedagogically, the findings advocate for a shift toward authentic, simulation-based instruction. Content- and context-based teaching that integrates real-world materials and professional scenarios can reinforce students' vision of themselves as confident users of EMP. Skills labs, role-playing clinical interactions, and interdisciplinary course design offer fertile ground for cultivating both motivation and language proficiency. Collaboration between EMP educators and medical faculty is essential to this approach, ensuring that language instruction reflects real medical contexts and fosters sustained engagement.

The study also highlights the need to reduce classroom anxiety and bolster student confidence. A supportive, inclusive learning environment (with peer collaboration, scaffolded tasks, and a low-stakes atmosphere) can help students build self-efficacy and reinforce their Ideal L2 Self. These psychosocial supports are critical for transforming latent motivation into active learning effort.

Although based in Hungary, the study's theoretical model and instrument are readily adaptable to other non-Anglophone settings. The results offer a roadmap for understanding and

enhancing EMP motivation globally. Moreover, the findings underscore the urgent need for specialized training programs for EMP instructors – professionals who must bridge linguistic expertise with medical domain knowledge.

By developing a nuanced motivational model and offering empirically grounded pedagogical strategies, this study makes a significant contribution to EMP scholarship. It offers clear implications for curriculum design, instructional practice, and international research, ultimately aiming to equip future medical professionals with the linguistic and psychological tools needed to thrive in an increasingly globalized healthcare landscape.

1.9.4 Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary

Study 4 (Stötzer et al., 2025b) investigates the professional background, self-concept, and challenges of LSP (Languages for Specific Purposes) teachers in Hungarian higher education, a population often overlooked in language education research. Although the demand for ESP/EMP courses is increasing, the role of LSP teachers remains underdefined, with no official qualification pathways or professional category existing in Hungary. As a result, many LSP instructors perceive themselves as self-appointed (having entered the field without formal disciplinary qualifications) and self-taught (having acquired subject-matter knowledge and teaching strategies through independent learning, rather than institutional training).

The study is based on a national survey distributed with the assistance of SZOKOE (the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes) and university-based language centers. The sample consisted of 44 LSP teachers from 15 Hungarian higher education institutions, representing a broad range of disciplinary domains and teaching experience. While acknowledging the limitations posed by the absence of national statistics on the actual size of this professional group, the authors estimate the population to be around 300–350, which positions the sample size as meaningful for exploratory purposes.

The questionnaire contained closed-ended questions covering sociodemographic data, educational background, institutional affiliation, and teaching load, as well as teachers' perceptions of motivation, support, and professional challenges. Additionally, open-ended questions invited respondents to reflect on their career paths and perceived role in LSP education. The results reveal a complex professional identity shaped by both pedagogical adaptability and institutional marginality. Respondents highlighted the time-intensive nature of LSP curriculum development, lack of collaboration with content experts, and the absence of structured professional development opportunities tailored to their context.

Many participants viewed themselves as educational mediators rather than disciplinary insiders, and expressed concerns about limited recognition, unclear career advancement routes, and insufficient institutional support. Despite these obstacles, a strong sense of professional resilience and learner-oriented commitment emerged, underscoring the self-driven nature of their engagement with LSP teaching.

The study contributes to the international literature by offering an empirically grounded snapshot of LSP instructors' realities in a Central European context. It also calls for the development of formal frameworks and support systems that recognize the hybrid expertise of LSP teachers and help legitimize their professional role in higher education.

1.9.5 Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers

Study 5 (Stötzer et al., 2025a) investigates which factors enhance or hinder medical students' motivation to learn EMP, drawing on the dual perspectives of learners and instructors. The study was motivated by the increasing yet still under-researched role of EMP in Hungarian higher education, where EMP courses are integrated into Hungarian-medium medical curricula, but their motivational impact remains largely unexplored.

A forced-choice questionnaire was administered to 283 Hungarian medical students and a subset of 20 EMP teachers (selected from a national sample of 44 LSP instructors). Participants were asked to select the three most significant motivational drivers and barriers to EMP learning from carefully curated item lists. These lists were adapted from Mezei and Fejes's (2020) interview-based study on the TARGETS motivational framework, with refinements to reflect the higher education context. For example, items such as role modeling and peer competition were excluded, while teacher-related aspects (e.g., EMP proficiency, content knowledge) and affective factors (e.g., anxiety, shyness) were added.

Results indicated a high degree of alignment between students and teachers regarding key motivational drivers: both groups emphasized career goals, personal interest, and a sense of achievement. These were conceptually grouped under Dörnyei's (2005, 2009) L2 Motivational Self System, with the Ideal L2 Self emerging as the strongest motivational construct. Teachers additionally stressed their own personality and the use of innovative methods, suggesting professional awareness of their influence on student motivation.

Similarly, both groups identified demanding schedules, language anxiety, and fear of failure as leading demotivators. These were categorized based on whether they stemmed from the broader learning environment, teacher-controlled variables, or internal learner states. Interestingly, teachers perceived instructional shortcomings (e.g., poor feedback, inadequate materials) as more demotivating than students did, pointing to a sense of professional responsibility and instructional self-reflection. Meanwhile, students more frequently cited peer disengagement as an issue, indicating sensitivity to classroom dynamics.

The study contributes to the literature by providing a comparative, data-driven insight into how students and teachers perceive EMP motivation in parallel. Pedagogical implications include: (1) integrating EMP with medical content to reinforce career relevance; (2) fostering psychologically safe, feedback-rich classroom environments; and (3) supporting EMP teachers through targeted institutional development. By clarifying where student and teacher perceptions converge or diverge, the study offers actionable guidance for more motivation-sensitive curriculum and instruction in EMP settings.

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CHAPTER TWO

ContEMPorary matter: Updating our understanding of English for Medical Purposes

(Study 1)

In this chapter, we include our focused narrative literature review (Stötzer & Farkas, 2024), published in a Q3-ranked journal. The study is presented in the dissertation exactly as published in the journal, with no content alterations, and is provided in a searchable format. In accordance with the journal's requirements, the references have been formatted according to the Chicago Manual of Style. The published study is open access and freely available. Throughout the dissertation, this article is cited as (Stötzer & Farkas, 2024).

Authors	Year	Title	Journal	SJR	
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Review research paper

CONT*EMP*ORARY MATTER: UPDATING OUR UNDERSTANDING OF ENGLISH FOR MEDICAL PURPOSES

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Abstract. *There is a growing interest in learning and teaching English for Specific Purposes (ESP) at tertiary level in countries where English is not the primary language. Due to globalization, there has been a shift from learning and teaching English for General Purposes (EGP) to ESP in universities worldwide, and English for Medical Purposes (EMP), a notable subset of ESP, is no exception. This narrative review aims to contribute to understanding the evolving landscape of EMP development and teaching by highlighting aspects of EMP that warrant revisitation. Through a focused approach, the concept of EMP is investigated first and we argue that it is essential to clarify the applied terms, proposing 'English for Health Sciences Purposes' (EHSP) for multiple healthcare disciplines and reserving 'English for Medical Purposes' (EMP) specifically for medical students and physicians. In addressing the second research question, this paper emphasizes the importance of learning EMP by highlighting its distinct target audience and emphasizing that EMP is purpose-driven, content-based, and tailored to medical contexts, offering learners a competitive edge. The review also underscores the need for new types of needs analyses. In answering the third research question, it has been found that EMP teachers often lack formal medical training but are required to teach specialized content. Despite recent EU initiatives offering professional development for Languages for Specific Purposes teachers, EMP instructors must continually self-educate. Their role requires adaptability, flexibility, and modern teaching skills, as they act more as facilitators and collaborators than traditional language instructors. Hopefully, the findings of upcoming empirical studies will help develop student-centered approaches to EMP and may lead to a supportive environment for the effective teaching of this specialized field.*

Key words: *English for Medical Purposes, English for Specific Purposes, learning and teaching English for Medical Purposes, EMP teachers*

1. INTRODUCTION

In non-Anglophone countries, where English is not the first or official language, universities are increasingly shifting from teaching and learning English for General Purposes (EGP) (i.e., English as a Foreign Language) to teaching and learning English

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for Specific Purposes[1] (ESP) (Dou et al. 2023; Hyland and Wong 2019). The emergence of ESP is undoubtedly due to the fact that English has become a global phenomenon, dominating communication in numerous fields (Dyvik 2023; Galloway and Rose 2015). This trend is particularly visible in fields such as business, engineering, law, and medicine, where specific professional language use is essential (Rahman 2015). Moreover, English has unquestionably become the international language of science and technology (Di Bitetti and Ferreras 2017; Larsen-Pusey and Pusey 1987; Pavel 2014; Rose 2018). It is widely accepted that the ability to communicate in English has become an integral part of being and becoming a scientist (Mićić 2013). Especially in medicine, as Heming and Nandagopal (2012, 485) argue, 'English is the *de facto* language of international medicine'; and a good command of English is required to obtain essential medical and scientific information (Džuganová 2019).

This brings us to the focus point of this literature review: teaching and learning English for Medical Purposes (EMP)[2]. In light of the growing interest in EMP, it has become timely to conduct a focused narrative literature review to revisit the definition and concept of EMP, identify the main stakeholders (medical students and EMP teachers), and highlight new areas where further research is needed. The relevance of this literature review lies in addressing aspects of EMP that have received little discussion so far. Its limitation is that due to the interdisciplinary and multidisciplinary nature of the field – situated at the interface between applied linguistics, psychology of language learning, higher education, and adult language learning – the search and mapping of the literature were challenging, inevitably leaving the review far from being comprehensive.

EMP is primarily investigated within the realms of linguistics and applied linguistics, but this narrative literature review focuses on some of the pedagogical aspects of teaching and learning EMP that have received less attention in research. Thus, it aims to address the following research questions:

RQ1 How is EMP conceptually defined? (Chapter 3)

RQ2 What factors underline the importance of learning EMP? (Chapter 4)

RQ3 Who are the teachers of EMP? (Chapter 5)

This literature review follows a thematic structure to answer the above research questions. It starts with the description of our strategy for reviewing the literature. It is followed by an attempt to clarify what EMP is, providing an overview of the various terms used in defining this segment of specific language use, accompanied by our own elucidation and definition of EMP. We then justify why EMP should be taught at medical schools, and how this approach is supported by relevant scholarly sources. A section in this chapter is devoted to intriguing questions related to EMP teachers. Since the relevance and need for teaching EMP at medical schools are often justified by needs analyses, the subsequent section discusses needs analyses in the field of EMP and the lessons learned from them. In the conclusion, we outline the areas where further research is needed to gain a deeper understanding of this specialized field.

[1] English for Specific Purposes has been defined as 'the branch of English language studies that concerns the language, discourse, and culture of English-language professional communities and specialized groups, as well as the learning and teaching of this object from a didactic perspective' (Sarré and Whyte 2016, 150).

[2] For a historical trends and the evolution of EMP through publications see Shomoossi et al. (2019).

2. Methods and Data Analysis

This chapter outlines the methodology used to search and select relevant literature for this focused narrative review of the literature on EMP. The aim was to review studies related to our research questions concerning EMP. First, we identified key databases, set criteria for inclusion and exclusion, and selected keywords to guide the search process.

We used academic databases, academic networking sites, and academic publishers' searchable sites (see Table 1) to ensure adequate coverage of the subject matter.

Table 1 Databases used for reviewing the literature on English for Medical Purposes

Academic Databases	Academic Networking	Academic Publishers
Clarivate/Web of Science	Academia	Cambridge University Press
Dissertations and Theses Global	ResearchGate	De Gruyter
EBSCO		John Benjamins
ERIC		Oxford Handbooks Online
Google Scholar		Oxford Research Encyclopedias
JSTOR		
ProQuest Central		
ScienceDirect		
Scopus		
Taylor & Francis Online		
Wiley Online Library		

The search process involved several steps. Initial searches were conducted in the databases using search terms such as "English for Medical Purposes"; "English for Doctors"; "Medical English"; "needs analysis" AND ("English for Medical Purposes" OR "English for Doctors" OR "Medical English"), and, in addition "English for Specific Purposes [ESP] teachers" OR "Languages for Specific Purposes [LSP] teachers". Titles and abstracts were screened to assess their relevance to our research questions. Irrelevant studies were excluded at this stage. The selected articles were reviewed in full to determine their suitability based on the inclusion criteria (see Table 2), which were set to identify reliable sources, peer-reviewed articles, books, and theses that provided empirical data, theoretical insights, or comprehensive reviews related to the research questions.

Table 2 Inclusion and exclusion criteria applied for reviewing the literature on English for Medical Purposes

Inclusion criteria	Exclusion criteria
1) Address any of the identified key areas related to the research questions	1) Purely linguistic in nature
2) Deal with ESP or LSP as long as the source in question contain relevant particular information on EMP and the teachers of EMP	2) Not peer-reviewed
3) Accessible through the selected databases or the library of affiliated University	3) Do not provide information relevant to answering the research questions
	4) Published before 2000 unless considered seminal and frequently cited in recent literature

Due to the complexity of the subject matter, we proceeded and processed the literature primarily by backward snowballing, a technique involving the identification of additional studies by reviewing the references of the already selected articles. This method is

particularly effective for discovering seminal works that might not be captured through initial database searches alone, especially in the field of teaching and learning EMP.

To ensure the use of up-to-date literature, we focused on articles published after 2000. This timeframe was chosen to capture contemporary trends and developments in the field, especially considering the significant changes over the past two decades. However, the timeline for our literature review begins with 1986 because this year saw the publication of Maher's (1986) frequently cited definition of EMP (see Chapter 3).

3. What is 'English for Medical Purposes'?

Findings from this literature review confirm that, depending on which aspect is emphasized, various terms are used to describe the 'international language of medicine'. In addition to EMP, less frequently used terms include 'Medical English' (Baethge 2008) and 'Medical English as lingua franca' (MELF) (Tweedie and Johnson 2022), where the main emphasis is on English as the common language among healthcare professionals from different linguistic backgrounds. The most frequently used term, however, is EMP. A well-known and frequently cited definition of EMP was provided by Maher (1986):

> *the term 'English for Medical Purposes' (EMP) refers to the teaching of English for doctors, nurses, and other personnel in the medical professions… In general terms, EMP (a) is designed to meet the specific English language needs of the medical learner (e.g., nurse, GP, dentist, etc.); (b) focuses on themes and topics specific to the medical field; (c) focuses on a restricted range of skills which may be required by the medical learner (e.g., for writing a medical paper, preparing a talk for a medical meeting, etc.)*

However, we found that the use of the term EMP (and its shortened version: English for Medicine) is not consistent throughout the literature. Some surveys include only physicians or medical students as learners of EMP, while other surveys involve nurses, nursing students, and sometimes other health professionals (HPs) as well (see needs analyses in Chapter 4.2). This inconsistency arises from the broad, general interpretation of the word 'medicine' in English, referring to any branch of medical science. In Figure 1, an asterisk indicates the problematic term, sometimes involving exclusively physicians or to-be physicians, and sometimes other representatives or students of other health professions.

When applying the occupation-based classification, the name of the subspecialty which is teaching the specific English language to medical students and physicians is clearer: 'English for Doctors'. The duplicity of the terms as exhibited in Figure 1 results from two ways of classifying ESP in the field of Health Sciences (HS), depending on whether the classification is based on discipline or occupation. In the middle of Figure 1, 'English for Academic Purposes' (EAP) and 'English for Research Publication Purposes' (ERPP) (the latter introduced by Flowerdew and Habibie 2021) are inserted to create intersections with each subspecialty since these are essential for all HPs pursuing academic work.

We argue that it is necessary to clarify the terms we use since the subspecialties seen in Figure 1 have started to distinguish themselves from other subspecialties (e.g., teaching English for Dentistry is largely different from teaching English for Physiotherapy). For clarity, we suggest using the term 'English for Health Sciences Purposes' (EHSP) or 'English for Healthcare Professionals' when multiple disciplines of HS are involved, and reserving EMP for when the learners are medical students or physicians. In this paper, 'EMP' will refer specifically to 'English for (Medical) Doctors'.

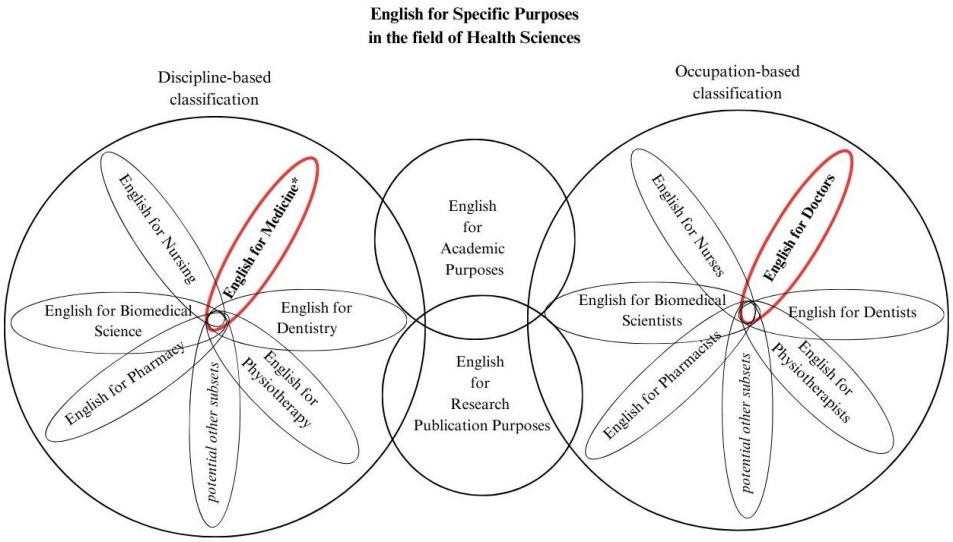

Fig. 1 Classification of English for Specific Purposes in the fields of Health Sciences based on discipline and occupation

From our research conducted among medical students and LSP teachers (work in progress)[3], and from our teaching experience, we know that even if certain elements of the terminology of EHSP are the same (e.g., taking patient history, talking to patients, general anatomy and physiology terms), there are notable differences in the language use of these disciplines across various dimensions: (1) technical[4] vocabulary: although dentists, pharmacists, physiotherapists, nurses, and other allied HPs share some of the terminology (jargon), their essential vocabulary sets are largely different; (2) needs and expectations: the learners' goals in developing their English language skills for their prospective careers may vary considerably (e.g., to read literature, publish, give presentations, or work abroad); (3) level of English proficiency of learners (although it has to be noted that EMP learners are rarely beginners).

EMP must also be distinguished from Content and Language Integrated Learning (CLIL) and English-Medium Instruction (EMI). Our findings indicate that these terms define particular methods of delivering specific knowledge of English and the settings in which they are taught. The targeted learners, content material, and the focus of imparting knowledge differ. Table A1 in the Appendix[5] clarifies these terms and their relation to EMP.

In this literature review, our definition of EMP (from a pedagogical viewpoint) is as follows:

[3] In spring 2024, we conducted a questionnaire-based study among medical students in which we aimed to explore their motivation in learning EMP. We adopted Dörnyei's questionnaire (in Taguchi, Magid, and Papi 2009), which was based on Dörnyei's motivation theory (Dörnyei 2005, 2009) and adapted it to the EMP learning environment. Data analysis is in progress.

[4] By 'technical' we mean 'a word or phrase used in a specialized field to refer to objects or concepts that are particular to that field and for which there are no adequate terms in ordinary language. See also: jargon.' https://dictionary.apa.org/technical-term

[5] Appendix

EMP (or 'English for Medical Doctors') is considered a branch of English for Specific Purposes. EMP, the specific language of medicine, is typically taught by native or non-native English language teachers to non-native medical students in medical schools (mainly in non-Anglophone countries) as an integral or complementary part of their medical education. Additionally, EMP is taught to content/subject teachers (medical educators) who teach medical (content) subjects to 'international' medical students in programs where English is the medium of instruction. EMP is also taught to practicing medical doctors and/or researchers who need to improve their academic English to publish and present in English[6].

4. What Factors Underline the Importance of Learning and Teaching English for Medical Purposes?

4.1. Why English for Medical Purposes and not English for General Purposes?

To capture the specific nature of EMP and argue for its relevance and necessity, it is important to examine to what extent the teaching and content of EMP differ from teaching English for General Purposes (EGP) either as English as a Foreign Language (EFL) or English as a Second Language (ESL)[7]. Based on our findings in the literature, teaching EMP is distinctively different in several ways, many of which relate to the learners of EMP as listed below. In today's increasingly student-centered education, it is natural that the answer lies in the learners' interest:

(1) Target audience and context. EMP is taught at medical schools, at the tertiary level. The learners (medical students, practicing physicians, or researchers) will undoubtedly need English for their studies and throughout their career. They are expected to read and write articles in English, present at conferences, and communicate with patients and professionals alike (Sarré and Whyte 2016). In our view, similar to studying Latin, EMP courses should be made available (if not compulsory) for non-native medical students at medical schools in non-Anglophone countries, as this would effectively aid their studies, professional development and career advancement.

(2) Learner profile. EMP learners are considered adults, as they are over 18 years of age. It is known that adult language learners generally 'take a more proactive role and use a variety of resources to promote their language learning' (Papi and Hiver 2020, 228).

(3) Purpose-driven learning. EMP is learnt for a specific purpose. It means it serves as a tool in the hands of its users (Dudley-Evans and St John 1998, 4–5). Maher's (1986) definition also emphasizes the 'instrument-like' (instrumental) nature of EMP. When a language is learnt for a specific occupational or professional purpose, it inevitably changes the motivation to learn that language (Pavel 2020). Therefore, exploring medical students' motivation to learn EMP would be a significant step forward in EMP research and practice.

(4) Competitive advantage. Nowadays, English must be separated from other languages in the sense that it has become a basic educational skill (Dörnyei and Ushioda 2011, 72). According to Graddol (2006, 15), this also means that no competitive advantage can be gained

[6] Since medicine is a discipline that goes hand in hand with the pressure and need for publishing in English ('Publish or Perish' phenomenon), practicing physicians and researchers working in this field often express their need for courses or further training in English for Research Publication Purposes (ERPP).

[7] ESL is taught in countries where English is the dominant or official language, while EFL learners are in non-English-speaking countries.

by the mastery of English. This may be true for general English, but not for ESP, especially in the field of science and academic publishing. Meta-research conducted by Amano et al. (2023) has found that non-native English speakers spend more time, money, and effort than native English speakers to have their papers published. It means that medical students who invest energy and time in learning EMP gain a competitive advantage: they will have a higher chance of succeeding. Their knowledge of EMP will help them during their university years and after.

(5) Content-based teaching. Teaching EMP is usually content-based, relying on authentic materials from the medical context (e.g., authentic doctor–patient dialogues, patient information leaflets, and discharge summaries). However, there are approaches to make it more context-based (Wiertlewska 2019), and we agree that EMP can and should be taught as a subject complementing medical content subjects. In this approach, the EMP teacher acts as a facilitator, mentor, or language assistant collaborating closely with content teachers (medical educators) to assist or support the teaching process of medical content subjects (transdisciplinary didactic approach). Such collaboration requires cooperation among content teachers, EMP teachers, and students. Antić (2016) suggests a similar setup, highlighting that in ESP, language teaching and content knowledge are integrated, which is a motivating combination for students. Flowerdew and Peacock (2001) also call for cooperation between subject specialists (content teachers) and English teachers. According to Barron (1992, as cited in Flowerdew and Peacock 2001), collaboration can be achieved in at least two ways. In the first method, content teachers provide insights into their teaching material, and the EMP teacher builds the EMP material around the discipline-related course content. In the second scenario, the content teacher participates as a consultant in some language classes recommending topics and/or projects, commenting on discipline-related subject matter, and helping run discussions.

4.2. What do needs analyses teach us?

Researchers in the field generally agree that teaching any language for specific purposes should be based on needs analyses (Bui 2022; Bui and Huong 2023; Sarré and Whyte 2016). According to Rahman (2015), Mubaraq (2017), and Wette (2018), specialized language courses differ from general language courses in that they assess the needs of language users and specifically address these needs. Table A.2 in the Appendix[8] summarizes the main findings of some of the numerous needs analyses conducted in several countries around the world.

Needs analyses have been crucial in the development of teaching EMP and researching into EMP. Their findings refer to the given country or university context, which vary in the evolution of the necessity of teaching EMP. Thus, these findings are not necessarily universally applicable; however, there are some lessons to learn, and there are some new avenues of research to open:

(1) Role in early stages. Needs analyses among students or practicing professionals play an important role at an early stage when these can effectively help in the creation of course and curriculum design. In Europe (in the European Higher Education Area; EHEA), the days of traditional needs analyses in terms of EMP are over. Needs should be assessed from other perspectives and other questions need to be raised: What methods do students prefer to learn EMP? What language learning strategies do they use when learning EMP? What motivates them in their learning process?

[8] Appendix

(2) Awareness and motivation. Medical students seem to be aware of the importance of learning EMP; although their motivation may differ. This has also been confirmed by our findings in a pilot study we conducted at our University[9]. Nevertheless, the basic need in terms of EMP has been clearly established: EMP must be learnt. If EMP must be learnt, it must be taught. Therefore, one may argue that EMP should be introduced into the medical curriculum similar to how Latin is already included in the curriculum in many medical schools.

(3) Professional needs. Needs analyses should be conducted among trained medical professionals as well to determine what EMP knowledge and skills they need in their career. Their use of EMP and EAP (in specific situations and genres) indicates clearly the EMP knowledge base and English language skills that EMP students will need later during their career. These surveys should be performed on an ongoing basis, as needs continuously change in the rapidly evolving medical field. Thus, the EMP curriculum/course material can be kept up-to-date, and the necessary skills can be developed, tailored to the real, actual needs.

(4) Teachers' needs. Needs analyses should also be conducted among EMP teachers. They repeatedly voice their need for professional and vocational training (Bajzát 2020). The question is whether there are sufficient opportunities for them to learn and exchange ideas. Fortunately, recent initiatives within the EHEA have surveyed and addressed the needs of LSP teachers in higher education (Chateaureynaud and John 2022) (see Chapter 5).

5. Who are the Teachers of English for Medical Purposes?

Medical practitioners, educators, and researchers need English throughout their careers. If we accept the fact that English has become a basic skill for medical professionals, the same way as learning English is increasingly becoming a self-evident, 'natural' part of education (Al-Hoorie 2017, 7), it is reasonable to argue that EMP should be taught at medical schools. This is consistent with our findings in literature: the need for specialized language education is probably greater than ever before (Breeze 2020). In many countries, this is indeed the case, which brings us to a very important question in connection with the EMP teacher: who should teach EMP?

Due to the scarcity of literature specifically related to EMP teachers, our search was extended to include search terms like "ESP teachers" and "LSP teachers". We found that EMP teachers, like most ESP/LSP teachers (Sarré and Whyte 2016), are native or non-native, qualified English language teachers, who possess the necessary language and pedagogical knowledge, but often lack formal education or training in the discipline or field of specialty the 'technical language' of which they teach (Bajzát 2020[10]; Pavel 2014; Sarré and Whyte 2016). It is understandable, particularly in the field of medicine, as a language teacher interested in teaching EMP is unlikely to pursue a degree in Medicine. Conversely, trained medical practitioners are highly unlikely to engage in teaching EMP.

[9] We conducted a pilot study in November 2022 involving medical students at a Hungarian university. A questionnaire, which was based on Dörnyei's motivation theory (Dörnyei 2005, 2009) was answered by 161 medical students. This pilot study has been followed by a nation-wide survey involving medical students of all four medical schools in Hungary (data analysis is in progress).

[10] In a survey, conducted by Bajzát (2020), it has been found that the responding ESP teachers (from Romania, the Netherlands, Japan and Germany) felt that obtaining a PhD degree was more important for them than obtaining a discipline-related degree to do their job.

On extending our search, we found two recent EU projects that are important milestones in LSP teachers' research. These projects contribute to filling the gaps and overcoming the shortcomings previously experienced in the field of effective training and professional development for LSP teachers:

(1) TRAILs project[11] is an Erasmus+ R&D initiative which focuses on enhancing the teaching of Languages for Specific Purposes. The project involved universities and research institutions from Spain, France, Slovenia, Poland, Italy, Germany, the United Kingdom, and Croatia. They conducted a complex needs analysis among LSP teachers to identify the required competences of LSP teachers and develop a training program for them. Based on their findings, they organized a pilot winter school for LSP teachers (Chateaureynaud and John 2022).

(2) CATAPULT (Computer Assisted Training And Platforms to Upskill LSP Teachers) project[12] is another Erasmus+ initiative aimed at providing professional development and training tools for LSP teachers in adult and higher education. It provides LSP teachers with the necessary skills to teach in the digital era (Sarré, Skarli, and Turula 2021). The project has developed a common competence framework that outlines the key competences required for LSP teaching.

Consistent with our personal experiences in teaching EMP, the literature review confirmed that the work of EMP (and generally, ESP/LSP) teachers is highly complex (Basturkmen 2012; Ding and Bruce 2017). Beyond traditional language teaching roles, they often develop materials, design courses, and curricula (Cao et al. 2022; Csongor, Német, and Hild 2019; Kaščáková 2016; Saidi and Afshari 2021); moreover, in order to accomplish these goals, they frequently conduct research and needs analyses (Belcher 2006). EMP teachers frequently address issues such as intercultural competencies (Lu and Corbett 2012), soft/transversal skills, political correctness, and the characteristics of written scientific English (hedging, structuring, etc.) within the context of their EMP classes. Douglas (2017) notes that ESP instructors help the learners connect with their chosen domain and integrate into the specific professional, academic, and vocational culture (discourse community). This integration requires continuous self-education on the specific content of their chosen specialty (Božić Lenard and Lenard 2018). There is an extensive amount of background knowledge that EMP teachers need to acquire about the specialty (medicine), the language of which they teach. This is largely accomplished by self-teaching because there are very few training opportunities for EMP teachers (Cao et al. 2022; Chateaureynaud and John 2022). Participation in further training and ESP-related conferences are frequently mentioned by ESP teachers as the most important ways of professional development (Bajzát 2020). Douglas (2017) encourages ESP teachers to look at other ESP domains and contexts for inspiration and insight. The TRAILs project highlighted the lack of career development prospects for LSP teachers at European universities.

The role of ESP teachers is both challenging and frustrating. They often do not know the content better than their students (Brunello and Brunello 2018; Meristo and López Arias 2020). Inevitably, this unique position impacts their role as teachers: they are no longer the 'overall source of knowledge', but rather should be viewed as language assistants, collaborators, facilitators, mentors, and consultants. Given this complexity, it is reasonable to assume that EMP teachers have a high level of flexibility, adaptability, resilience, and proficiency in 21st century skills. This is undeniably another area that merits further investigation.

[11] https://trails.hypotheses.org/
[12] https://catapult-project.eu/overview/

6. Conclusion

The limitation of this literature review lies in the multidimensional nature of the topic; however, with a focused approach, some of the important aspects of EMP have been pointed out. This focused narrative review began by addressing the first research question (RQ1: How is EMP conceptually defined?) and examining the concept of EMP. Consequently, the use of the term 'EMP' has been recommended when medical students, practitioners, or researchers are meant to be the learners of EMP. When an umbrella term is needed to include other health professionals such as nurses, dentists, etc., using the term 'English for Health Sciences Purposes' would be more demonstrative and accurate.

In answering the second research question (RQ2: What factors underline the importance of learning and teaching English for Medical Purposes?), the critical role and necessity of EMP in medical education has been emphasized by highlighting the competitive advantage which can be gained by mastering EMP during university years. Moreover, mastering EMP has far-reaching implications: if non-native trainees and trained doctors (and, in general, HPs) can communicate fluently in English, a globally shared language, it will positively influence health sciences and, consequently, patient care worldwide. It has also been pointed out that needs analyses should take new turns and should be carried out among EMP teachers. The review's findings confirm that LSP teachers, in general, lack training and further training opportunities, their work is highly complex, they have to self-teach themselves on the discipline (the subject-matter/content) the language of which they teach, and there are no career development prospects. Although there is a growing body of research on teachers' identities, there is very little research on EMP teachers' identities, career development, motivation, training opportunities, and working conditions. Research into the working methods of EMP teachers would also be beneficial to see what their responses are to the recent changes (e.g., remote teaching, appearance of AI).

As it has been highlighted, instead of the traditional needs analyses (i.e., surveying the needs of the students), new questions need to be raised. Nowadays, learners of EMP should be asked about their learning strategies when learning EMP, and surveying their motivation would be another important line of inquiry in the field of EMP research.

On reviewing the important aspects of EMP in the literature, future research directions have been recommended. Hopefully, the findings of upcoming empirical studies will help develop student-centered approaches to EMP and may lead to a supportive environment for the effective teaching of EMP.

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APPENDIX

Table A.1 Various settings of teaching English for Medical Purposes.

	Methods of delivering knowledge		
EMP taught as:	ESP English for Specific Purposes	EMI English-Medium Instruction	CLIL Content and Language Integrated Learning
Definition	"The branch of English language studies that concerns the language, discourse, and culture of English-language professional communities and specialized groups, as well as the learning and teaching of this object from a didactic perspective" (Sarré and Whyte 2016, 146)	"The use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language of the majority of the population is not English" (Macaro et al. 2018, 37)	"CLIL is an approach in which a foreign language is used as a tool in the learning of a non-language subject in which both language and the subject have a joint role" (Coyle, 2002)
Level	Higher education	Higher education	Primary and secondary education
Typically taught by	Mainly non-native, trained/qualified English language teachers who specialize (by self-teaching) in the field of medicine/health sciences, usually without any formal training in HS	Non-native (or native) university lecturers (medical professionals) with English knowledge between B2–C2 (usually without pedagogical training)	Non-native (or native) teachers who received training in the given subject (e.g., biology, physics) AND in English (usually trained in CLIL)
Learners	1) Non-native (undergraduate) medical students (rarely beginners) 2) Non-native postgraduate medical professionals (rarely beginners) 3) Non-native EMI content teachers teaching in international training programs (Morell 2020)	Non-native (occasionally native) university students at medical schools where the medium of instruction is English (international medical programs) (not beginners)*	Non-native primary and secondary school students in countries where English is not the first language
Purpose	Learning medical (technical and non-technical) vocabulary, written and verbal interprofessional (e.g., between a medical doctor and a nurse) and intraprofessional communication (e.g., doctor−doctor communication, referrals) and doctor−patient communication + English for Academic Purposes (EAP)	Content enjoys priority. Some incidental language learning may take place.	Content and English language are equally taught and assessed.
Typical settings in terms of EMP	EMP (elective or compulsory) courses are offered to medical students at medical schools	EMP is used/needed by non-native university lecturers (typically holding a degree in Medicine) to deliver knowledge on their particular subject to non-native/native students attending English-medium medical education	*An intersection where teaching EMP is similar to CLIL: language (EMP) teachers of preparatory courses of (international medical programs) at medical schools are often required to explain content when teaching*

	programs of medical schools (international medical programs)	*medical terminology and vice versa, content teachers (medical educators) find it sometimes necessary to correct certain language-related mistakes or explain language-related problems*

*Our personal experience aligns with literature findings (Bo et al. 2022; Chan et al. 2022): non-native students within the EMI setting may also require EMP training. These 'international' students admitted to medical schools where the medium of instruction and communication is English, often have intermediate to proficient general English knowledge. However, they likely received their former education (e.g., biology, chemistry, physics) in their mother tongue. Thus, when they enter English-medium medical education, they are expected to understand a highly complex content in 'medical English' the terms of which they are only vaguely familiar with. Naturally, this affects the efficiency of their learning process.

Table A.2 Needs analyses conducted among learners/users of English for Medical Purposes and their main findings

Author (year of publ.)	Country	Respondents	Most important findings
Tasçi (2007)	Turkey	Medical students	Students were not satisfied with the English knowledge of their language teachers or the available teaching materials.
		Lecturers	Lecturers rated the importance of EMP higher than students.
Hwang (2011)	Taiwan	Medical students	Students suggested: first-year students should take reading classes, second-year students listening classes, and third-year students conversation classes.
Epifani (2016)	Italy	Respondents from all fields of HS	75% of the respondents stated that they needed English in their work
Karimnia and Khodashenas (2018)	Iran	Medical students	1) Students use their English reading skills most frequently. 2) They self-reported the highest level of proficiency in reading.
Lodhi et al. (2018)	Pakistan	Medical doctors working in academia	Large gap between the competencies that the doctors acquired and the language skills they want to achieve.
		Medical students	Strong demand for EMP is detected among the students.
Safiyeh (2021)	Palestine	Medical students	1) Students are most satisfied with their reading skills and least satisfied with writing skills. 2) 58% said that EMP courses are not intensive enough to enable them to speak confidently in communication situations.
		EMP teachers	Four basic skills are equally needed, but the greatest need: developing writing skills.

CHAPTER THREE

From theory to instrument: Developing an L2 motivational self system-inspired questionnaire

(Study 2)

In this chapter, we include our article (Stötzer et al., 2025c) introducing the process of developing the student EMP motivation questionnaire, published in a Q2-ranked journal. The study is presented in the dissertation exactly as published in the journal, with no content alterations, and is provided in a searchable format. The published study is open access and freely available. In the Introduction and Discussion sections of this dissertation, this article is cited as (Stötzer et al., 2025c).

Authors	Year	Title	Journal	SJR	
Stötzer, A., Farkas, É. Bagyura, M.	2025	From theory to instrument: developing an L2 motivational self system-inspired questionnaire	*Educational Process: International Journal*	Q2 Education	MTMT
Published as	Stötzer, A., Farkas, E., & Bagyura, M. (2025). From theory to instrument: Developing an L2 motivational self system-inspired questionnaire. *Educational Process: International Journal*, *16*(1), e2025252. https://doi.org/10.22521/edupij.2025.16.252				

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From Theory to Instrument: Developing an L2 Motivational Self System-Inspired Questionnaire

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Research Article

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Abstract

Background/purpose. This study presents the development of a novel questionnaire to assess medical students' motivation to learn English for Medical Purposes (EMP), addressing a gap in existing tools tailored to specific language contexts. Based on Dörnyei's L2 Motivational Self System, the questionnaire uniquely contextualizes its items to address the specific circumstances of medical students.

Materials/methods. Data were collected from 283 medical students (undergraduate, years 1 to 6) studying in programs with Hungarian as a medium of instruction at the four medical schools of Hungary. The reliability of the variables for each dimension was verified by Cronbach's α and McDonald's ω. The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity confirmed the data's suitability for principal component analysis (PCA), which was conducted to establish the structure of variables for each dimension.

Results. The PCAs demonstrated that the adapted questionnaire has a clear and interpretable component structure. The findings reveal that the respondent medical students are largely intrinsically motivated, driven by constructs such as the Ideal L2 Self and Self-Efficacy.

Conclusion. This research contributes an empirically tested, adaptable instrument for measuring EMP motivation across diverse national contexts and underscores its potential to inform targeted curricular innovations that enhance engagement through authentic, goal-oriented educational practices.

1. Introduction

In an increasingly globalized academic and healthcare environment, the ability to use English for Medical Purposes (EMP) has become an essential component of medical students' professional development. This is particularly relevant in medical education programs where English is not the medium of instruction (non-EMI), yet students are still expected to access international research, engage in cross-border collaboration, and communicate effectively in diverse clinical settings. Understanding student motivation to learn EMP in such contexts is of strategic importance, as it directly influences language learning trajectories, academic performance, and long-term professional engagement. However, the motivational drivers underlying EMP learning in non-EMI contexts remain underexplored. Gaining insight into these key motivational variables is essential for understanding learners' dispositions and designing tailored high-quality EMP instruction. Instructors also need to be aware of these motivational drivers in order to develop pedagogical approaches that are responsive to students' specific learning needs. However, developing context-sensitive tools that can reliably capture students' motivational profiles is necessary to achieve this. This study presents the development of a novel questionnaire designed to capture medical students' motivation to learn EMP in non-EMI contexts, with particular attention to the key motivational variables identified within the L2 Motivational Self System (L2MSS).

In today's globalized world, with English becoming a lingua franca and its role in academic discourse increasing (Dörnyei & Ushioda, 2011), universities are shifting their focus from teaching English for General Purposes (EGP) to English for Specific Purposes (ESP) (Breeze, 2020; Hyland, 2022). Learning English is increasingly becoming a self-evident, natural part of education (Al-Hoorie, 2017). So much so that Graddol (2006) points out that the mastery of English can gain no competitive advantage, while this may hold true for EGP, it does not necessarily apply to ESP, including EMP. EMP is a specialized branch of ESP that focuses on developing the language skills required by healthcare professionals and students to communicate effectively in medical settings. This includes mastering medical terminology, understanding professional discourse, and applying these skills in patient care, medical education, and research. The use of the term EMP is not consistent in the literature. This inconsistency arises from the broad, general interpretation of the word medicine in English, referring to any branch of medical science. Therefore, depending on the author's view, in some of the studies, learners of EMP involve medical students only, while in other studies, students of other health professions (dentistry, physiotherapy, nursing) are included as well (Stötzer & Farkas, 2024).

As Amano et al. (2023) highlight, science can be costly for non-native English-speaking scholars who face significant challenges due to language barriers. Non-native speakers often spend considerably more time on reading and writing in English and encounter higher rejection rates due to language issues. These obstacles can limit conference participation, hinder publication opportunities, and add financial and mental health burdens, especially for early-career researchers. Therefore, it can be inferred that mastering EMP or English for Academic Purposes (EAP) (or English for Research and Publication Purposes, a term introduced by Flowerdew and Habibie in 2021) early in one's career could save valuable time and resources in the medical profession as well.

The perceived and recognized need for ESP is also evident in medical schools, where teaching and learning EMP is gaining importance worldwide (Ahmed, 2022; Johnson & Tweedie, 2024; Tweedie & Johnson, 2022), especially in programs where the medium of instruction is not English (non-EMI programs). It should be emphasized that teaching and learning EMP is largely different from teaching and learning EGP in several ways: (1) EMP is predominantly taught at medical schools; (2) The learners already have a certain level of English knowledge; (3) The learners are considered adults in the sense that they are over 18 years of age, and it is known that adult language learners generally take a more proactive role and use a variety of resources to promote their language learning (Papi & Hiver, 2020, p. 20); (4) EMP is learnt for a purpose; it is considered a tool in the hands of its users

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(Dudley-Evans & St John, 1998, pp. 4–5), as Hyland (2022) aptly describes ESP as being "unashamedly applied"; (5) This purposeful nature aligns with the defining characteristic of all subcategories of ESP, including EMP: they are inherently goal-oriented, as learners' needs are driven by their future academic or occupational goals. In addition, nowadays, English must be separated from other languages in the sense that English is becoming a basic educational skill (Dörnyei & Ushioda, 2011, p. 72).

As a result of the aforementioned differences, the motivation for learning EMP and EGP may vary. Based on the literature and previous research findings, it can be stated that the characteristics that differentiate learning EMP from learning EGP can significantly influence student motivation. Understanding student motivation in learning EMP would be crucial because it can provide useful insights for language instructors and decision-makers alike: (1) It can support the development of curricula and teaching methods tailored to medical students' needs (Demír & Hamarat, 2022). (2) Understanding the specific motivational factors can lead to improved educational outcomes. (3) Mastery of EMP enables students' integration into the international scientific community and provides access to the latest research findings. As practicing doctors, they will be able to read and author English-language articles, participate in international conferences, and collaborate in international medical and scientific initiatives, further contributing to scientific progress. In the long term, this can benefit patients by raising the quality of healthcare and, consequently, increasing the number of healthy life years. (4) By deeply understanding students' motivation in learning EMP, we enhance our ability as instructors to inspire and motivate them effectively (Ushioda, 2022). This is how investigating and gaining knowledge about (medical) students' motivation can be put to practical use, thereby bridging theory and practice.

To date, studies on language learners' motivation in the context of ESP (including EMP) are scarce (Martín-González & Chaves-Yuste, 2024), and we could not find any that comprehensively assess medical students' motivation to learn EMP. This highlights a clear gap in the literature, particularly in relation to the development of context-sensitive and theoretically grounded measurement tools in non-EMI medical settings. While previous studies have examined motivation in second language acquisition more broadly, the specific context of EMP in non-EMI medical education has remained largely unaddressed. Existing tools do not adequately reflect the distinctive needs, goals, and professional trajectories of medical students learning EMP. Thus, our aim was to develop a questionnaire suitable for assessing medical students' motivation to learn EMP. Given the high stakes of professional communication in medicine, developing a valid and reliable tool to explore student motivation in EMP contexts can support more informed instructional design, curriculum planning, and teacher training.

This article begins with an overview of the relevant literature, discussing why scales based on Dörnyei's motivational theory were deemed appropriate for adaptation in measuring student motivation. The methodology section then details the objectives, research questions, participants involved, the questionnaire development process, and the conditions of data collection followed by the methods we applied to identify the component structure. Finally, the Discussion and Conclusion sections answer the research questions and concisely summarize the findings and implications.

2. Literature Review

In the following sections, we examine the motivational theories that directly influenced the development of the questionnaire items on EMP learning motivation. These theories had provided the framework for constructing questionnaires in previous studies, and the items of these questionnaires we subsequently contextualized to be tailored specifically for students studying EMP. While studies on language learning motivation are abundant (Al-Hoori, 2017, 2018; Boo et al., 2015;

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Liu, 2024; Mahmoodi & Yousefi, 2022), few focus specifically on the unique motivational factors specific to learning ESP, let alone EMP.

The intrinsic vs extrinsic dichotomy or continuum has long served as a foundational framework in motivation research. Deci and Ryan's Self-determination Theory (Ryan & Deci, 2000a; Ryan & Deci, 2017) elaborates on various types of intrinsic and extrinsic motives. Intrinsic motivation is self-rewarding, meaning that we engage in an activity because it is inherently interesting or enjoyable (Ryan & Deci, 2000b), a quality that Brown (1994) highlights as particularly important in the context of language learning. On the other hand, in the classic case of extrinsic motivation, one is propelled (coerced, seduced, pressured) to act. Notably, Ryan and Deci (2017) argue that this intrinsic-extrinsic dichotomy is better conceptualized as a continuum, sometimes referred to as the autonomy–control continuum. Empirical studies within the ESP field reflect this complexity: Pavel (2020), for instance, examined tertiary students' motivation to learn EMP in Romania (see Table 1), initially hypothesizing that extrinsic motivation, especially the goal of working abroad, would be dominant. Surprisingly, her findings revealed stronger intrinsic motivation. Similarly, Brady (2021) found intrinsic motivation to be a stronger predictor of L2 achievement in ESP contexts than extrinsic motivation.

Integrative and instrumental motivation, also referred to as orientation or attitude, are frequently used concepts in motivation research, initially introduced by Gardner and Lambert (1959, 1972). According to Brown (1994), a distinction should be made between integrative and instrumental orientations, and we should not use the word motivation instead of orientation. "Orientation means a context or purpose for learning; motivation refers to the intensity of one's impetus to learn" (Brown, 1994, p. 75). Originally inspired by the Canadian context, the integrative component of language learning was intended to describe one's interest in language learning to interact with valued members of another community. Gardner (2001, p. 1) later admitted that many other meanings had become attached to the term. When the relevance of this concept was questioned in monolingual societies like Hungary, Csizér and Dörnyei (2005) contextualized integrative motivation as an aspiration to become a "cosmopolitan citizen of the world." This perspective aligns well with the goals of EMP, particularly EMP, where learners are often motivated to become members of the international medical discourse community, whether as readers or authors of medical literature, university lecturers, or physicians working abroad or attending international conferences. This perspective is echoed by Tomak and Šendula-Pavelić (2017), whose study shows that students of medical and healthcare studies are more integratively motivated – they learn EMP because they want to integrate into the target language society or better collaborate with their colleagues belonging to the target language (discourse) community (Tomak & Šendula-Pavelić, 2017, p. 166). Instrumental orientation is characterized by practical, goal-oriented factors such as earning a degree or advancing one's career. This is especially relevant in learning EMP (ESP), and this type of motivation can also positively affect language learning (Gardner & MacIntyre, 1991). Research indicates that university students often have instrumental motivation in learning foreign languages (Marošan & Marković, 2019; Rodríguez Muñoz et al., 2024) as observed among Japanese medical students, who are primarily motivated by the need to read research, communicate internationally, and attend global conferences (Mathis et al., 2021). English serves as a "vocational passport" for these students into the international medical community. This also highlights that the desire for belonging can be interpreted variably, sometimes aligning with integrative motivation and other times with instrumental motivation, making it challenging to find a clear boundary between the two (Csizér & Kormos, 2009). Taguchi et al. (2009) refined the concept of instrumental motivation by distinguishing between promotion-driven (aspiration-focused) and prevention-driven (avoidance-focused) aspects of Instrumentality. In this framework, Instrumentality-Promotion is linked to achieving ideal outcomes, such as career success, while Instrumentality-Prevention involves avoiding negative consequences, such as avoiding failure or meeting obligatory requirements. Notably, Brown

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(1994) points out that the dichotomy of instrumental and integrative orientations cannot be confused with extrinsic and intrinsic motivation.

Dörnyei (2005, 2009) fused second language (L2) motivation with the psychological theories of the self through the L2 Motivational Self System (L2MSS). L2MSS is based on Gardner's model of motivation, Markus and Nurius' possible selves (Markus & Nurius, 1986), and Higgins' Self-Discrepancy Theory (Higgins, 1987). "Possible selves are visions of the self in a future state; they represent the individuals' ideas of what they might become, what they would like to become, and what they are afraid of becoming, and thus they denote a unique self-dimension that refers to future rather than current self-states" (Markus & Nurius, 1986 cited in Dörnyei & Ushioda, 2011, p. 80). In 2015, Boo et al. found that Dörnyei's L2MSS was the most commonly applied research paradigm in the field of L2 motivation, and this has not changed since (Fan, 2024). According to L2MSS, language learners' motivation is directly influenced by three factors: (1) The students' ideal L2 self, i.e., to what extent they can see/visualize themselves as they are using the foreign language at a high level in the future; (2) The students' ought-to L2 self, i.e., "the attributes that one believes one ought to possess to meet expectations and to avoid possible negative outcomes" (Dörnyei, 2009, p. 29); (3) The students' motivation is also shaped by their language learning experiences (Csizér, 2012, 2019).

Several factors supported the suitability of L2MSS for our research goals. First, according to Dörnyei and Ryan (2015), it represents a point of intersection between theory and practice in the psychology of language learning. Second, the L2MSS framework has gained widespread acceptance for its adaptability across contexts (Csizér, 2019; Liu, 2024). This adaptable nature was also highlighted by Lanvers (2016); however, they warn that studies need to look at different learner groups with different contextual factors, and the L2MSS landscape has long been missing the ESP context (Brady, 2021, p. 112). Third, the L2MSS has been extensively applied to university students (Boo et al., 2015; Liu, 2024); however, studies often do not specify whether these students were learning EGP or ESP.

3. Methodology

3.1. Research Gap and Research Questions

To date, research on language learners' motivation in the context of ESP, particularly EMP, remains limited (Martín-González & Chaves-Yuste, 2024). Internationally, few studies (Table 1) have been specifically designed to capture the motivation of medical students to learn EMP in non-EMI programs (EMI context: Ahmed, 2022; Chan et al., 2022).

Table 1. Recent studies on medical students' EMP learning motivation in non-EMI programs

	Location	Number of participants	Examined dimensions	Number of items on motivation	Likert scale	Data Analysis	Main findings
Tomak and Šendula-Pavelić (2017).	Croatia	242	instrumental, integrative, personal	12	5	PCA Cronbach's α	students were more integratively motivated
	final-year students at the Faculty of Medicine and the Faculty of Health Studies at the University of Rijeka						
Marošan & Marković	Serbia	61	instrumental, integrative	20	6	descriptive	

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(2019).	1st-year medical students of the Faculty of Medicine, University of Novi Sad						high degree of instrumental and integrative motivation
Pavel (2020)	Romania	329	extrinsic, intrinsic	10	5	descriptive	students scored slightly higher in intrinsic motivation
	1st- and 2nd-year undergraduates majoring in four specializations at the Faculty of Medicine, Transilvania University of Brașov: General Medicine, General Nursing, Balneo-Physio-Kinesiotherapy and Recuperation, and Clinical Laboratory						
Demír and Hamarat (2022).	Turkey	320	extrinsic, intrinsic, integrative	14	5	PCA EFA CFA Content validity ratio	The developed tool is valid and reliable in identifying the language learning motivations of medical students
	1st- and 2nd-year students at the Faculty of Medicine, Çanakkale Onsekiz Mart University						
Hosseini and Shokrpour (2019).	Iran	106	teacher characteristics & teaching material; immigration & personal aspirations; instrumental motivation; intrinsic / integrative motivation; learning environment	30	5	EFA Cronbach's α ANOVA	students who studied medicine were more motivated than nursing students
	1st-year nursing and medical students at the University of Medical Sciences, Shiraz						
Mathis et al. (2021)	Japan	113	instrumental, integrative	16	5	descriptive Cronbach's α	Students were primarily instrumentally and vocationally motivated
	2nd-year medical students at the medical faculty of a national university						
Mayers et al. (2023).	Japan	355	instrumental, vocational	10	6	one-way ANOVA	Students are strongly instrumentally and vocationally motivated
	three groups of 2nd-year medical students at a large national university						

Note. *EMP = English for Medical Purposes; EMI = English as a Medium of Instruction; non-EMI = (programs where) English is not the medium of instruction; PCA = principal component analysis; Cronbach's α = Cronbach's alpha coefficient; EFA = exploratory factor analysis; CFA = confirmatory factor analysis; ANOVA = analysis of variance.*

These studies tend to focus on the instrumental vs integrative or the external vs internal motivation dichotomy, occasionally incorporating other dimensions, yet none apply Dörnyei's L2MSS. Addressing this gap, we aimed to develop a questionnaire to measure medical students' motivation to learn EMP. In this article, our research questions (RQ) are as follows:

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RQ1: Are the scales adapted and contextualized to assess the motivational disposition of Hungarian medical students in the context of learning EMP appropriately structured and internally consistent?

RQ2: Do the extracted principal components form coherent dimensions, and what relationships exist among these dimensions?

3.2. Developing the EMP Motivation Questionnaire

In developing the scale, we drew on Brady's (2019) validated Motivational Factors Questionnaire, which examines Spanish learners of English. It was inspired by Dörnyei's motivational constructs and is based on earlier studies by Ryan (2009) and Taguchi et al. (2009). Table A.1 in the Appendix shows the scales used in previous studies compared to the scale structure we applied in the Main Study (asterisks indicate scales used in the Pilot Study). Figure 1 illustrates the steps we took in developing the questionnaire. In adapting the scales, we translated (into Hungarian) and contextualized the relevant items. Our goal was for the students to think directly about their experiences in their EMP classes when responding.

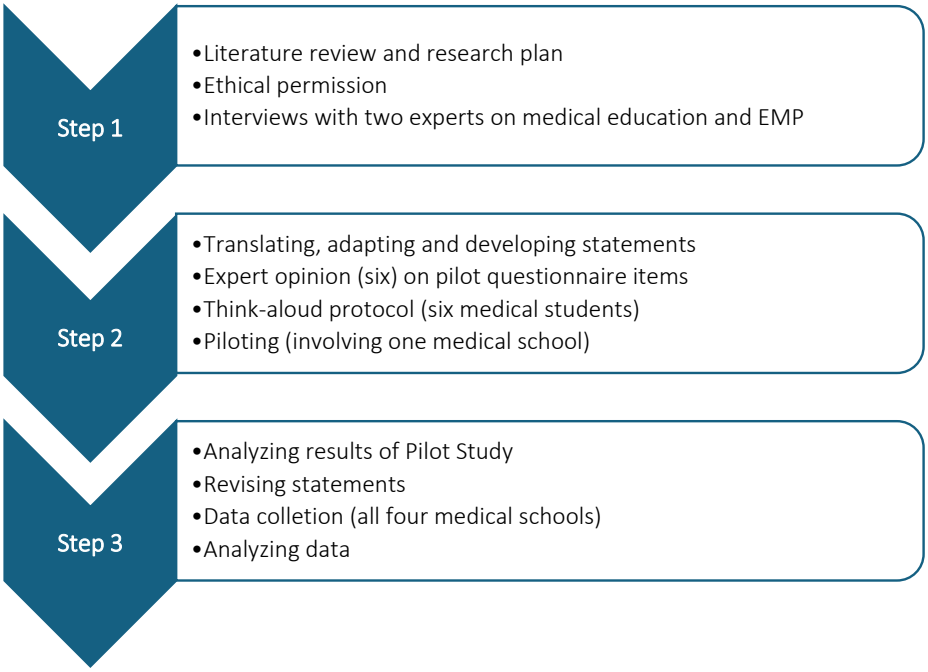

Figure 1. Steps of developing a questionnaire on EMP learning motivation

Note. EMP = English for Medical Purposes.

Based on interviews with experts and our experience as EMP instructors, certain items from previous studies (e.g., cultural interest, parental encouragement) were omitted at the beginning. While retaining the original intent of the selected scale items, we adapted and contextualized them based on insights from the prior Pilot Study, expert interviews, students' views on EMP, and our experience as EMP instructors (Table 2).

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Table 2. Examples of rewording and/or embedding in the context of some scale items

	Scales	Items/Statements in Brady (2019)	Statements with their identifying number as examples of rewording and/or embedding in context*
Minor modifications	Self-Efficacy	I find it quite easy to learn English.	Q44 I find learning EMP fairly easy.
	Intended Learning Effort	I will likely continue to study English after my degree.	Q11 I will probably continue to improve my EMP even after I graduate.
Major modifications	Instrumentality – Prevention	If I don't learn English, I can't work in what I want.	Q31 EMP is important to me because I do not want the lack of it to limit my future opportunities.
	Instrumentality – Promotion	Learning English is important to me because it will be essential for work.	Q36 Knowing EMP is essential to me because I think I will need it as a practicing doctor.
	Ideal L2 Self	When I think of my professional career, I see myself using English at work.	Q18 I see myself as a confident user of EMP in the future.
	Ought-to L2 Self	Actually, I feel obliged to learn English; it is not my desire.	Q41 I am only studying EMP because it is required by my medical school for graduation.
New items	Attitude to learning EMP	*e.g.,* Q48 It almost feels natural to me that learning English is necessary, and now it's time to learn EMP.	
	L2 Anxiety	*e.g.,* Q72 In EMP class, it bothers me when I hear my pronunciation sound too Hungarian (*Hunglish*).	
	Self-Confidence	*e.g.,* Q7 I think I could make myself understood in any professional (medical) situation in English.	
	Integrativeness	*e.g.,* Q29 Knowing EMP is important to me because it allows me to become a part of the international professional (publishing and scientific) community.	

** The distributed questionnaire was in Hungarian. The items indicated here have been translated (back) to English to demonstrate the extent of modifications.*

***Note**. EMP = English for Medical Purposes*

The scales of Self-Efficacy and Intended Learning Effort are based on Brady's study (2019), and we barely changed them. Self-efficacy (coined by Bandura, 1977) is often seen as a key component of motivation: learners who believe in their success in language learning are more able to envision themselves as future English speakers. Intended Learning Effort, which is often a self-report of motivated behavior, has been found to be the most common criterion variable used in L2MSS studies in Al-Hoorie's (2018) meta-analysis. Statements of Instrumentality-Prevention, Instrumentality-Promotion, Ideal L2 Self, and Ought-to L2 Self were included in Brady's (2019) study but underwent major modifications due to contextualizing (Table 2). The statements of Attitude to learning EMP, L2 Anxiety, Self-Confidence, and Integrativeness were developed specifically for this study. In our questionnaire, in the context of EMP, the statements assessing Integrativeness are meant to reflect the EMP learner's desire to belong to the international medical discourse community by reading and writing English-language medical literature, attending international conferences, and joining

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international medical societies. Integrativeness, i.e., belonging to the medical community, figuratively, refers to belonging to the English-language discourse community (e.g., physicians practicing in Hungary will need English if they want to publish articles, hold conference presentations, or simply keep up with the rapidly developing medical science as readers of the literature). Literally belonging to the target language community may as well refer to working abroad and actually being part of the English-speaking medical context. In our view, the latter is not a negligible aspect either, since, in exploring the motivations of Hungarian medical students to learn EMP, we must take into account that many of them are planning their future abroad. To accomplish this goal, an advanced level of English (and probably the knowledge of another foreign language) is essential. Table 3 shows the scales we used in the Main Study, along with the number of items. For the entire questionnaire in Hungarian and English, see Table A.2 in the Appendix.

Table 3. Scales and the number of items used in the Main Study

Criterion measure
0. Intended Learning Effort 5 items on medical students' commitment and willingness to invest effort in developing their EMP skills
Motivational Variables *(relating to the learners' motivation, goals, and expectations in learning EMP)*
1. Ideal L2 Self 7 items on medical students' aspirations for achieving fluency in EMP, envisioning themselves as competent communicators
2. Ought-to L2 Self 5 items on medical students' perceptions of external expectations and social pressures to learn EMP
3. Integrativeness 4 items on medical students' desire to be part of the international medical discourse community
4. Instrumentality-Promotion 12 items on medical students' recognition of career and academic advantages of learning EMP
5. Instrumentality-Prevention 6 items on medical students' concerns about the potential disadvantages of not mastering EMP
Affective (emotional) Variables *(relating to the learners' emotions, attitudes, and feelings during the learning process of EMP*
6. Attitude to EMP learning 14 items targeting medical students' attitude toward learning EMP
7. L2 Anxiety 7 items on medical students' fear of judgment in terms of EMP
Cognitive/Behavioral Variables *(pertaining to learners' beliefs in their own abilities and their confidence in using the language)*
8. Self-Confidence 6 items on medical students' self-perception of EMP proficiency
9. Self-Efficacy 4 items on medical students' belief in their own ability to succeed in learning EMP

Note. *EMP = English for Medical Purposes; L2 = Second Language.*

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3.3. Data Collection and Participants in the Pilot Study and Main Study

The Pilot Study was conducted in November 2022, involving 103 Hungarian medical students from a single medical school in Hungary who had attended at least one semester of EMP classes. The pilot questionnaire was distributed via an online link posted on the virtual news board by the Registrar's Office. Based on the results of the Pilot Study, we identified several areas for improvement: (1) We concluded that the Pilot Study's distribution method did not reach students effectively. Consequently, for the Main Study, conducted between February and April 2024, we adjusted the approach by sending the online questionnaire via email directly to students through the Registrar's Offices of all four medical schools in Hungary. (2) Due to a weak Cronbach's α, we increased the number of items in the construct of Integrativeness. (3) In the construct L2 Anxiety, one double-barreled item was split into two separate items to improve clarity and reliability. (4) Constructs Self-Efficacy and Intended Learning Effort were included only in the Main Study. Self-efficacy was added because of its strong theoretical link to motivation, while Intended Learning Effort was incorporated as a reliable criterion measure, as demonstrated in previous research.

The Main Study's questionnaire was available in Hungarian to medical students (undergraduate, years 1 to 6) in Spring 2024. Participants consented to their data and responses being used for research purposes, with assurances of anonymity and privacy (Table 4).

Table 4. Characteristics of Main Study

Participants	Hungarian medical students studying in non-EMI programs (medium of instruction: Hungarian) at the four medical schools of Hungary in years 1 to 6
Participation	Voluntary; no sensitive data is obtained
Inclusion criteria	Student has attended an EMP class at least one semester (n=283)
Distribution	via email sent directly to students through the Registrar's Offices
Available	February to April 2024
Completion time	15–20 minutes
Questionnaire	Self-administered, containing • demographic questions (gender, university year, number of semesters they attended EMP courses, mother tongue, first and second foreign languages, language exams, affiliation) • closed-ended questions (70) on EMP learning motivation (6-point Likert scale) • other questions not covered in this article
Data Analysis	IBM SPSS Statistics 28 and Jamovi 2.5.3

Note. *EMI = English as a Medium of Instruction; non-EMI = (programs where) English is not the medium of instruction; EMP = English for Medical Purposes*

All medical students enrolled in the Hungarian-language programs of the four medical schools operating in Hungary were invited to participate since this study focuses on the EMP learning motivation of native Hungarian students enrolled in the program where Hungarian is the medium of instruction (Hungarian as the medium of instruction, HMI). Hungary's four medical schools offer undivided medical education programs that span 12 semesters. Students can choose between

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programs conducted in Hungarian, English (English as a medium of instruction, EMI), or German. The HMI program is state-funded and primarily serves native Hungarian speakers, while the EMI and German programs, which are self-financed, generally attract international (predominantly non-Anglophone) students. The invitation email was sent to the medical students in the HMI program by the Registrar's Offices of the respective universities, with permission obtained previously from the respective Deans.

The questionnaire was answered by 283 medical students (Figure 2). The sample comprises predominantly female respondents (68.6%), with the largest group being students from the University of Debrecen (46.6%). Most participants are in their first year (45.6%), and over 90% of the respondents have attained B2 or C1 levels in English proficiency.

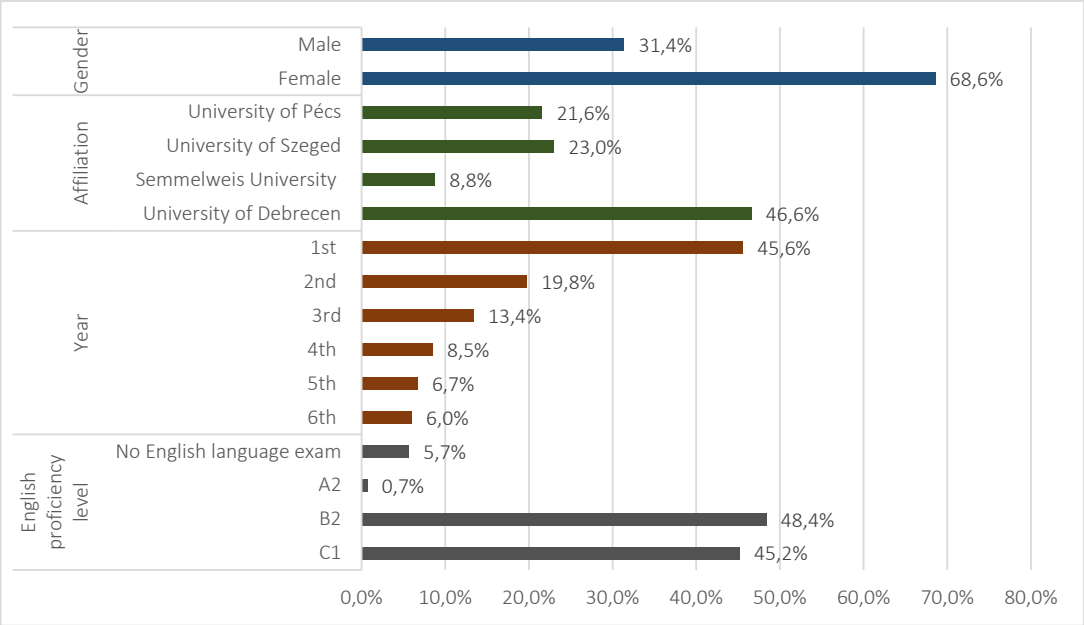

Figure 2. Respondents' main characteristics and English proficiency levels based on their language exams according to the Common European Framework of Reference for Languages (n=283)

3.4. Data Processing

All participants (n=283) provided valid responses to the items measuring specific dimensions of motivation in EMP learning. The analysis relies on the results of the questionnaire's closed-ended questions, which did not allow for "Other" or open-ended responses. Consequently, no data-cleaning procedures were required. Furthermore, as all respondents provided valid answers for all variables used in this article, no adjustments were needed for missing data, and the interpretation of our results is not affected by bias caused by missing data.

3.5. Data Analysis

The normal distribution of the items was tested using the Kolmogorov-Smirnov test and by evaluating skewness and kurtosis statistics, complemented by visual inspection of histograms and Q-Q plots. We conducted 10 separate principal component analyses (PCA), each involving a maximum of 12 items, with data from 283 respondents in every analysis. To ensure the appropriateness of the data for component extraction, we employed the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity.

For component selection, we applied the criterion that only components with an eigenvalue greater than 1 were retained, and each retained component had to explain at least 33% of the

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variance of the original variables (Jolliffe, 2010). We set a component loading threshold of 0.400, considering variables with loadings above this value as significant contributors to the component. The threshold of 0.400 for component loadings was selected based on commonly accepted practices in PCA, where a loading of 0.400 or higher is typically considered to indicate a sufficiently strong association between the item and the underlying factor (Hair et al., 2010). No rotation was performed on the extracted components.

Reliability was assessed using Cronbach's α, with a threshold of 0.7 considered acceptable (Bujang et al., 2018) for internal consistency. When Cronbach's α fell below this value, we still reported it to provide a complete picture of the internal consistency of the components. Given that many Likert-scale variables did not follow a normal distribution, McDonald's ω was also calculated as a measure of internal consistency, applying the threshold of 0.65 (Kalkbrenner, 2021).

Using PCA, we established the structure of variables for each dimension, and after verifying their reliability with Cronbach's α, we created indices. We summed the variable values and divided them by the number of variables, measuring each dimension of student motivation on the original 1-to-6 scale. On this scale, a score of 6 represents the most negative interpretation (strong disagreement) for each variable.

To examine the relative salience of the different motivational factors, we applied paired t-tests to compare the mean scores across the motivational scales. Although the constructs represent distinct psychological dimensions, this approach allowed us to determine which types of motivation students perceived as more or less influential. Similar comparative approaches have been used in motivation research to rank the perceived importance of motivational dimensions (Rambe & Mavhundutse, 2018). Scales with the same superscript letter indicate no significant differences ($p > 0.05$), while scales with different superscript letters represent significant differences ($p < 0.05$) (Table 7).

Spearman's correlation was used to assess the relationships between the scales, aiming to explore how the motivational factors are interrelated. This method was chosen because of the non-normal distribution of the ordinal variables (Ismail et al., 2016).

4. Results

Based on the Kolmogorov-Smirnov test for normality ($p < 0.05$), skewness and kurtosis statistics, and visual inspections using histograms and Q-Q plots, it was evident that the majority of the variables used in the analysis did not follow a normal distribution. Only a few items had skewness and kurtosis values close to zero, while most variables showed notable deviations from normality. The KMO measure and Bartlett's test confirmed the data's suitability for factor analysis across all dimensions of the instrument designed to measure motivation in learning EMP. KMO values ranged from 0.612 to 0.862, indicating sufficient sampling adequacy. Bartlett's test for all components was significant ($p < 0.001$), affirming that the correlation matrix was suitable for PCA.

PCA was conducted to examine the underlying structure of the instrument's scales. For each set of variables, a single principal component emerged, indicating unidimensionality across the constructs. However, for the Attitude to EMP scale, PCA and subsequent reliability analyses revealed two distinct components representing negative and positive attitudes. Some original items were excluded based on PCA and Cronbach's α calculations; these are listed in Table A2 in the Appendix, with retained items shown in Table 5.

The explained variance exceeded 33% across all scales, with values ranging from 46.7% to 72.2%. Most components demonstrated strong representation, with explained variance surpassing 50%, except for Instrumentality-Promotion (46.7%) and Instrumentality-Prevention (47.1%).

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Component loadings ranged from 0.535 to 0.933, reflecting strong item contributions to their respective components. Items within components such as Ideal L2 Self, Intended Learning Effort, and Self-Efficacy consistently exhibited loadings above 0.70, indicating their strong fit within their associated component. Lower loadings, such as Q32 in Instrumentality-Prevention (0.597) and Q2 in Integrativeness (0.598), remained within acceptable ranges (Table 5).

Table 5. Explained variance and component loadings of motivation constructs from PCA

Component	Variance Explained (%)	Item	Component loading	Component	Variance Explained (%)	Item	Component loading
Intended Learning Effort	67.463	Q11	0.612	Attitude to EMP *positive*	54.313	Q25	0.652
		Q59	0.886			Q65	0.829
		Q60	0.933			Q67	0.779
		Q61	0.817			Q68	0.818
Ideal L2 Self	72.211	Q13	0.834			Q8	0.565
		Q14	0.812			Q48	0.665
		Q15	0.726			Q58	0.535
		Q17	0.892	Attitude to EMP *negative*		Q9	0.703
		Q18	0.914			Q10	0.672
		Q19	0.906			Q24	0.688
Ought-to L2 Self	53.925	Q20	0.707	L2 Anxiety	54.270	Q43	0.746
		Q21	0.742			Q46	0.803
		Q50	0.753			Q64	0.831
Integrativeness	48.992	Q2	0.598			Q66	0.758
		Q22	0.823			Q70	0.662
		Q29	0.709			Q71	0.669
		Q42	0.649			Q72	0.670
Instrumentality-Promotion	46.699	Q3	0.649	Self-Confidence	62.744	Q5	0.746
		Q28	0.729			Q6	0.803
		Q33	0.679			Q7	0.831
		Q34	0.701			Q56	0.758
		Q35	0.633			Q57	0.662
		Q37	0.694			Q63	0.669
		Q38	0.693	Self-Efficacy	64.345	Q44	0.833
Instrumentality-Prevention	47.072	Q30	0.800			Q45	0.724
		Q31	0.730			Q62	0.843
		Q32	0.597				
		Q47	0.644				
		Q51	0.639				

Note. *PCA = principal component analysis; EMP = English for Medical Purposes; L2 = Second Language.*

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Cronbach's α was used to assess internal consistency, with seven scales surpassing the threshold of 0.70. Components such as Integrativeness, Instrumentality-Prevention, and Attitude to EMP-Negative exhibited α values slightly above 0.60, while Ought-to L2 Self (0.572) fell below this threshold. These findings suggest varying degrees of reliability, warranting potential refinement of specific scales. Due to the fact that a significant portion of the variables did not follow a normal distribution, the reliability of Cronbach's α is less robust. Consequently, McDonald's ω was also employed to evaluate the internal consistency of the components (Table 6).

Table 6. Internal consistency of motivation constructs: Cronbach's α and McDonald's ω values for PCA Components

Component	Cronbach's α	McDonald's ω
Intended Learning Effort	0.834	0.849
Ideal L2 Self	0.915	0.924
Ought-to L2 Self	0.572	0.574
Integrativeness	0.651	0.665
Instrumentality-Promotion	0.800	0.810
Instrumentality-Prevention	0.689	0.723
Attitude to EMP positive	0.832	0.838
Attitude to EMP negative	0.641	0.649
L2 Anxiety	0.856	0.860
Self-Confidence	0.871	0.882
Self-Efficacy	0.704	0.731

Note. *Cronbach's α = Cronbach's alpha coefficient; McDonald's ω = McDonald's omega coefficient; EMP = English for Medical Purposes; L2 = Second Language.*

We generated indices for each dimension by averaging variable scores on a 1-to-6 scale, where 1 indicates strong agreement, and 6 indicates strong disagreement. Ideal L2 Self had the lowest mean value (2.19), indicating a high level of agreement. In contrast, Ought-to L2 Self had the highest mean value (3.41). The scales' values and standard deviations are presented in Table 7. We reverse-scored two scales to accurately reflect the true ordinal direction of the scales. We conducted paired t-tests to determine which scales showed significant differences. Scales sharing the same superscript letter represent groups where no statistically significant differences were observed ($p > 0.05$). This indicates that students rated these constructs similarly in terms of their motivational importance. Conversely, scales with different superscript letters represent constructs with significant differences in mean values ($p < 0.05$).

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Table 7. Descriptive statistics of EMP motivation scales

Scales	Mean	Std. Deviation
Ideal L2 Self [a]	2.19	1.09
Self-Efficacy [a]	2.22	0.99
Self-Confidence [a]	2.25	0.96
Attitude (positive) to EMP [a]	2.28	0.89
Attitude (negative) to EMP [a]	2.29	1.05
Instrumentality-Prevention [b]	2.44	0.95
Instrumentality-Promotion [b,d]	2.50	0.94
Integrativeness [c,d]	2.59	0.99
L2 Anxiety [c,d]	2.64	1.15
Intended Learning Effort [c]	2.65	1.08
Ought-to L2 Self [e]	3.41	1.16

Note. *EMP = English for Medical Purposes; L2 = Second Language. Superscript letters indicate homogeneous subsets based on post hoc comparisons (p > .05); different letters denote statistically significant differences (p < .05). The values of negatively worded scales (Attitude [negative] to EMP, L2 Anxiety) were reversed for interpretability.*

We used Intended Learning Effort as the criterion measure, which correlated significantly $p < 0.05$) with all scales except Attitude to EMP-Negative ($p > 0.05$).

5. Discussion

5.1. Answering RQ1: Are the scales adapted and contextualized to assess the motivational disposition of Hungarian medical students in the context of learning EMP appropriately structured and internally consistent?

The findings of this study confirm the internal structure and reliability of the scales adapted for Hungarian medical students in the context of learning EMP. The PCA demonstrated that most components were unidimensional, with explained variances exceeding the acceptable threshold of 40% and item loadings consistently above 0.6 (Hair et al., 2010; Tabachnick & Fidell, 2013). The 40% threshold for explained variance is a commonly accepted benchmark in PCA, particularly in social science research. It represents the minimum proportion of variance that a factor or component should explain to be considered meaningful in the context of the study. The high explained variance for most scales demonstrates that the instrument effectively captures the dimensions it is designed to measure. However, the relatively lower explained variance for Instrumentality-Promotion and Instrumentality-Prevention suggests that these components may be influenced by additional factors not accounted for in this study. Future research could explore these dimensions further to refine their measurement.

Reliability analysis further supported the robustness of the scales, with seven constructs surpassing the commonly accepted Cronbach's α threshold of 0.7. Cronbach's α values indicate

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strong internal consistency for most scales, supporting their reliability and coherence. The use of McDonald's ω provided additional support for internal consistency, particularly for scales with slightly lower α values, such as Ought-to L2 Self (α = 0.572). The lower α values for Ought-to L2 Self suggest potential limitations in this scale, possibly due to item variance within the construct. The lower reliability of this scale suggests that they may benefit from further refinement, such as adding or revising items to increase coherence. These findings are consistent with prior studies underscoring the difficulties of capturing external motivational factors, such as peer influence or institutional expectations, which may exert less influence on our sample. Despite these limitations, Cronbach's α values across most scales confirm the instrument's reliability and support its use in assessing diverse motivational factors in EMP learning contexts. Thus, in answer to our first research question, it can be concluded that, based on the PCA and reliability analysis, the adapted scales are suitable for assessing the motivational disposition of Hungarian medical students learning EMP, offering a reliable tool for future research in this area.

Positioning our study within the context of previous research (with the caveat that we contextualized the items), we observe that our findings align with international data, which show that the Ideal L2 Self consistently emerges as a strong motivational factor in L2 learning (Fajt & Bánhegyi, 2023; Huhtala et al., 2019; Pálinkás, 2012; Zeng & Jia, 2023). Hungarian medical students appear to be driven by a vision of themselves as proficient and competent users of English (for Medical Purposes) in professional settings. Nevertheless, it has to be mentioned that the studies mentioned above were not conducted among medical students learning EMP. If we concentrate on the studies involving medical students (Table 1), where not the L2MSS motivational theory was used, we can see that our findings show that on the external-internal motivation continuum, our respondents' motivation leans toward the internal end, which is in line with the international studies conducted within this context. The motivational profile of the respondents suggests a predominance of intrinsic motivation, as reflected in the low mean scores (1: strongly agree; 6: strongly disagree) for most scales, particularly Ideal L2 Self and Self-Efficacy, suggesting that the students are learning EMP out of personal drive, having internalized and recognized the necessity of EMP. Our results are also in line with previous research (Table 1), emphasizing the goal-oriented nature of learning ESP (including EMP): in the context of the instrumentality-integrativeness dichotomy, Instrumentality plays a predominant role. Students are motivated to learn EMP as they perceive it as a tool that supports their career advancement. The relatively weaker role of Integrativeness, on the one hand, may be attributed to the large number of lower-year students in the sample (Figure 2).

5.2 Answering RQ2: Do the extracted principal components form coherent dimensions, and what relationships exist among these dimensions?

The results reveal coherent and theoretically grounded dimensions of motivation in EMP learning. Constructs such as Ideal L2 Self, Intended Learning Effort, and Self-Efficacy demonstrated high levels of explained variance and strong reliability, underscoring their centrality in shaping students' motivation. Notably, the emergence of two distinct components for Attitude to EMP (positive and negative) highlights the complexity of students' perceptions. While many medical students recognize the importance of EMP for their professional development, some harbor negative attitudes, which may be attributed to differences in their individual experiences and expectations, as well as to whether EMP classes are mandatory.

The correlation analysis identified significant relationships between Intended Learning Effort and most motivational dimensions. Constructs such as the Ideal L2 Self and Self-Efficacy showed the strongest correlations, indicating that students' ability to envision themselves as proficient EMP users and their confidence in their abilities are key drivers of their willingness to invest effort. Conversely, the weaker relationship between Intended Learning Effort and Attitude to EMP-Negative suggests

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that negative attitudes, while present, may not directly deter effort but could influence other dimensions, such as anxiety or self-confidence. The findings underscore the importance of fostering positive attitudes and self-efficacy to sustain motivation. The fact that Intended Learning Effort correlated with all other scales supports the theoretical expectation that students' motivated behavior correlates with their long-term investment in EMP, validating Intended Learning Effort as an effective criterion measure.

Brady (2019) examined the motivation of Spanish university students learning English as a second language, using a questionnaire grounded in the L2 Motivational Self System. Although the study did not target medical students or the EMP context, it similarly found that Intended Learning Effort strongly correlated with constructs such as the Ideal L2 Self and Self-Efficacy. These findings support the theoretical assumption that students' future self-concepts and self-beliefs are key drivers of motivated behavior, an observation mirrored in our study on EMP learners.

6. Conclusion

This study demonstrated the process of creating a questionnaire that can effectively capture medical students' motivation to learn EMP. The questionnaire we developed is based on Dörnyei's motivational framework. The novelty of this questionnaire is that we contextualized the items belonging to the L2MSS and other dimensions we deemed essential in surveying medical students' motivation to learn EMP. The findings confirm that the developed questionnaire reliably captures medical students' motivation to learn EMP. The preliminary results presented here, which aim to validate the functionality of the questionnaire, reveal that students' motivational profiles are predominantly shaped by constructs such as the Ideal L2 Self, L2 Self-Efficacy, Self-Confidence, and medical students' Attitude to EMP. The findings show that the respondent medical students are largely intrinsically motivated, perceiving EMP as a valuable tool for their academic and professional pursuits. These findings are consistent with similar international studies, further validating that the developed questionnaire effectively captures students' motivation to learn EMP. A detailed analysis of the specific results will be presented in a separate forthcoming publication.

7. Recommendations

Developing such a specific questionnaire is important because understanding the specific motivational factors can lead to improved educational outcomes. Understanding medical students' motivation can inform targeted curriculum adjustments, allowing educators to prioritize and enhance motivational factors that resonate most strongly with students. The strong influence of the Ideal L2 Self suggests that by generating this vision, for instance, by integrating authentic materials and scenarios, field trips, and simulations, instructors can engage students more effectively. Incorporating goal-oriented activities that emphasize the practical applications of EMP in medical practice could also enhance engagement. Such alignment of theoretical constructs with practical applications underscores the utility of this study as both an empirical contribution and a tool to support innovations in both curriculum design and teaching methodologies for EMP.

8. Strengths and Limitations

One of the key strengths of this study is the development of a context-sensitive questionnaire specifically designed to explore the motivation of medical students learning English for Medical Purposes in non-EMI settings. By focusing on a learner group that has received limited attention in previous empirical research, the study contributes valuable data to the field of L2 motivation and expands its scope beyond traditionally studied populations. Furthermore, the questionnaire developed in this study is not only a research instrument but also has clear, practical applications: it can be used as a diagnostic and curriculum development tool, enabling educators and course designers to align instructional strategies with the motivational profiles and needs of their students.

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However, a few limitations should be acknowledged. First, the lower reliability scores for Ought-to L2 Self indicate the need for refinement in future iterations of the questionnaire. This could involve rephrasing items or adding new ones to better capture these constructs. Second, the reliance on self-reported data introduces the potential for response bias, which future studies could mitigate through triangulation with qualitative data, such as interviews or focus groups. Third, the questionnaire was distributed among exclusively Hungarian medical students in non-EMI programs, which seemingly limits the generalizability of the findings. However, the study's methodology and the questionnaire items are broadly applicable, offering a model to assess EMP motivation across diverse national contexts. Future research could explore the applicability of the scales in different cultural and institutional contexts or examine longitudinal changes in EMP learning motivation over the course of medical training.

Declarations

Author Contributions. A.S.: Literature review, Conceptualization, Methodology, Investigation, Writing – original draft, Visualization, Data analysis. É.F.: Writing - Review & Editing, Supervision. M.B.: Data analysis. All authors have read and approved the published version of the article.
Conflicts of Interest. The authors declare no conflict of interest.
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Ethical Approval. Ethical approval for this study was obtained from the Ethics Committee of the Doctoral School of Education of the University of Szeged (approval ID: 1/2023)
Data Availability Statement. The data can be provided by the corresponding author upon request.

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Appendix

Table A.1. Motivational scales used in previous studies and contextualised in the Main Study (EMP Motivation Questionnaire)

Ryan (2009)	Number of items	**Taguchi, Magid & Papi (2009)**	Number of items*	**Brady (2019)**	Number of items	**EMP Motivation Questionnaire (2024)**	Number of items
Intended learning effort	8	Intended learning effort	4/6/6	Intended learning effort	5	Intended Learning Effort	5
Ideal L2 self	6	Ideal L2 self	5/5/6	Ideal L2 self	5	Ideal L2 Self **	7
Attitude to the L2 community	8	Ought-to L2 self	4/7/6	Ought-to L2 self	7	Ought-to L2 Self **	5
		Attitude towards L2 community/Integrativeness	4/4/4	Integrativeness / Attitude to L2 community	7	Integrativeness **	4
Instrumentality	10	Instrumentality-promotion	5/8/6	Instrumentality-promotion	6	Instrumentality-promotion **	12
		Instrumentality-prevention	5/5/8	Instrumentality-prevention	5	Instrumentality-prevention **	6
Attitudes to learning English	6	Attitudes to learning English	4/4/6	Attitudes to current & past learning English	3+4	Attitude toward learning EMP **	14
English use anxiety	6			Language use Anxiety	4	L2 Anxiety **	7
L2 Self-confidence	5					L2 Self-Confidence **	6
				L2 Self-efficacy	4	L2 Self-Efficacy	4
Additional scales used in the previous studies							
Cultural interest	6	Cultural interest	4/3/4	Cultural interest	4		
Parental encouragement	4	Family influence	4/5/6	Parental encouragement	4		
International empathy	3			Interest in the English L	6		
International contact	4			International posture	7		
Interest in foreign Ls	5						
Fear of assimilation	4						
Ethnocentrism	5						
Travel orientation	4						
Milieu	6						
Willingness to communicate	8(x2)						
TOTAL	**106**		**39/47/52**		**71**		**70**

***In order of Taguchi (Japan)/Magid (China)/Papi (Iran)*

***Scales used in the pilot study we conducted in 2022*

Note. EMP = English for Medical purposes; L2 = Second Language

Table A.2. Statements in Hungarian applied in the distributed EMP Motivation Questionnaire in the Main Study and their English translation

Intended Learning Effort	***Hungarian***	***English***
Q*11	Valószínűleg a diplomám megszerzése után is fejleszteni fogom a szaknyelvi angoltudásomat.	I will probably continue to improve my EMP even after I graduate.
Q59	Hajlandó vagyok komoly erőfeszítéseket tenni az angol orvosi szaknyelv tanulása érdekében.	I am willing to make a serious effort to learn EMP.
Q60	Keményen dolgozom azon, hogy fejlesszem az angol orvosi szaknyelvi tudásomat.	I work hard to improve my EMP skills.
Q61	Azt hiszem, mindent megteszek az angol orvosi szaknyelv tanulása érdekében.	I believe I am doing everything I can to learn EMP.
*Dropped***:* Q54	Szándékomban áll külföldön tölteni egy kis időt, hogy fejlesszem az angol orvosi szaknyelvi tudásomat.	I intend to spend some time abroad to improve my EMP skills.
Ideal L2 Self	***Hungarian***	***English***
Q13	Elképzelhetőnek tartom, hogy gond nélkül kommunikálok külföldön angol nyelven betegekkel.	I can imagine myself communicating effortlessly with patients in English abroad.
Q14	Látom magam előtt, hogy angolul adok elő egy konferencián.	I can picture myself giving a presentation in English at a conference.
Q15	Valószínűnek tartom, hogy angolul fogok publikálni.	I think it is likely that I will publish in English.
Q17	Hiszem, hogy egyszer folyékonyan, szorongás nélkül fogok tudni kommunikálni angolul szakmai közegben.	I believe that one day I will be able to communicate fluently and without anxiety in English in a professional setting.
Q18	Magabiztos angol szaknyelvhasználóként látom magam a jövőben.	I see myself as a confident user of EMP in the future.
Q19	Elképzelhetőnek tartom, hogy gond nélkül kommunikálok külföldön angol nyelven szakmabeliekkel.	I can imagine myself communicating effortlessly in English with colleagues abroad.
Dropped: Q16	Elképzelhetőnek tartom, hogy tevékenyen részt veszek angol nyelvű cikk publikálásában.	I can see myself actively contributing to the publication of an article in English.
Ought-to L2 Self	***Hungarian***	***English***

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Q20	Azért tanulok/tanultam angol orvosi szaknyelvet, mert mindenkitől azt hallom, hogy manapság ez már elengedhetetlen.	I am studying EMP because everyone says it is essential these days.
Q21	Azért járok angol orvosi szaknyelvre, mert a karon hallgatóként elvárják tőlem az angol szaknyelv ismeretét.	I attend EMP classes because, as a student in this medical school, I am expected to know EMP.
Q50	Az évfolyamtársaim/csoporttársaim is tanulnak/tanultak angol orvosi szaknyelvet, és nem szeretnék kimaradni.	My peers/classmates are also studying EMP, and I do not want to be left out.
Dropped: Q12	Meglátásom szerint a jövőben a szakmámban elvárják tőlem, hogy ismerjem az angol orvosi szaknyelvet.	In my view, knowing EMP will be expected of me in my profession in the future.
Dropped: Q41	Csak azért tanulok angol orvosi szaknyelvet, mert a karunkon a diploma megszerzéséhez kötelező az angol orvosi szaknyelv ismerete.	I am only studying EMP because it is required by my medical school for graduation.
Integrativeness	***Hungarian***	***English***
Q2	Szerintem orvosi szakmai közösségen belül csak angol nyelvtudással lehet érvényesülni.	I believe that within the medical professional community, only those with English language skills can succeed.
Q22	Azért is tanulom az angol orvosi szaknyelvet, mert csak így vehetem ki a részem a tudományos közösségben folyó munkákból.	I am also studying EMP because it is the only way I can participate in the work of the scientific community.
Q29	Fontos számomra az angol orvosi szaknyelv ismerete, mert így válhatok a nemzetközi szakmai (publikációs és tudományos) közösség tagjává.	Knowing EMP is important to me because it allows me to become a part of the international professional (publishing and scientific) community.
Q42	Ha nem tanulnám az angol orvosi szaknyelvet, úgy érzem, kimaradnék valamiből.	If I were not studying EMP, I would feel like I am missing out on something.
Instrumentality Promotion	***Hungarian***	***English***
Q3	Szerintem az orvosi angol szaknyelv birtokában több lehetőségem lesz megfelelő állást találni.	I believe that knowing EMP will give me more opportunities to find a suitable job.
Q28	Az angol orvosi szaknyelv tanulása fontos számomra a pályafutásom miatt.	Learning EMP is important to me for my career.
Q33	Fontos számomra az angol orvosi szaknyelv ismerete, mert külföldi ösztöndíjra (pl. Erasmus) szeretnék pályázni.	Knowing EMP is important to me because I would like to apply for a scholarship abroad (e.g., Erasmus).

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Q34	Fontos számomra az angol orvosi szaknyelv ismerete azért is, hogy konferenciákon tudjak előadni.	EMP is important to me so that I can present at conferences.
Q35	Fontos számomra az angol orvosi szaknyelv ismerete, mert egy elméleti intézet munkatársaként kutatni és/vagy oktatni szeretnék.	EMP is important to me because I would like to work in a preclinical department, doing research and/or teaching.
Q37	Fontos számomra a szaknyelvi angoltudás, mert a tudományos életben csak ezzel juthatok előbbre.	EMP is important to me because it is the only way to advance in the scientific field.
Q38	Fontos számomra az angol orvosi szaknyelv, mert elképzelhető, hogy egyszer külföldön fogok dolgozni.	EMP is important to me because there is a chance I will work abroad one day.
Dropped: Q4	Szerintem Magyarországon idegen nyelvtudás nélkül is lehetek kiváló szakember.	I believe I can be an excellent professional in Hungary even without foreign language skills.
Dropped: Q27	Számomra elsősorban azért fontos az angol orvosi szaknyelv ismerete, mert a tanulásom/TDK/szakdolgozati munkám során használható szakirodalom nagy része angol nyelvű.	For me, knowing EMP is primarily important because most of the literature I can use for my studies/research/thesis is in English.
Dropped: Q36	Fontos számomra az angol orvosi szaknyelv ismerete, mert gyakorló orvosként szerintem szükségem lesz rá.	Knowing EMP is essential to me because I think I will need it as a practicing doctor.
Dropped: Q39	Fontos számomra az angol orvosi szaknyelv, bár én magyar nyelvterületen szeretnék majd dolgozni.	EMP is important to me, although I plan to work in Hungary.
Dropped: Q52	Szeretnék majd orvosi szakfordítóképzésre jelentkezni a diploma megszerzése után.	After graduating, I would like to apply for a medical translator training programme.
Instrumentality **Prevention**	***Hungarian***	***English***
Q30	Fontos számomra az angol orvosi szaknyelv ismerete, mert nem szeretném, ha a nyelvtudás hiánya gátolna a tudományos munkában/ösztöndíjak elnyerésében.	Knowing EMP is important to me because I do not want a lack of language skills to hold me back in scientific work or applying for scholarships.
Q31	Fontos számomra az angol orvosi szaknyelv ismerete, mert nem szeretném, hogy az angol szaknyelvi nyelvismeret hiánya korlátozza majd a jövőbeni lehetőségeimet.	EMP is important to me because I do not want the lack of it to limit my future opportunities.

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Q32		Fontos számomra az angol orvosi szaknyelv ismerete, mert nem akarom, hogy később a kollégáim lenézzenek azért, mert nem beszélek angolul vagy nem publikálok angolul.	Knowing EMP is important to me because I do not want my colleagues to look down on me in the future for not speaking English or not publishing in English.
Q47		Ha nem tanulnék/tanultam volna angol orvosi szaknyelvet, hátrányt szenvednék a hallgatótársaimhoz képest.	If I had not studied EMP, I would be at a disadvantage compared to my classmates.
Q51		A tanuláshoz felhasználható segédanyagok (videók, ábrák) sokszor angol nyelvűek, és én nem akarok hátrányba kerülni amiatt, hogy nem értem őket.	Many study resources, like videos and diagrams, are in English, and I do not want to be at a disadvantage by not understanding them.
Dropped: Q40		Csak azért tanulok/tanultam angol orvosi szaknyelvet, mert (nyelv)vizsgáznom kell(ett) belőle.	I only study(ed) EMP because I need(ed) to take a language exam.
Attitude to Learning EMP		***Hungarian***	***English***
Positive	Q*8	Szerintem hasznos lenne, ha minden orvostanhallgatónak kötelező lenne angol orvosi szaknyelvet tanulnia.	I think it would be useful if every medical student were required to learn EMP.
	Q25	Azért is kedvelem az angol orvosi szaknyelvi órákat, mert úgy érzem, az angoltudás mellett további ismeretekre is szert teszek/tettem.	I also enjoy EMP classes because I feel that, in addition to improving my English, I am gaining additional knowledge.
	Q48	Szinte természetesnek érzem, hogy angolul tanulni kell, és most a szaknyelven a sor.	It almost feels natural to me that learning English is necessary, and now it's time to learn EMP.
	Q58	Sokat teszek azért, hogy az angol szaknyelvi tudásomat fejlesszem.	I put in a lot of effort to improve my EMP skills.
	Q65	Kifejezetten élvez(t)em a szaknyelvi angolórákat.	I especially enjoy(ed) EMP classes.
	Q67	A szaknyelvi angolórák felüdülést jelentenek/jelentettek nekem a szakmai tárgyak tanulása mellett.	The EMP classes provide(d) a refreshing break from studying other professional subjects.
	Q68	Kedvelem az angol orvosi szaknyelvi órákat, mert orvosszakmai témákat érintünk.	I like the EMP classes because we cover topics related to the medical field.
Negative	Q9	Szerintem elég lenne az egyetemen az általános angol nyelvtudást fejleszteni, a szaknyelvet később is elsajátíthatja az ember.	In my opinion, it would be enough to focus on general English skills at university; one can learn EMP later on.

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Q10	Szerintem az angol orvosi szaknyelv csak latin szavakból áll, amelyeket angolul kell kiejteni.	I believe that EMP is just Latin words that need to be pronounced in English.
Q24	Azért járok orvosi szaknyelvi angolórára, mert csak ezt tudtam felvenni.	I am attending EMP classes because it was the only option I could take.
Dropped: Q23	Azért járok angol orvosi szaknyelvre, mert könnyű jó érdemjegyet szerezni.	I attend EMP classes because it is easy to get a good grade.
Dropped: Q53	Szívem szerint másik nyelvet tanulnék.	I would prefer to learn a different language.
Dropped: Q69	Közelebb áll hozzám az angol orvosi szaknyelv, mint az általános angol.	I prefer learning EMP to general English.
Dropped: Q73	Az angol szaknyelvi oktató személye, személyisége meghatározó számomra.	The personality of the EMP teacher is important to me.
L2 Anxiety	***Hungarian***	***English***
Q46	Tartok attól, hogy hallgatótársaim kinevetnek a szaknyelvi angolórán.	I am afraid my classmates will laugh at me in the EMP class.
Q70	Tartok attól, hogy a szaknyelvtanár kigúnyol a szaknyelvi angolórán.	I am worried that the EMP teacher will make fun of me in class.
Q71	Az angol szaknyelvi órán csak akkor mondok ki egy mondatot, ha biztos vagyok benne, hogy helyes a nyelvtan.	In EMP class, I only speak up if I'm sure the grammar is correct.
Q72	Az angol szaknyelvi órákon zavar, hogy magyarosnak hallom a kiejtésem.	In EMP class, it bothers me when I hear my pronunciation sound too Hungarian ('Hunglish').
Q43	Zavar, hogy a szaknyelvi angolórán hallgatótársaim jobban beszélnek angolul, mint én.	It bothers me that my classmates speak English better than I do in EMP class.
Q64	Kifejezetten szorongok a szaknyelvi angolórákon.	I feel especially anxious in EMP classes.
Q66	Nem szívesen szólalok meg az angol szaknyelvi órán.	I am reluctant to speak up in EMP classes.
Self-Confidence	***Hungarian***	***English***
Q5	Szerintem jó nyelvérzékem van angol nyelvből.	I think I have a good aptitude for English.
Q6	Szerintem bármilyen mindennapi szituációban megértetem magam angolul.	I believe I can make myself understood in any everyday situation in English.

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Q7	Szerintem bármilyen szaknyelvi szituációban megértetném magam angolul.	I think I could make myself understood in any professional (medical) situation in English.
Q56	Büszke vagyok az általános angol nyelvtudásomra.	I am proud of my general English skills.
Q57	Büszke vagyok az eddig megszerzett angol orvosi szaknyelvi nyelvtudásomra.	I am proud of the EMP skills I have acquired so far.
Q63	Szeret(t)em, ha aktívan részt tudok venni a szaknyelvi órán, és sokat beszélhetek.	I enjoy(ed) being able to actively participate in EMP classes and speak a lot.
Self-Efficacy	***Hungarian***	***English***
Q44	Elég könnyűnek találom az angol orvosi szaknyelv tanulását.	I find learning EMP fairly easy.
Q45	Igyekszem kihasználni az angol nyelvű kommunikációra adódó lehetőségeket.	I try to take advantage of opportunities to communicate in English.
Q62	Ha odateszem magam, könnyen tanulom az angol orvosi szaknyelvet.	If I make an effort, I learn EMP easily.
Dropped: Q49	Az angol orvosi szaknyelv nagyon nehéz számomra.	EMP is very difficult for me.

*Q numbers are indicating the order of questions in the distributed questionnaire. Missing numbers (Q1; Q26; Q55) are open-ended questions not covered in this paper.

** In this table, we have indicated which items were excluded during the PCA in every instance of item listing.

Note. EMP = English for Medical purposes; L2 = Second Language

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CHAPTER FOUR

Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes

(Study 3)

This chapter presents Study 3. It builds on the validated questionnaire developed and presented in Study 2, and reports on a subsequent large-scale survey conducted with the same instrument, it provides contextually important findings. The study is presented in the dissertation exactly as published in the journal, with no content alterations, and is provided in a searchable format. Throughout the Introduction and Discussion sections of this dissertation, this article is cited as (Stötzer et al., 2026).

Authors	Year	Title	Journal	SJR	
Stötzer, A., Bagyura, M., & Farkas, É.	2026	Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes	*Educational Process: International Journal*	Q2 Education	MTMT
Published as	Stötzer, A., Bagyura, M., & Farkas, É. (2026). Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes. *Educational Process: International Journal, 20*, e2026001. https://doi.org/10.22521/edupij.2026.20.1				

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Running a Diagnostic on Motivation: Exploring Motivational Dynamics Underlying Non-Anglophone Medical Students' Efforts to Learn English for Medical Purposes

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Research Article

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Abstract

Background/purpose. While the significance of English for Medical Purposes (EMP) in medical education continues to grow, research on the motivational dynamics shaping non-Anglophone students' efforts to learn EMP remains limited. To address this gap, we developed a contextualized questionnaire based on the L2 Motivational Self System.

Materials/methods. The study, conducted across Hungary's four medical schools, involved 283 medical students in Hungarian-medium instruction. Using linear regression and mediation analyses, we examined the direct and indirect effects of core motivational dimensions (Ideal L2 Self, Ought-to L2 Self, Integrativeness, and Instrumentality) on students' intended learning effort (ILE).

Results. Results identified Integrativeness, Ideal L2 Self, and Instrumentality Prevention as direct predictors of ILE. Further analyses explored supplementary psychosocial dimensions (Self-efficacy, Self-confidence, L2 anxiety, and Attitude toward EMP), revealing significant but varied effects on ILE's direct predictors.

Conclusion. These findings not only deepen theoretical insights into EMP motivation but also highlight important pedagogical implications. To enhance motivation and sustain engagement in EMP learning, pedagogical strategies should incorporate authentic materials, real-world simulations, and interdisciplinary collaboration while fostering a supportive classroom environment that strengthens self-confidence, reinforces self-efficacy, and minimizes L2 anxiety. By bridging theoretical and practical perspectives, this study contributes to research on EMP motivation and provides insights for curriculum design and instruction.

1. Introduction

English has firmly established itself as the dominant language, the lingua franca of science and academia (Galloway & Rose, 2015; Johnson & Tweedie, 2024; Tweedie & Johnson, 2022). This global dominance has prompted a noticeable shift in higher education from teaching English for General Purposes (EGP) to English for Specific Purposes (ESP) to better address the evolving linguistic and professional demands of students across academic disciplines (Breeze, 2020; Hyland, 2022). The same trend can be observed in the field of English for Medical Purposes (EMP) (Džuganová, 2019; Heming & Nandagopal, 2012). In medical education, non-Anglophone medical students predominantly pursue their undergraduate studies in their mother tongue (Hamad, 2023), although recent studies report an increasing use of English as a Medium of Instruction worldwide, even in non-English-speaking countries (Yang et al., 2019). In fact, 38 of 39 European countries, as well as 55.6% of medical schools worldwide (spanning 105 of 189 countries), rely on their native language as the primary medium of medical education (Hamad, 2023). This very coexistence of national languages as the medium of instruction and English as the global language of science creates a pressing demand for English for Medical Purposes (EMP), ensuring that students can access international resources, research, and collaboration opportunities despite studying in their mother tongue (Dou et al., 2023; Pavel, 2014).

Maher (1987) highlighted the critical importance of EMP as early as 1987; however, teaching and learning EMP remain relatively underexplored in both medical and language education. EMP, a branch of ESP (Hyland, 2022; Hyland & Wong, 2019; Stötzer & Farkas, 2024), focuses on acquiring medical terminology and on using professional language, including preclinical, clinical, and research-related terms. The importance of learning EMP extends beyond future prospects, such as publishing research or working abroad. Even during their studies, medical students benefit significantly from acquiring basic EMP vocabulary, which facilitates access to essential resources, including medical textbooks and research articles, most of which are available in English. Additionally, EMP competency enables participation in international mobility programs, such as clinical placements or exchanges, which are becoming integral to medical education. Thus, developing proficiency in EMP is not merely a future-oriented goal but an immediate necessity that underpins both academic success and professional development (Amano et al., 2023; Ellahham, 2021).

To provide non-Anglophone medical students with effective, high-quality EMP instruction and to develop appropriate curricula and course designs, it is essential to understand their motivation to learn EMP and the extent to which they are willing to invest effort in the process. Nevertheless, the specific motivational factors influencing the learning of EMP remain underexplored in the existing body of research, particularly within established theoretical frameworks like the L2 Motivational Self System (L2MSS) (Dörnyei, 2005, 2009). Despite the growing recognition of EMP as a crucial component of medical education, few empirical studies have examined its motivational dynamics through established theoretical lenses. To address this gap, the present study applies and tests a contextualized version of Dörnyei's L2MSS to capture the motivation of non-Anglophone medical students to learn EMP.

Accordingly, the primary purpose of this research is to investigate the motivational dynamics underlying EMP learning effort by operationalizing and testing a contextualized version of the L2MSS. Specifically, the study addresses the following Research Objectives:

RO1: To examine and demonstrate the direct and indirect effects of the 'core' motivational dimensions (IL2S, O2L2S, INTEG, I_PROM and I_PREV) on medical students' Intended Learning Effort (ILE) in the context of learning EMP.

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RO2: To explore and demonstrate how 'supplementary' variables (psychosocial dispositions including S_CONF, S_EFF, ATT_POS, ATT_NEG, and L2_ANX) influence those core motivational dimensions which have direct effects on Intended Learning Effort (ILE).

2. Literature Review

Existing studies on EMP learning motivation have predominantly focused on the extrinsic–intrinsic motivational dichotomy (Demír & Hamarat, 2022; Hosseini & Shokrpour, 2019; Nourinezhad et al., 2017; Pavel, 2020) and the instrumental–integrative (Gardner, 2001, 2007) orientations (Marošan & Marković, 2019; Mathis et al., 2021; Mayers, 2023; Tomak & Šendula-Pavelić, 2017), with occasional inclusion of additional dimensions. Notably, no studies on EMP learning motivation to date have applied Dörnyei's L2 Motivational Self System (L2MSS) (Dörnyei, 2005, 2009), despite evidence of its effectiveness in measuring motivation across diverse ESP contexts (Alqahtani, 2017; Brady, 2021; Csizér, 2019; Lanvers, 2016; Liu, 2024).

In the following sections, we introduce the motivational dimensions and the criterion measures we selected to capture and demonstrate medical students' motivation to learn EMP. While the selected dimensions can be broadly situated within the overarching categories of intrinsic and extrinsic motivation – particularly when viewed along a continuum rather than as a strict dichotomy as posited by Self-Determination Theory (SDT) (Ryan & Deci, 2000; Vansteenkiste et al., 2006) – they offer a more refined diagnostic perspective. This nuanced approach provides insights that enable pedagogical implications to be drawn and practical recommendations to be made to improve EMP instruction.

2.1. Core Motivational Dimensions and Criterion Measure

The motivational dimensions selected for this study were chosen for their theoretical and practical relevance, as demonstrated by Brady (2019a, 2019b) and Taguchi et al. (2009). Although Dörnyei's L2MSS has not yet been applied specifically in the context of EMP, Al-Hoorie's (2018) findings highlight the framework's effectiveness in capturing the complexities of learner motivation in diverse cultural and educational settings, further supporting its suitability for the present study. This study builds upon the L2MSS framework, which conceptualizes language learning motivation through three main components: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience (Dörnyei, 2005, 2009). Rooted in Markus and Nurius's (1986) possible selves theory and Higgins's (1987) self-discrepancy theory, this framework highlights the motivational impact of one's self-concept. In this study, in the context of EMP, the Ideal L2 Self (IL2S) reflects medical students' future-oriented vision of themselves as confident and proficient users of EMP. The Ought-to L2 Self (O2L2S) captures students' perceived external obligations and social expectations to learn EMP, driven by the desire to meet societal norms, institutional demands, and peer-related pressures. Dörnyei's third construct, the L2 learning experience, primarily relates to external, contextual factors that influence motivation, such as teacher behavior, peer interactions, and institutional support. While undeniably important, these factors were considered beyond the scope of our research.

In Gardner's socio-educational model (Gardner, 2001), integrativeness refers to a learner's openness to and willingness to integrate into the culture of the target-language community, reflecting intrinsic interest and cultural affinity. Instrumentality, on the other hand, denotes extrinsic motivation driven by practical goals, such as career advancement or academic success, where the language serves as a means to an end (Gardner, 2001). Integrativeness (INTEG), while debated in contemporary motivational research (Gardner, 2001), in our understanding, retains its relevance in this context, reflecting medical students' desire to integrate into the global medical and scientific community, emphasizing the importance of EMP proficiency for professional success, participation in international collaboration, and a sense of belonging within the broader professional network. The inclusion of Instrumentality, divided into Promotion and Prevention orientations (I_PROM and

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I_PREV) (Dörnyei, 2005), ensures that the pragmatic aspects of EMP learning are addressed. I_PROM reflects medical students' recognition of the career and academic advantages of learning EMP. It focuses on the aspirational benefits of EMP, such as career advancement, securing scholarships, and professional opportunities. I_PREV reflects an avoidance-based motivation in which students are driven by fear of setbacks or disadvantages, such as professional limitations, diminished career opportunities, or peer judgment. For the purposes of this study, these motivational dimensions (IL2S, O2L2S, INTEG, I_PROM and I_PREV) are referred to as 'core' motivational dimensions.

Intended Learning Effort (ILE) has proved to be a compelling criterion measure for assessing language learning motivation due to its strong correlations with motivational constructs (Csizér & Dörnyei, 2005; Ghorbani & Rashvand Semiyari, 2022; Teimouri et al., 2022; Yetkin & Ekin, 2018), its predictive power regarding learners' engagement, and its reflection of both intrinsic and extrinsic motivational factors. At the same time, it should be acknowledged that ILE is a self-reported measure and, as such, may not fully reflect students' actual effort (Fryer & Dinsmore, 2020; Pekrun, 2020). Nevertheless, in this study, ILE, as the criterion measure, reflects medical students' commitment and willingness to invest effort in developing their EMP skills.

2.2. Supplementary Psychosocial Dimensions

In addition to the core motivational dimensions, we selected psychosocial dimensions that Brady (2019a, 2019b) and Taguchi et al. (2009) have also employed in the context of ESP. In their studies, the supplementary dimensions varied, reflecting the need for flexibility in adapting to specific research contexts. Similarly, we decided to include the following supplementary dimensions based on their relevance to our study objectives:

1. Self-efficacy (S_EFF). The relationship between self-efficacy and motivation in language learning is significant and multifaceted. Following Bandura's (1997) social cognitive theory, self-efficacy refers to learners' beliefs in their capability to organize and execute the actions required to achieve specific learning goals. This makes self-efficacy task-specific and action-oriented, reflecting one's conviction that they can successfully perform a given task. Importantly, self-efficacy should not be conflated with self-confidence. Self-confidence, by contrast, denotes a more general sense of assurance that one possesses the necessary knowledge and abilities and can thus face the task with confidence (see below). Research indicates that higher self-efficacy is associated with greater motivation to engage in language learning activities (Manipol et al., 2024). Piniel and Csizér (2013) demonstrate that self-efficacy and motivation are distinct yet closely linked constructs, suggesting that enhancing self-efficacy can lead to improved motivational outcomes in language learning contexts. In this study, S_EFF reflects medical students' beliefs in their ability to succeed in learning EMP, including their capacity to capitalize on communication opportunities and their confidence in the effectiveness of their efforts.

2. Self-confidence (S_CONF). The relationship between self-confidence and motivation in language learning is well-documented in the literature. Research indicates that learners with higher self-confidence are more likely to engage actively in language learning, which in turn fosters greater motivation (Tsymbal, 2019). Conversely, a lack of self-confidence can lead to anxiety and avoidance behaviors, which diminish motivation and hinder language acquisition (Lao & Buenaventura, 2024). In this study, S_CONF captures students' confidence in their English abilities, both general and medical, highlighting their pride in existing skills, their belief in effective communication across contexts, and their active participation in EMP classes.

3. L2 anxiety (L2_ANX). Research suggests that L2 anxiety can significantly influence learners' motivation levels, often acting as a barrier to effective language acquisition (Jiang & Papi, 2021). Teimouri's (2017) findings support the idea that L2 anxiety can have both facilitative and debilitative effects on motivation. While anxiety may keep learners alert and focused, it can also hinder their

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overall motivation if it becomes overwhelming (Teimouri, 2017). In this study, L2_ANX reflects students' language-related anxiety specific to learning EMP, including fears of judgment, self-consciousness about pronunciation or grammar, and apprehension about speaking in class.

4. Positive and Negative Attitude Toward Learning EMP (ATT_POS and ATT_NEG). Research consistently shows that positive attitudes significantly enhance motivation, which in turn facilitates successful language learning outcomes (Ahmed, 2022; Alqahtani, 2017). In this study, ATT_POS illustrates students' proactive and positive disposition and engagement toward learning EMP, highlighting their appreciation of the additional knowledge the subject provides. Conversely, negative attitude (ATT_NEG) reflects students' negative perceptions or reluctance toward learning EMP.

3. Methodology

3.1. Setting

This study employed a quantitative, cross-sectional survey design and was conducted at Hungary's four medical schools, all offering undivided, twelve-semester medical programs in Hungarian as the medium of instruction (HMI program) for state-funded students. At the time of the study, only Semmelweis University and the University of Pécs had mandatory EMP exit requirements, while EMP courses were elective at the University of Debrecen and the University of Szeged. Notably, no standardized EMP curriculum existed across the institutions.

3.2. Data Collection and Participants

We conducted the study between February and April 2024. A non-random, voluntary convenience sampling approach was employed, using email invitations distributed by the respective Registrar's Offices to all undergraduate medical students (years 1 to 6) enrolled in Hungary's HMI medical programs. This sampling approach was deemed the most feasible and ethically appropriate strategy for reaching the full target population within institutional constraints, as it ensured equal opportunity for participation across all four medical schools. This was the most practical and appropriate method for reaching the entire target population of approximately 5800 students (60% female, 40% male, based on Hungarian Statistical Office data) across the four medical schools in the country. The Registrar's Offices distributed the email invitations after we obtained prior approval from the respective Deans.

Participation was voluntary and anonymous, and students provided informed consent for research purposes, supplying non-sensitive data. A total of 283 students completed the self-administered, online questionnaire (Appendix), which was applied in its current form for the first time and featured 55 items on EMP learning motivation, using a 6-point Likert scale. The inclusion criterion required participants to have attended at least one EMP course offered by their respective universities.

The achieved sample (n=283) represents approximately 5% of the total target population (approx. 5,800). A detailed analysis of the sample demographics (Table 1) indicates that while the overall size is adequate for the planned statistical analyses, the sample exhibits an over-representation of first-year students (45.6%) and participants affiliated with the University of Debrecen (46.6%), a factor which must be considered when interpreting the results. Table 1 presents the demographic details of the sample.

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Table 1. Respondents' Self-Reported Demographics and English Proficiency Levels (n=283)

		n	%
Gender	Male	89	31.4%
	Female	194	68.6%
Affiliation	Semmelweis University	25	8.8%
	University of Pécs	61	21.6%
	University of Szeged	65	23.0%
	University of Debrecen	132	46.6%
Year	1st	129	45.6%
	2nd	56	19.8%
	3rd	38	13.4%
	4th	24	8.5%
	5th	19	6.7%
	6th	17	6.0%
English proficiency level according to the Common European Framework of Reference	No English language exam	16	5.7%
	A2	2	0.7%
	B2	137	48.4%
	C1	128	45.2%

3.3. Instrument

We began developing the instrument by translating (from English to Hungarian) and contextualizing the items from L2MSS-based questionnaires used in previous international studies (Taguchi et al., 2009; Brady, 2019a, 2019b; Ryan, 2009), which already incorporated Gardner and Lambert's constructs of Integrativeness and Instrumentality (Gardner & Lambert, 1959, 1972). Contextualization was essential, as prior studies applying L2MSS focused on general English or other ESP contexts, while our aim was to address medical students' EMP learning. The process involved both the extensive modification of existing items (e.g., for Ideal L2 Self, Ought-to L2 Self, and the Instrumentality components) and the development of new items (for Attitude toward learning EMP, L2 Anxiety, Self-Confidence, and Integrativeness) to accurately address medical students' EMP learning. Minor adjustments were needed in the case of Intended Learning Effort and Self-Efficacy. The instrument was refined through expert feedback and a 2022 pilot involving a think-aloud protocol with medical students. The detailed development and validation of this contextualized EMP motivation questionnaire are reported in a separate study (Stötzer et al., 2025).

Table 2 outlines the motivational dimensions included in the questionnaire. The abbreviations (e.g., IL2S = Ideal L2 Self, ILE = Intended Learning Effort) are retained throughout the analysis for consistency. These categories represent the adapted scales used to examine students' motivation to learn EMP. Table 2 summarizes the examined dimensions and item counts. All dimensions were

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derived using principal component analysis (PCA), with component loadings ranging from 0.535 to 0.933. Only components with eigenvalues greater than one and explaining at least 33% of the variance were retained. Cronbach's α and McDonald's ω values indicated satisfactory internal consistency overall, with only three constructs slightly below the conventional 0.70 threshold: Ought-to L2 Self (α = 0.572, ω = 0.574), Attitude to EMP negative (α = 0.641, ω = 0.649), and Integrativeness (α = 0.651, ω = 0.665) (Stötzer et al., 2025).

Table 2. Criterion Measure and Core and Supplementary Motivational Dimensions in the Study (n=283)

Dimensions	Abbreviation	Items* (n)
Criterion measure		
Intended Learning Effort	ILE	4
Core motivational dimensions		
Instrumentality- Prevention	I_PREV	5
Instrumentality- Promotion	I_PROM	7
Ideal L2 Self	IL2S	6
Ought-to L2 Self	O2L2S	3
Integrativeness	INTEG	4
Supplementary variables		
Self-Efficacy	S_EFF	3
Self-Confidence	S_CONF	6
L2 Anxiety	L2_ANX	7
Attitude toward learning EMP**	ATT_POS	7
	ATT_NEG	3
Total		55

* *Following Principal Component Analysis (PCA) and Reliability Analyses (RAs)*

** *The Attitude component is split into two components, reflecting positive and negative attitudes after PCA and RAs*

3.4. Data Analysis

To address RO1 and examine the direct and indirect effects of the core motivational dimensions, we employed a two-step analytical procedure. First, we conducted linear regression analysis (Ng et al., 2018) (SPSS Statistics version 28.0) with the stepwise method. Second, we utilized General Linear Model (GLM) Mediation Analysis (Hayes & Little, 2022) (Jamovi version 2.3.28).

In the regression analysis, the predictor variables (I_PREV, I_PROM, IL2S, O2L2S, INTEG) and the dependent variable (ILE) were standardized principal components (mean = 0, standard deviation = 1) derived from the original ordinal variables. As a result, the intercepts in all regression models yielded t-values of 0.000 and p-values of 1.000. The goodness-of-fit of the model was assessed using adjusted R^2, which accounts for both the number of predictors and the sample size. Model significance was determined through an analysis of variance (ANOVA) using the F-test ($p < 0.05$). Standardized β-values were used to interpret the relative effects of the predictors.

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To explore the indirect effects of the core motivational predictors on ILE, we conducted GLM Mediation Analysis. This approach allowed us to investigate how the predictors interact to influence ILE. GLM Mediation Analysis was selected for its advantages: (1) it allows for multiple regressions to be fit separately and then combined, (2) it provides model fit metrics for each submodel rather than the entire model, and (3) it offers great flexibility due to its less stringent theoretical model assumptions. This method facilitates a holistic view of the relationships between variables. The strength of mediation effects was measured using standardized indirect effect sizes, and their significance was assessed using a bootstrap procedure with 5,000 iterations and 95% confidence intervals.

Finally, to address RO2 and examine the extent to which the supplementary variables influence the predictors that directly affect the ILE criterion measure, we conducted additional linear regression analyses using the same methodological framework described above.

4. Results

4.1. Direct and Indirect Effects of Core Motivational Dimensions on ILE (RO1)

Table 3 summarizes the results of the linear regression analysis addressing RO1, which identifies the core L2MSS dimensions that directly predict medical students' ILE. The core motivational dimensions are: Integrativeness (INTEG), Ideal L2 Self (IL2S), Instrumentality–Prevention (I_PREV), Instrumentality–Promotion (I_PROM), and Ought-to L2 Self (O2L2S). The key finding is that the model successfully accounts for a substantial 31.0% of the variance in ILE. The three motivational dimensions showing significant direct, positive effects on ILE are INTEG, IL2S, and I_PREV, with INTEG having the strongest impact (β=0.289).

For RO1, the linear regression model (Table 3) was statistically significant ($F=43.240$, $p<0.001$), with an adjusted R^2 of 0.310. This indicates that the model accounts for 31.0% of the variance in ILE, reflecting the overall effect size of the regression model. Furthermore, the predictor variables included in the model contributed significantly to explaining the heterogeneity in ILE, as indicated by the t-test (INTEG $p<0.001$, IL2S $p<0.001$, I_PREV $p<0.05$). The standardized β-values, which represent the relative effect sizes of the predictors, were as follows: INTEG (β=0.289) had the strongest effect on ILE, followed by IL2S (β=0.262) and I_PREV (β=0.155). Together, these results indicate that the individual contributions of these predictors are substantial in explaining the variance in ILE. I_PROM and O2L2S were excluded from the regression model, as they did not show a significant relationship with ILE (t-test: $p>0.05$).

Table 3. Results of Linear Regression Predictive of Intended Learning Effort (ILE)

Variable	Unstandardized β	Standard error	Standardized β	t	p
Intercept: ILE	1.233E-16	0.049		0.000	1.000
Integrativeness (INTEG)	0.289	0.069	0.289	4.197	< 0.001
Ideal L2 Self (IL2S)	0.262	0.056	0.262	4.690	< 0.001
Instrumentality – Prevention (I_PREV)	0.155	0.063	0.155	2.470	< 0.05

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Overall, these results indicate that students' identification with the international medical community (INTEG) and their self-vision as proficient EMP users (IL2S) are the strongest drivers of learning effort, while prevention motives (I_PREV) also contribute modestly.

After the linear regression analysis, GLM Mediation Analysis was employed to investigate the indirect effects of I_PROM and O2L2S on ILE. Table 4 and Figure 1 present the results of the General Linear Model (GLM) Mediation Analysis, which explored how the core L2MSS dimensions mediate each other's effects on ILE. The key discovery is the significant role of mediation for I_PROM and O2L2S (which had no direct effect) through IL2S and INTEG. Although I_PROM and O2L2S did not exhibit significant direct effects on ILE, both variables demonstrated notable indirect effects (Model I in Table 4 and Figure 1) through their influence on other motivational components. Specifically, I_PROM showed a significant indirect effect on ILE, mediated through IL2S (β=0.140, $p<0.001$) and INTEG (β=0.157, $p<0.01$). O2L2S exhibited significant indirect effects on ILE mediated through IL2S (β=−0.057, $p<0.05$) and INTEG (β=0.030, $p<0.05$).

In the next step, GLM Mediation Analyses were conducted for the core motivational dimensions (INTEG, IL2S, and I_PREV) that were identified as direct predictors of ILE. Models II and III explored the bidirectional influences between INTEG and I_PREV as mediators of ILE. Results indicate that INTEG exerted an indirect effect on ILE via I_PREV ($\beta = 0.100$, $p < 0.01$), while I_PREV influenced ILE through INTEG ($\beta = 0.260$, $p < 0.001$) (Table 4). The models are illustrated in Figure 1.

Table 4. Indirect Effects of Core Motivational Dimensions on Intended Learning Effort (ILE)

Model	Indirect effects	Effect	Standard error	95% CI*		β	p
				Lower	Upper		
I	I_PROM→IL2S→ILE	0.140	0.037	0.067	0.213	0.140	< 0.001
	I_PROM→INTEG→ILE	0.157	0.057	0.045	0.269	0.157	< 0.01
	O2L2S→IL2S→ILE	–0.057	0.019	–0.093	–0.020	–0.057	< 0.01
	O2L2S→INTEG→ILE	0.030	0.014	0.003	0.057	0.030	< 0.05
II	INTEG→I_PREV→ILE	0.100	0.041	0.020	0.181	0.100	< 0.01
III	I_PREV→INTEG→ILE	0.260	0.044	0.173	0.346	0.260	< 0.001

**CI = confidence interval*

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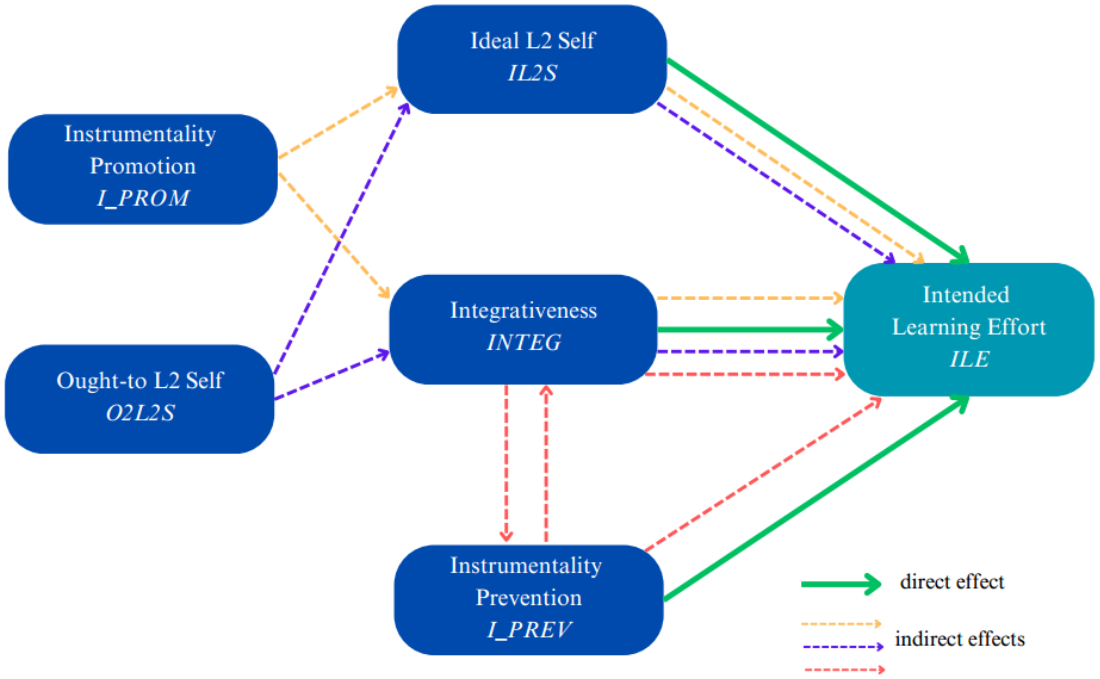

Figure 1. Direct and Indirect Effects of Core Motivational Dimensions On Medical Students' Intended Learning Effort in Learning EMP

4.2. Effects of Supplementary Dimensions on Direct Predictors of ILE (RO2)

Table 5 and Figure 2 present the results of the linear regression analyses conducted for RO2, examining the influence of supplementary psychosocial dimensions on the core motivational predictors identified in RO1 (INTEG, IL2S, and I_PREV). The supplementary variables include Self-Confidence (S_CONF), Self-Efficacy (S_EFF), Positive Attitude toward learning EMP (ATT_POS), Negative Attitude toward learning EMP (ATT_NEG), and L2 Anxiety (L2_ANX). The most critical finding is the pervasive, strong influence of S_CONF and ATT_POS across the models. Notably, L2_ANX shows a strong, positive association with both INTEG and I_PREV.

To address RO2, three linear regression models were conducted (Table 5 and Figure 2), with IL2S, INTEG, and I_PREV as the dependent variables.

Model A, with INTEG as the dependent variable, was statistically significant ($F=33.755$, $p<0.001$), with an adjusted R^2 of 0.258, explaining 25.8% of the variance. Significant predictors were ATT_POS ($\beta=0.360$, $p<0.001$), L2_ANX ($\beta=0.324$, $p<0.001$), and S_CONF ($\beta=0.304$, $p<0.001$).

Model B, examining IL2S, was statistically significant ($F=168.190$, $p<0.001$) with an adjusted R^2 of 0.542. This indicates that 54.2% of the variance in IL2S can be explained by the predictors included in the model. The analysis revealed that S_CONF had the strongest effect ($\beta=0.561$, $p<0.001$), followed by S_EFF ($\beta=0.214$, $p<0.001$).

In Model C, where I_PREV was the dependent variable, the regression was again statistically significant ($F=29.720$, $p<0.001$), with an adjusted R^2 of 0.289, explaining 28.9% of the variance. The strongest effects were observed for ATT_POS ($\beta=0.399$, $p<0.001$), L2_ANX ($\beta=0.471$, $p<0.001$), followed by S_CONF ($\beta=0.277$, $p<0.001$). Additionally, ATT_NEG ($\beta=-0.186$, $p<0.001$) had a negative effect on I_PREV.

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Table 5. Results of Linear Regression Examining Supplementary Psychosocial Dimensions Predictive of Ideal L2 Self (IL2S), Integrativeness (INTEG), and Instrumentality Prevention (I_PREV)

Model	Variable	Unstandardized β	Standard error	Standardized β	t	p
A	Intercept: ***INTEG***	−4.209E-17	0.051		0.000	1.000
	Attitude to learning EMP Positive *(ATT_POS)*	0.360	0.062	0.360	5.765	<0.001
	L2 Anxiety *(L2_ANX)*	0.324	0.059	0.324	5.451	<0.001
	Self-Confidence *(S_CONF)*	0.304	0.066	0.304	4.570	<0.001
B	Intercept:***IL2S***	−3.213E-17	0.040		0.000	1.000
	Self-Confidence *(S_CONF)*	0.561	0.063	0.561	8.850	<0.001
	Self-Efficacy *(S_EFF)*	0.214	0.063	0.214	3.375	<0.001
C	Intercept: ***I_PREV***	−1.072E-16	0.050		0.000	1.000
	Attitude to learning EMP Positive *(ATT_POS)*	0.399	0.062	0.399	6.469	<0.001
	L2 Anxiety *(L2_ANX)*	0.471	0.061	0.471	7.764	<0.001
	Self-Confidence *(S_CONF)*	0.277	0.070	0.277	3.945	<0.001
	Attitude to learning EMP Negative *(ATT_NEG)*	−0.186	0.055	−0.186	−3.400	<0.001

Taken together, these findings suggest that affective dispositions such as self-confidence and positive attitudes play a decisive role in shaping the motivational profile of EMP learners.

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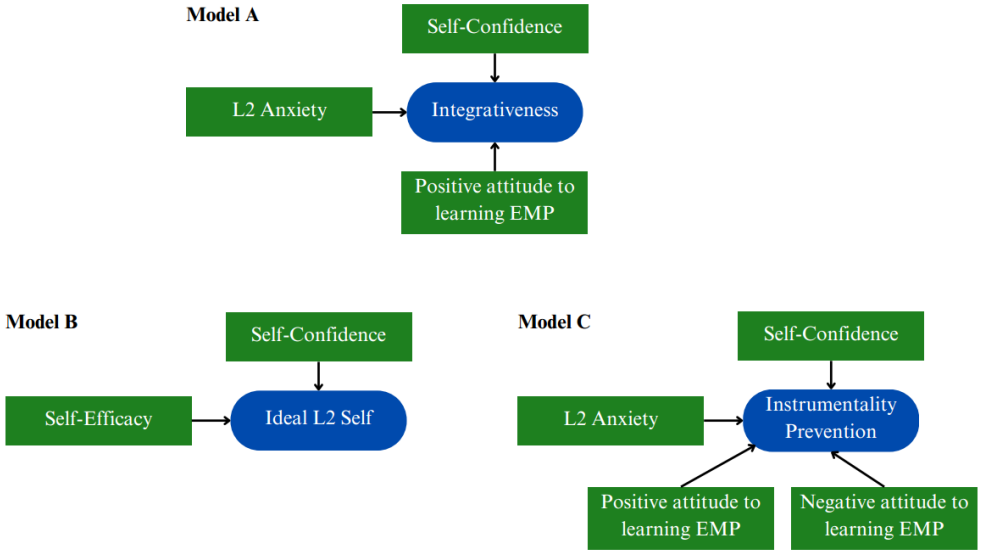

Figure 2. The effects of supplementary motivational dimensions on the direct predictors of Intended Learning Effort

5. Discussion

This section discusses the results in relation to the research objectives and relevant theoretical and empirical frameworks. Overall, the findings show that three 'core' motivational dimensions—Integrativeness, Ideal L2 Self, and Instrumentality Prevention—directly predict medical students' ILE, while supplementary psychosocial factors such as self-confidence, self-efficacy, attitude, and L2 anxiety exert indirect but meaningful effects. Together, these results reveal a complex interplay between cognitive, affective, and vision-related factors shaping EMP motivation in non-Anglophone medical contexts.

5.1. Effects of Core Motivational Dimensions on Students' Effort to Learn EMP (RO1)

The first research objective (RO1) sought to determine which motivational dimensions most strongly predict Hungarian medical students' effort to learn EMP. The findings identify INTEG, IL2S, and I_PREV as direct predictors of ILE, with INTEG emerging as the strongest. The dominant role of INTEG highlights students' aspirations to access international research and collaboration, as well as their desire to belong to the wider medical and scientific community. These findings align with prior research suggesting the central role of Integrativeness in second language motivation (Demír & Hamarat, 2022; Marošan & Marković, 2019; Tomak & Šendula-Pavelić, 2017). Traditionally, integrative motivation has been linked to cultural and linguistic affinity. However, in specialized contexts like learning EMP, its relevance highlights the evolving nature of Integrativeness. In such settings, integrative motivation may extend beyond cultural orientation to include a broader conceptualization – one, where identifying with an international professional community becomes central to motivation, rather than affiliation with a specific culture.

IL2S, the second strongest predictor, reflects students' strong self-vision as proficient EMP users. While this finding is novel in the EMP domain, it demonstrates the relevance and applicability of IL2S in this context. Moreover, it extends prior research in other ESP settings (e.g., Martín-González & Chaves-Yuste, 2024) and highlights the pivotal role of future-oriented goals in sustaining learning effort. Recent vision-based intervention studies provide strong empirical support for this approach: Sandu and Rodríguez Gil (2023) demonstrated that imagery-based motivational activities significantly enhanced students' Ideal L2 Self in a university EFL context. Similarly, Sato (2021) implemented a

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vision intervention linked to communicative tasks and found increased Ideal L2 Self and target-language use, with the Ideal L2 Self positively correlating with actual L2 performance only after the intervention. These findings underscore the potential value of integrating vision-building strategies within EMP curricula to reinforce students' long-term motivational orientation. Examining the role of the Ideal L2 Self and its significance in shaping intended learning effort is particularly informative for educators: the Ideal L2 Self fosters self-regulated learning and encourages a proactive approach to language acquisition (Alqahtani, 2017). Given that language learning is a lifelong process, it is crucial to adopt appropriate pedagogical strategies that not only cultivate but also reinforce this perspective among students. In the context of EMP, this means fostering an understanding that language development extends beyond graduation and remains integral to their professional journey.

I_PREV, while exhibiting a weaker effect, also predicts ILE, indicating that avoidance-based motives, such as striving to avoid professional disadvantages, academic setbacks, or negative peer judgment, can contribute to effort. While often considered less ideal than promotion-driven motives, prevention-focused orientation can nonetheless play a substantial role in maintaining consistent learning effort (Csizér, 2019; Teimouri, 2017), particularly in high-stakes academic contexts such as medical education.

Neither O2L2S nor I_PROM demonstrated significant direct effects on ILE, but mediation analyses revealed their indirect influence through IL2S and INTEG. O2L2S had a negative indirect effect on ILE via IL2S, suggesting that stronger obligations to learn EMP may weaken learners' self-concept, thereby reducing effort. However, O2L2S also exhibited a smaller but positive indirect effect on ILE through INTEG, indicating that external expectations can still contribute to engagement when aligned with integrative motivation. This suggests that external obligations, when framed in ways that resonate with students' aspirations to join the international medical community, may be partially internalized and transformed into integrative motives. In line with Self-Determination Theory (Ryan & Deci, 2000), externally imposed requirements can undergo a process of internalization, shifting from controlled forms of regulation to more autonomous orientations. This mechanism may explain why O2L2S, despite lacking a direct impact on sustained effort, can exert an indirect influence by reinforcing students' sense of belonging to the global professional community. Pedagogically, this finding underscores the importance of aligning curricular requirements and institutional expectations with learners' broader professional visions, thereby enhancing the likelihood that external pressures evolve into self-endorsed goals. Taken together, these results suggest that although external factors (O2L2S) or ambitious long-term outcomes (I_PROM) may provide an initial impetus for attending classes or acknowledging the relevance of EMP, they exert comparatively weaker influence on the maintenance of proactive, self-regulated learning effort.

5.2. Effects of Supplementary Dimensions on the Direct Predictors of ILE (RO2)

The second stage of the diagnostic process, i.e., the second research objective (RO2), examined how supplementary motivational dimensions influence the core motivational dimensions that proved to be direct predictors of ILE (i.e., INTEG, IL2S, and I_PREV). Results show that S_CONF, S_EFF, ATT_POS, ATT_NEG, and L2_ANX exert significant, though varied, effects.

S_CONF emerged as a particularly influential factor, significantly predicting both INTEG and IL2S. Students with higher confidence in their English abilities are more likely to envision themselves as proficient EMP users and to feel a stronger sense of belonging to the medical community. Both S_CONF and S_EFF significantly predicted IL2S, aligning with Al-Hoorie's (2018) meta-analysis, which highlights the close link between self-efficacy and the Ideal L2 Self. Moreover, evidence suggests that this relationship is bidirectional: Roshandel et al. (2018) found that the Ideal L2 Self significantly predicts self-efficacy.

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L2_ANX significantly influences both INTEG and I_PREV. Higher L2 anxiety appears to heighten sensitivity to the potential negative consequences of insufficient EMP proficiency, strengthening prevention-driven motivation. Conversely, lower anxiety levels may reduce the perceived urgency of such risks. Notably, higher-anxiety EMP learners may also exhibit a stronger sense of belonging to the medical community. Similarly, students' positive attitude (ATT_POS) toward learning EMP predicts both INTEG and I_PREV. A positive attitude fosters a stronger identification with the medical community (INTEG) and reinforces the recognition of EMP as essential for academic and professional success (I_PREV), motivating students to meet external expectations and avoid potential disadvantages in their careers.

ATT_NEG predicts I_PREV negatively, indicating that students with unfavorable views of EMP are less likely to be motivated by concerns about avoiding disadvantages or fulfilling external expectations. Such students may downplay the relevance of EMP, reducing their prevention-driven motivation.

5.3. From Diagnosis to Support: Pedagogical Implications

The findings suggest that the respondent Hungarian medical students (predominantly lower-year students with a relatively high level [B2-C1] of English proficiency) demonstrate a strong motivational foundation for learning EMP. INTEG, IL2S, and I_PREV play central roles, indicating their awareness of EMP's significance, their aspiration to belong to the medical community, and their strong vision of themselves as proficient users of English in professional contexts. This profile underscores the importance of sustaining and further enhancing these existing motivational strengths through effective and engaging teaching practices. Consequently, the question naturally arises as to which pedagogical strategies EMP teachers can employ to foster the vision of a competent EMP user and to create a supportive and engaging learning environment that reinforces self-confidence and self-efficacy, while minimizing L2 anxiety.

A key strategy for promoting IL2S and INTEG is integrating authentic materials through content- and context-based teaching. Content-based instruction, where students engage with authentic medical texts, enables learners to see the relevance of English in their professional lives (Antić, 2016). Faure (2018) emphasizes that incorporating medical topics into EMP courses supports language acquisition and consolidates students' medical knowledge, making language learning more meaningful and effective. Likewise, context-based teaching, such as using real-world scenarios and simulations, enhances students' ability to connect EMP learning with their future professional roles. Role-playing medical consultations (Hambuch et al., 2024) or conducting simulated ward rounds helps students envision themselves using English confidently and effectively in professional settings. Wiertlewska (2019) proposes a new paradigm where EMP is approached through medical subjects, reinforcing content knowledge via EMP. A key setting for this is the skills labs, a widely used method bridging theoretical instruction and clinical practice. Skills labs provide a low-stakes environment for practicing essential medical skills, including doctor-patient communication, before transitioning to real clinical settings. Their simulation-based nature makes them ideal for integrating EMP instruction, allowing both Hungarian and international students to train together in an authentic yet controlled clinical environment.

Beyond authentic, content-based, and context-based approaches, recent research highlights the value of vision-oriented pedagogies in strengthening learners' Ideal L2 Self. Vision-based interventions have shown that guided imagery tasks, structured self-exploration, and future-self mapping can significantly enhance students' motivation and sustained effort (Sandu & Rodríguez Gil, 2023; Sato, 2021). For practitioners, motivational lesson frameworks, such as those outlined in Dörnyei and Hadfield (2013) and Dörnyei and Kubanyiova (2014), offer adaptable classroom activities that can be integrated into EMP instruction to help students envision themselves as confident future

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users of medical English. Embedding such vision-building activities alongside simulation-based learning may therefore amplify both the authenticity and the motivational impact of EMP courses.

For these methods to succeed, an interdisciplinary collaboration between EMP instructors and medical content teachers would be essential. Joint efforts to design tasks that blend linguistic and professional content can ensure that students are exposed to authentic medical content and contexts while improving their language skills. Faure (2018) argues that involving medical professionals in EMP instruction not only enhances authenticity but also boosts students' confidence by demonstrating the practical use of medical English in professional settings. A further step towards authenticity involves providing non-Anglophone students with opportunities to attend lectures in the EMI program or offering elective courses in which students can choose the language of instruction. Additionally, joint classes that bring together students from EMI and non-EMI programs can create opportunities for real-life language practice and cross-cultural exchange. These interactions not only strengthen linguistic competence but also enhance students' intercultural awareness – an increasingly critical skill in globalized medical practice (Lu & Corbett, 2012). Establishing professional networks that enable EMP educators in non-Anglophone contexts to gain insights into the use of English as a working language in authentic medical settings could also enhance instructional authenticity and, consequently, improve the overall effectiveness of EMP instruction.

Building a positive and supportive environment is also key. Fostering motivation also requires creating a classroom atmosphere that reduces anxiety, boosts self-confidence, and supports self-efficacy. Scaffolding techniques, where teachers provide step-by-step support tailored to individual needs, can help students overcome initial challenges in understanding medical texts or performing communicative tasks. Over time, this approach enhances learners' self-confidence and self-efficacy, which, as the study shows, are pivotal to reinforcing the Ideal L2 Self. Reducing L2 anxiety is equally important. Teachers can address this by promoting a non-judgmental, inclusive classroom climate where mistakes are seen as natural parts of learning. Peer collaboration (near-peer teaching and peer-teaching) and group tasks can further alleviate anxiety by shifting the focus from individual performance to collective achievement.

In summary, the findings contribute to the growing body of research extending the L2MSS to specialized educational domains. They confirm the cross-contextual relevance of Integrativeness and the Ideal L2 Self, while also highlighting the distinctive influence of prevention-focused motivation and affective factors in high-stakes professional training environments such as medicine. These insights refine our understanding of how motivation operates in EMP learning and offer a diagnostic basis for pedagogical interventions aimed at sustaining long-term engagement.

To our knowledge, this is the first empirical study to apply and validate Dörnyei's L2MSS within the domain of learning EMP. The findings suggest that the same approach could inform research and pedagogy internationally, particularly in other non-EMI medical programs where non-Anglophone students require EMP for their academic and professional development.

6. Limitations and Future Directions

While this study fills a research gap and provides valuable, unprecedented insights into the motivational factors influencing medical students' efforts in learning EMP, several limitations must be acknowledged. First, the overrepresentation of first- and second-year students and female participants may limit the generalizability of the findings. Second, there are differences in EMP-related outcome requirements across medical schools, which are likely to impact students' motivational dispositions. Furthermore, respondents from the University of Debrecen, where no formal outcome requirement existed at the time of the study, were overrepresented. Third, the focus on Hungarian medical students limits the applicability of the results to other linguistic and cultural contexts. However, the questionnaire and the model-building approach developed in this study are

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versatile and can be effectively applied in other settings. Conducting similar research in other countries would not only yield valuable insights for those settings but also enable meaningful cross-country comparisons.

The successful implementation of the teaching strategies and approaches outlined above raises broader questions regarding teacher expertise in EMP instruction, which warrants further investigation. Effective EMP educators must not only demonstrate advanced English proficiency and pedagogical competence but also possess a solid understanding of medical contexts. While collaboration with content specialists or international collaboration among EMP instructors can partially bridge this gap, it also underscores the need for further research into the development of specialized teacher training programs. Future studies could explore the most effective models for equipping EMP instructors with both linguistic and domain-specific knowledge, ensuring they can meet the unique demands of medical language education. Equally important, however, is preparing instructors to apply motivational strategies in the classroom. As this study has shown, sustaining students' engagement in EMP is strongly linked to factors such as self-confidence, self-efficacy, and vision of their future professional selves. Thus, teacher training models should not only provide subject-specific expertise but also incorporate evidence-based approaches for fostering and maintaining learner motivation.

7. Conclusion

This study set out to examine (RO1) the direct and indirect effects of core motivational dimensions (IL2S, O2L2S, INTEG, I_PROM, and I_PREV) on Hungarian medical students' ILE. The analyses revealed that Integrativeness, Ideal L2 Self, and Instrumentality Prevention were the strongest direct predictors of ILE, together explaining 31% of the variance. This highlights that belonging to the international medical community and envisioning oneself as a proficient EMP user are key motivational forces behind sustained learning effort.

With respect to (RO2), the study explored how supplementary psychosocial dimensions (Self-Confidence, Self-Efficacy, L2 Anxiety, and Attitudes) shape those core predictors. Findings indicated that self-confidence and self-efficacy substantially reinforce the Ideal L2 Self, while positive attitudes and moderate anxiety levels contribute to Integrativeness and prevention-driven motivation. Together, these interrelations demonstrate that EMP motivation is sustained not only by instrumental goals but also by affective and self-regulatory dispositions.

Although this study focused on Hungarian medical students, the findings have broader implications: (1) This study provides robust evidence supporting the relevance of Dörnyei's L2MSS (2005, 2009) in the context of EMP. (2) Methodologically, the study underscores the utility of adapting and contextualizing scales from established motivational frameworks for domain-specific settings. (3) These insights provide valuable guidance for educators and policymakers aiming to enhance curriculum design and instructional practices in EMP and beyond. In an increasingly globalized medical field, where English serves as the lingua franca, the transfer of professional knowledge cannot be separated from the effective teaching and learning of EMP. By aligning instructional practices with students' motivational profiles, medical schools can better equip future professionals for the demands of global medical communication, collaboration, and lifelong learning. Well-designed and targeted EMP education can significantly contribute to students' academic success, professional development, and preparedness for the demands of a global medical community. Strong collaboration between EMP teachers and content teachers would ensure that EMP instruction not only meets students' immediate needs but also equips them with the linguistic, communicative, and intercultural competencies necessary to thrive in their future careers. Enhancing the quality and effectiveness of EMP education is, therefore, not only in the interest of students but also a shared responsibility in advancing medical education as a whole.

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Pedagogically, the findings highlight the importance of designing EMP instruction that integrates authentic, simulation-based, and vision-building activities to enhance medical students' Ideal L2 Self and Integrativeness, while creating psychologically supportive environments that mitigate L2 anxiety and foster self-efficacy. From a research perspective, the study underscores the applicability of the L2MSS to EMP and calls for future investigations that extend this contextualized framework to other linguistic and cultural settings and to teacher-related motivational factors.

In sum, by directly addressing the research questions and translating empirical patterns into actionable recommendations, this study contributes to a more comprehensive understanding of how motivational and psychosocial factors interact to sustain non-Anglophone medical students' engagement in learning English for Medical Purposes.

Declarations

Author Contributions. A.S.: Literature review, Conceptualization, Methodology, Investigation, Writing – original draft, Visualization, Data analysis. É.F.: Writing - Review & Editing, Supervision. M.B.: Data analysis. All authors have read and approved the published version of the article.
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Data Availability Statement. The data can be provided by the corresponding author upon request.
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Appendix I.

English for Medical Purposes (EMP) Motivation Questionnaire Statements

(all statements are designed to be rated on a 6-point Likert scale)

Intended Learning Effort

I am willing to make a serious effort to learn EMP.

I work hard to improve my EMP skills.

I believe I am doing everything I can to learn EMP.

I will probably continue to improve my EMP even after I graduate.

Ideal L2 Self

I can imagine myself communicating effortlessly with patients in English abroad.

I can picture myself giving a presentation in English at a conference.

I think it is likely that I will publish in English.

I believe that one day I will be able to communicate fluently and without anxiety in English in a professional setting.

I see myself as a confident user of EMP in the future.

I can imagine myself communicating effortlessly in English with colleagues abroad.

Ought-to L2 Self

I am studying EMP because everyone says it is essential these days.

I attend EMP classes because, as a student in this medical school, I am expected to know EMP.

My peers/classmates are also studying EMP, and I do not want to be left out.

Integrativeness

I believe that within the medical professional community, only those with English language skills can succeed.

I am also studying EMP because it is the only way I can participate in the work of the scientific community.

Knowing EMP is important to me because it allows me to become a part of the international professional (publishing and scientific) community.

If I were not studying EMP, I would feel like I am missing out on something.

Instrumentality – Promotion

I believe that knowing EMP will give me more opportunities to find a suitable job.

Learning EMP is important to me for my career.

Knowing EMP is important to me because I would like to apply for a scholarship abroad (e.g., Erasmus).

EMP is important to me so that I can present at conferences.

EMP is important to me because I would like to work in a preclinical department, doing research and/or teaching.

EMP is important to me because it is the only way to advance in the scientific field.

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EMP is important to me because there is a chance I will work abroad one day.

Instrumentality – Prevention

Knowing EMP is important to me because I do not want a lack of language skills to hold me back in scientific work or applying for scholarships.

EMP is important to me because I do not want the lack of it to limit my future opportunities.

Knowing EMP is important to me because I do not want my colleagues to look down on me in the future for not speaking English or not publishing in English.

If I had not studied EMP, I would be at a disadvantage compared to my classmates.

Many study resources, like videos and diagrams, are in English, and I do not want to be at a disadvantage by not understanding them.

Positive Attitude toward learning EMP

I think it would be useful if every medical student were required to learn EMP.

It almost feels natural to me that learning English is necessary, and now it's time to learn EMP.

I put in a lot of effort to improve my EMP skills.

I also enjoy EMP classes because I feel that, in addition to improving my English, I am gaining additional knowledge.

I especially enjoy(ed) EMP classes.

The EMP classes provide(d) a refreshing break from studying other professional subjects.

I like the EMP classes because we cover topics related to the medical field.

Negative Attitude toward learning EMP

In my opinion, it would be enough to focus on general English skills at university; one can learn EMP later on.

I believe that EMP is just Latin words that need to be pronounced in English.

I am attending EMP classes because it was the only option I could take.

L2 Anxiety

I am afraid my classmates will laugh at me in the EMP class.

I am worried that the EMP teacher will make fun of me in class.

In EMP class, I only speak up if I'm sure the grammar is correct.

In EMP class, it bothers me when I hear my pronunciation sound too Hungarian ('Hunglish').

It bothers me that my classmates speak English better than I do in EMP class.

I feel especially anxious in EMP classes.

I am reluctant to speak up in EMP classes.

Self-Confidence

I think I have a good aptitude for English.

I believe I can make myself understood in any everyday situation in English.

I think I could make myself understood in any professional (medical) situation in English.

I am proud of my general English skills.

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I am proud of the EMP skills I have acquired so far.

I enjoy(ed) being able to actively participate in EMP classes and speak a lot.

Self-Efficacy

I find learning EMP fairly easy.

I try to take advantage of opportunities to communicate in English.

If I make an effort, I learn EMP easily.

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CHAPTER FIVE

Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary

(Study 4)

In this chapter, we include our article (Stötzer et al., 2025b), published in a Q2-ranked journal. The study is presented in the dissertation exactly as published in the journal, with no content alterations, and is provided in a searchable format. The published study is open access and freely available. Throughout the Introduction and Discussion sections of the dissertation, this article is cited as (Stötzer et al., 2025b). As the journal required UK spelling, this article is presented according to British English conventions, which differs from the rest of the dissertation.

Authors	Year	Title	Journal	SJR	
Stötzer, A., Bagyura, M. Farkas, É.	2025	Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary	*English Teaching & Learning*	Q1* Q2**	MTMT
* *Scopus – Linguistics and Language* ** *Scopus – Education*					
Published as:	Stötzer, A., Bagyura, M., & Farkas, É. (2025). Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary. *English Teaching & Learning, 49*(4), 889–915. https://doi.org/10.1007/s42321-025-00207-1				

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ORIGINAL PAPER

Self-appointed and Self-taught? Professional Characteristics and Challenges of LSP Teachers in Hungary

自任與自學？匈牙利 **LSP** 教師的專業特質與挑戰

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Abstract
Despite the growing international recognition of Languages for Specific Purposes (LSP), the role and needs of LSP teachers in Hungary remain underexplored. Based on a survey of Hungarian higher education LSP teachers, this study examines their professional characteristics and challenges. The findings reveal that many LSP teachers transition from general language teaching without formal training in their students' disciplines or LSP-specific methodologies. LSP teaching poses unique challenges, including the significant time required to develop curricula and teaching materials. Beyond preparation, teachers often engage in extensive self-directed learning to acquire specialised content knowledge needed to meet diverse and evolving demands. The study underscores the importance of institutional support, advocating for legal frameworks that recognise that teaching LSP differs from teaching languages for general purposes. The results suggest that it would be crucial to create formal training opportunities, foster collaboration between content specialists and LSP teachers, implement mentorship programmes, and reduce the workload of LSP teachers. This research advocates for establishing LSP teaching as a distinct profession within the Hungarian educational landscape, laying the foundations for future research and contributing to the greater recognition of LSP teaching in national and international contexts.

摘要
儘管國際間對專業語文(LSP)的認可與日俱增，但對於匈牙利 LSP教師角色與需求仍未有充分的探究。本研究以匈牙利高等教育LSP教師的調查為基礎，審視他們的專業特質與挑戰。研究結果顯示，許多LSP教師都是從一般語言教學轉型而來，未曾接受過學生相關學科或LSP教學法的正式訓練。LSP教學具有其獨特的挑戰，包含了研發課程和教材所需的大量時間。除準備工作外，教師通常還需進行廣泛的自主學習，以獲得所需的專業學科知識以滿足不同領域多樣且不斷變化的需求。本研究強調行政支援的重要性，倡導承認LSP教學有別於一般語言教學的制度框架。研究結果顯示，提供正式的訓練機會、促進學科

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知識專家與LSP教師之間的合作、實施師徒計畫，以及減輕LSP教師的工作量至關重要。本研究主張確立LSP教學為匈牙利教育領域中的獨特職業，為未來的研究奠定基礎，並促進LSP教學在國內和國際環境中獲得更廣泛的認可。

Keywords English for Specific Purposes · Languages for Specific Purposes · LSP teacher · Professional development needs · Professional identity · Higher education

關鍵詞 專業英語 • 專業語文 • 專業語文教師 • 專業發展需求 • 專業認同 • 高等教育

Introduction

Languages for Specific Purposes (LSP) and its subfield, English for Specific Purposes (ESP), is an umbrella term referring to the specialised use of language tailored to specific professional, academic, or technical domains (e.g. Legal Spanish, Medical English, Business German). LSP (including ESP) emphasises aligning language teaching with field-specific vocabulary, discourse, and communicative practices, employing learner-centred approaches and specialised materials to ensure relevance and real-world applicability (Basta, 2023; Long & Uscinski, 2012; Macià, 2012). Consequently, 'LSP teachers' are those 'practitioners' (Anthony, 2018) who teach these specialised (foreign) languages primarily at higher education institutions (HEIs) to students who pursue various disciplines such as law, medicine, or economics. LSP teachers play a crucial role in bridging the gap between language learning and the specialised demands of various professions. They must have a deep understanding of both the language and the specific domain in which their students will operate. This dual expertise allows them to create relevant and effective learning materials that reflect the real-world contexts in which their students will use the language (Jurkovič, 2024; Macià, 2012).

Since the 1960 s, it has been increasingly acknowledged worldwide that learning LSP, particularly ESP, has become critically important in higher education (Hyland, 2022). The focus has shifted from general language learning (especially in the context of English) towards specialised languages (Supunya, 2023). In our increasingly globalised world, with substantial workforce mobility, it has become crucial to complement professional knowledge with the ability to communicate in the specialised language of one's field (Sowa, 2023). Learning LSP helps students acquire specialised vocabulary and communication skills tailored to their academic and professional needs, thereby enhancing both academic performance and career prospects. Over the years, nearly all aspects of the LSP-related educational context have been examined, with the notable exception of LSP teachers. However, recent years have seen a growing international trend within the European Higher Education Area (EHEA) to address this gap (Chateaureynaud & John, 2023; Jurkovič et al., 2024; Kic-Drgas & Jurkovič, 2024).

We also initiated a context-specific survey to gain a comprehensive overview of LSP teachers across the country, in Hungary. Such a survey seemed timely, as no similar LSP teacher-focused research has been conducted in this context. This research contributes to international literature by examining the situation of LSP teachers in Hungary, offering a unique perspective that can enhance our understanding of how

the local context shape LSP practices. The insights gained may be applicable to other countries, thereby enriching the international, including European, LSP landscape, and guiding future development and research directions. Thus, we developed and implemented a questionnaire-based research project (Appendix) to investigate LSP teachers' views on several aspects of their work. This study, as part of this larger research project, presents results addressing two research questions within the Hungarian context:

1. What are the educational pathways and professional identity of LSP teachers?
2. What are the main challenges and difficulties of LSP teachers?

This article begins with a review of the literature in the European context, highlighting the critical issues that guided the development of the questionnaire and the formulation of our research questions. Next, an overview of the current situation of LSP and the specific status of LSP teachers in Hungary is provided. Subsequently, we describe our methodology and present our findings. In the 'Discussion and Conclusions' section, we contextualise our results, offer recommendations, and outline potential avenues for future research.

Review of the Literature

Languages for Specific Purposes Within the European Higher Education Area

Interest in LSP courses is steadily increasing at universities, and the demand for LSP teachers is growing within the EHEA (Ding & Campion, 2016; Kic-Drgas & Jurkovič, 2024). In recent years, several Erasmus + projects (CATAPULT,[1] TRAILs,[2] LSP-TEOC.Pro[3]) have been launched to fill gaps in LSP teacher training and support the professional development of LSP teachers (Anesa, 2024; Bocanegra-Valle, 2023; Chateaureynaud & John, 2023; Jurkovič et al., 2024). Given the predominance and *lingua franca* status of English, research findings relevant to LSP also originate from studies focusing on ESP (Basturkmen, 2019; Hyland & Wong, 2019; Whyte & Sarré, 2017). While we acknowledge additional relevant issues, this article will focus on these points providing the context for interpreting our research findings:

(a) *Professional*[4] *development needs.* For a long time, much of the literature on LSP focused on how LSP teachers assess student needs (Belcher, 2006). Only recently have studies begun to survey the needs of LSP teachers themselves (Bocanegra-Valle & Perea-Barberá, 2023; López-Zurita & Vázquez-Amador, 2023). Bocanegra-

[1] http://catapult-project.eu/
[2] https://erasmus-plus.ec.europa.eu/projects/search/details/2018-1-FR01-KA203-048085
[3] https://lsp-teoc-pro.de/
[4] When *professional development* of LSP teachers is discussed in the literature (and in this article), it refers to LSP as a 'profession'. Thus, professional development of the teacher refers to the process of improving the capabilities of the teacher (which in the case of LSP teachers includes gaining knowledge about the students' discipline as well).

Valle and Basturkmen (2019) established professional development needs categories which align with other recent studies on LSP teacher education (Nazari, 2020; Szymańska-Tworek & Makowska-Songin, 2019; Vega Umaña, 2020). Jurkovič et al. (2024) confirmed and upgraded this framework, proposing a three-stage model: a general Languages for General Purposes (LGP) teaching methodology course, followed by a general LSP teaching methodology course, and finally, discipline-specific[5] acculturation through in-service education supervised by an experienced LSP teacher and/or discipline specialist (Jurkovič et al., 2024, p. 323).

(b) *Scarcity of pre-service and in-service professional development programmes*. It has been found that there is a growing demand for LSP courses at HEIs (Jurkovič et al., 2024), yet there are limited professional development programmes available for LSP teachers (Bocanegra-Valle, 2023; Bocanegra-Valle & Basturkmen, 2019). Jurkovič et al. (2024) argue that this is because a language degree and a general teaching methodology course are generally considered sufficient for teaching LSP in higher education.

(c) *Lack of speciality-related qualification, lack of content knowledge.* Szymańska-Tworek and Makowska-Songin (2019) found that in-service ESP teachers in Polish higher education struggled with the lack of discipline-specific knowledge and felt that their initial training was insufficient for teaching ESP. In contrast, Vega Umaña (2020) found that LSP teachers in French higher education believed their expertise should primarily be linguistic, cultural, and pedagogical, while the disciplinary knowledge should mostly be provided by the students.

(d) *Acquiring content knowledge through collaboration.* LSP teachers are often advised to acquire content knowledge through self-training, students' input, and collaboration with content specialists. However, as Woodrow (2017) notes, such collaboration is rare due to differing epistemological and ontological perspectives, which can hinder mutual understanding between language and content specialists.

Languages for Specific Purposes in the Hungarian Higher Education Context as Reflected in Literature

While there has been limited focus on LSP teachers, research of LSP itself is not a recent development in Hungary. In 2001, Kurtán (2001) discussed the importance and evolution of LSP teaching in Hungary, emphasising its distinction from teaching LGP due to its sensitivity to specialised contexts and demand for a high degree of flexibility. She emphasised that performing the tasks of an LSP teacher requires specific competencies; however, she noted that these competencies were not recognised in Hungary.

In 2012, Kurtán and Silye revisited the state of LSP teaching in Hungary, noting that the employment methods and organisational structures for LSP teachers remained diverse. LSP instruction was still conducted predominantly by language teachers, with occasional collaboration with subject-specific instructors depending on the institution.

[5] In the literature, the terms *specific area*, *field of speciality*, *discipline*, *content*, *domain*, and *subject*, and the related expressions such as *domain-specific language*, *disciplinary knowledge*, *content knowledge*, *specialist area*, and *subject-specialists* are often used interchangeably, reflecting the intention of the authors to refer to the discipline the students are studying.

Self-training emerged as the most important learning method for LSP teachers. A common complaint was that institutions failed to recognise and value LSP instruction and LSP teachers despite considerable progress in the field over the previous decade. These advancements included the establishment of the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes[6] in 2003. Kurtán and Silye (2012) also noted that many LSP teachers had obtained academic degrees. They argued that all conditions were in place for developing a high-quality, European-standard LSP teaching system, only strong central will and an educational strategy were missing.

Ten years later, Einhorn (2022a, 2022b) examined the goals and content of foreign language teaching (not particularly LSP) in Hungarian HEIs, focusing on the organisations responsible for this task. She has identified two main types of organisational units: (1) university-level units, offering a variety of LGP and LSP courses across multiple faculties; (2) smaller, 'dedicated' units operating under specific faculties, which usually provide LSP classes to their respective faculties. In some universities, these types coexist. Einhorn (2022b) has noted that within higher education, the declared goal of learning foreign languages is learning LSPs, adding that this can be interpreted in multiple ways by the stakeholders. She calls for further research to better understand LSP teachers' attitude towards LSP teaching and pedagogical modernisation.

In 2023, Veresné Valentinyi conducted a survey among Hungarian university students on the effectiveness of LSP instruction. In her conclusion, she has noted that, compared to her study conducted in 2011, the situation of LSP instruction has remained unchanged for over two decades, facing the same problems as before. However, a recent regulatory change may be seen as the manifestation of the 'strong central will' that Kurtán and Silye (2012) observed as lacking: in 2022, Act LIX of 2022, amending Act CCIV of 2011 on National Higher Education, removed the previous language exam requirement for obtaining a degree[7] and instead mandates that HEIs provide LSP instruction necessary for students to practice their qualifications in their respective fields, along with proper assessment of these skills. The amendment allows HEIs to set their own foreign language-related entry and exit requirements and potentially prioritise other forms of language proficiency assessment, such as internal, institutional exams. However, it does not address the allocation of human or other resources needed for implementation, leaving the responsibility to the HEIs to determine, at their discretion, who should undertake this task and how. Naturally, the ultimate impact on LSP teachers and the trajectory of LSP in Hungary remains to be seen.

'Invisible' LSP Teachers in Hungary

LSP-related research in Hungary has predominantly focused on linguistic and didactic aspects, curriculum and material design, and student needs, while neglecting the teachers themselves. When research did address teachers, LSP teachers were examined only tangentially and never as the primary focus. This oversight can be attributed to several factors.

[6] For the English site of the Association, see http://szokoe.hu/about-us?lang=en; its journal, *Porta Lingua* serves as an important platform for publications in the field, see http://szokoe.hu/hirek/2020/07/03/porta-lingua-online-journal?lang=en

[7] From the mid- 1990 s, at least one intermediate-level language exam was required for university degrees.

First, the role of an LSP teacher as a distinct professional designation does not exist in Hungary; it is not included in the Hungarian Standard Classification of Occupations.[8] Educators who teach LSP (and/or LGP) at HEIs are employed as either (language) teachers or as university instructors/members of academic staff, the latter contingent upon their enrolment in or completion of PhD studies. According to Hungarian regulations, only those pursuing or holding a doctoral degree are recognised as university instructors (from the rank of assistant lecturer upwards). Their teaching load (depending on their academic title) is 40 to 60% of that of language teachers. The teaching load for language teachers at HEIs is equivalent to that of high-school language teachers, suggesting that decision-makers/institutions view LSP teaching as equivalent to LGP teaching.

Second, since there is no official role for LSP teachers, there are no associated formal[9] education opportunities in Hungary that provide LSP-specific qualifications or certificates.

Third, there is no system for continuous professional development for LSP teachers in Hungary. It is therefore particularly unfortunate that, as a result of the European Union's decision, 21 Hungarian universities are no longer eligible to participate in Erasmus + programmes due to concerns over corruption (Council of the European Union, 2022; Telex, 2023).

Fourth, LSP teachers are difficult to 'identify': they are employed across various units of different organisations of HEIs, and there are no official data or a register for these teachers. This lack of information hinders the accurate estimation of their population. Although official data exist on language teachers employed at HEIs, these data do not distinguish between those who teach LGP or LSP, or both. Additionally, there are those LSP teachers who are categorised as 'university instructors' due to their academic degree. While there are official data on university instructors, the specific number of those who teach LSP is unknown.

Methodology

The results of this research are based on an online survey conducted between February and April 2024. The research invitation was sent to language teachers and university instructors who were teaching or had previously taught LSP at HEIs[10] in Hungary. Participants consented to their data and responses being used for research purposes, with assurances of anonymity and privacy. Participation was entirely voluntary.

The online questionnaire was distributed through the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes, requesting that they

[8] https://www.ksh.hu/docs/osztalyozasok/feor/feor_rendelet_egyseges_szerk_eng.pdf

[9] In this study, we used Johnson's and Majewska's (2022) definition and descriptions of these terms to categorise the formal, non-formal, and informal ways of learning.

[10] In Hungary, there are 41 universities (5 state-funded and 34 are 'foundation universities'), as listed in Annex 1 of Act CCIV on National Higher Education. For the analysis of the European University Association, see https://www.eua.eu/downloads/publications/2023%20eua%20autonomy%20scorecard_hungary.pdf

forward it to their members. We also contacted 19 foreign language centres and organisational units of 17 Hungarian HEIs that offer language courses (LGP and LSP), requesting their cooperation in distributing the questionnaire to their colleagues teaching LSP.

The language of the questionnaire was Hungarian, and it was completed by 44 LSP teachers from 15 Hungarian HEIs.[11] In the absence of official data on the total population of LSP teachers in Hungary, we compared the HEIs in our sample with other studies and available data to highlight that our respondents are affiliated with key Hungarian HEIs in the field of LSP: (1) Einhorn (2022a, 2022b) in her survey, identified 17 organisational units belonging to 13 Hungarian HEIs,[12] 11 of which overlap with those in our study. (2) The Hungarian Association of Teachers and Researchers of Languages for Specific Purposes has 105 members affiliated with 19 Hungarian HEIs, 13 of which overlap with those in our sample. (3) Twenty respondents are affiliated with the top five Hungarian universities based on the HVG Diploma[13] ranking. The significant overlap of HEIs suggests that our sample includes representatives of Hungary's most prominent and influential HEIs.

We developed a self-administered questionnaire comprising 10 demographic, 9 open-ended questions, and 22 closed-ended questions (Appendix). Respondents could also add comments to further elaborate on their responses. The questionnaire underwent a think-aloud protocol and piloting, leading to necessary revisions before distribution. The demographic and professional background questions covered gender, age, mother tongue, first foreign language (first L2), affiliation, teacher's degree, speciality-related qualification, and years of experience. Respondents were asked to select their field(s) of speciality and the language(s) they teach, with options to indicate multiple specialities and languages.

To address the first research question, three open-ended questions were used to explore the professional background and educational pathways of the respondents: (1) how they became LSP teachers, (2) what formal and not formal training they received to fulfil their current role as LSP teachers, and (3) whether they identify as LSP teachers and prioritise this role over others.

For the second research question concerning the challenges in LSP teaching, a preliminary survey conducted in January 2024 involved 10 LSP teachers who provided written descriptions of their work. These responses informed the compilation of 11 statements regarding the challenges in LSP teaching, which respondents rated on a 5-point Likert scale (from 1, strongly disagree, to 4, strongly agree; the 'I don't know' answers were excluded from the calculations of means and standard deviations). This was complemented by an open-ended question asking respondents to detail their main difficulties in teaching LSP.

[11] Three state-funded universities [out of 5]; 10 foundation-funded universities [out of 35]; and 2 foundation-funded colleges [out of 22].

[12] Einhorn has found that these organisations employed 337 teachers (219 language teachers and 118 university instructors holding or pursuing a PhD). However, Einhorn's figures pertain to language teachers at HEIs, not all of whom necessarily teach LSP.

[13] The HVG Diploma Ranking is an annual evaluation of Hungarian HEIs published by HVG (HVG is a prominent Hungarian economic and political weekly magazine, modelled after The Economist).

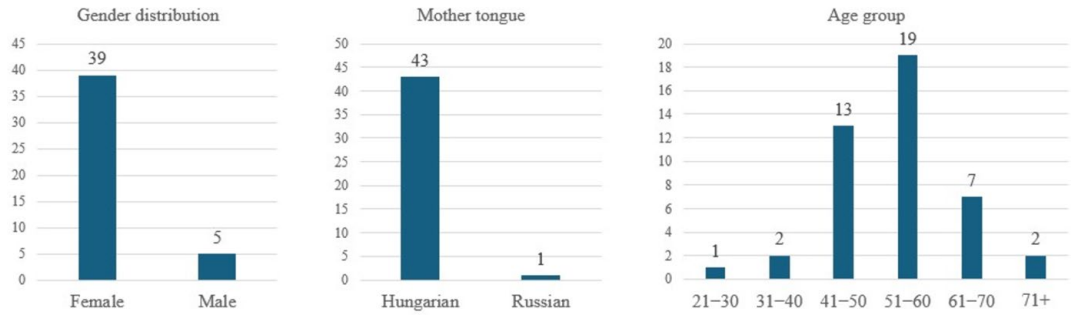

Fig. 1 Demographic characteristics of respondents ($n = 44$)

In the study, univariate and bivariate descriptive statistical analyses were performed using IBM SPSS Statistics 28. In the case of the latter, we analysed pairs of associated variables. To examine the relationship between variables, we applied two tests: the Monte Carlo test and the Kruskal–Wallis test. For both tests, a significance level of 0.05 was established. Despite the small number of participants, statistical analysis was conducted to identify patterns and relationships in the data that might not be evident through descriptive statistics alone. The Monte Carlo test was employed due to its suitability in cases where parametric tests are not applicable. By simulating the distribution of the test statistic under the null hypothesis, this method provides more reliable inferences, even with a limited dataset (Silva, 2015). Additionally, the Kruskal–Wallis test was chosen as a non-parametric method for comparing differences across three or more groups. This approach is particularly well-suited for the ordinal nature of the data in this study, as it does not rely on assumptions of normality or equal variances (Ostertagová et al., 2014). Qualitative data were processed using thematic data analysis (Braun & Clarke, 2019).

Results

Demographic and Professional Data

To provide a comprehensive understanding of the sample, demographic characteristics were collected and analysed. The gender distribution of the sample is presented in Fig. 1. All but one respondent identified Hungarian as their mother tongue. The majority of respondents fall within the age groups of $51-60$ and $41-50$.

To address our research questions in depth and explore the respondents' educational pathways, data on the respondents' professional background were collected (Fig. 2). In the sample, almost everyone holds a teacher's degree, most probably a language teacher's degree from the languages listed under first L2. Their first L2 is English in the case of 29 respondents. Three-quarters of the teachers in the sample lack any qualification in the respective field/speciality[14] the language of which they

[14] By qualification in the speciality, we mean degrees that can be obtained in the disciplines of the students of LSP teachers, e.g. Agricultural Sciences, Business Management, Medicine, and Economics.

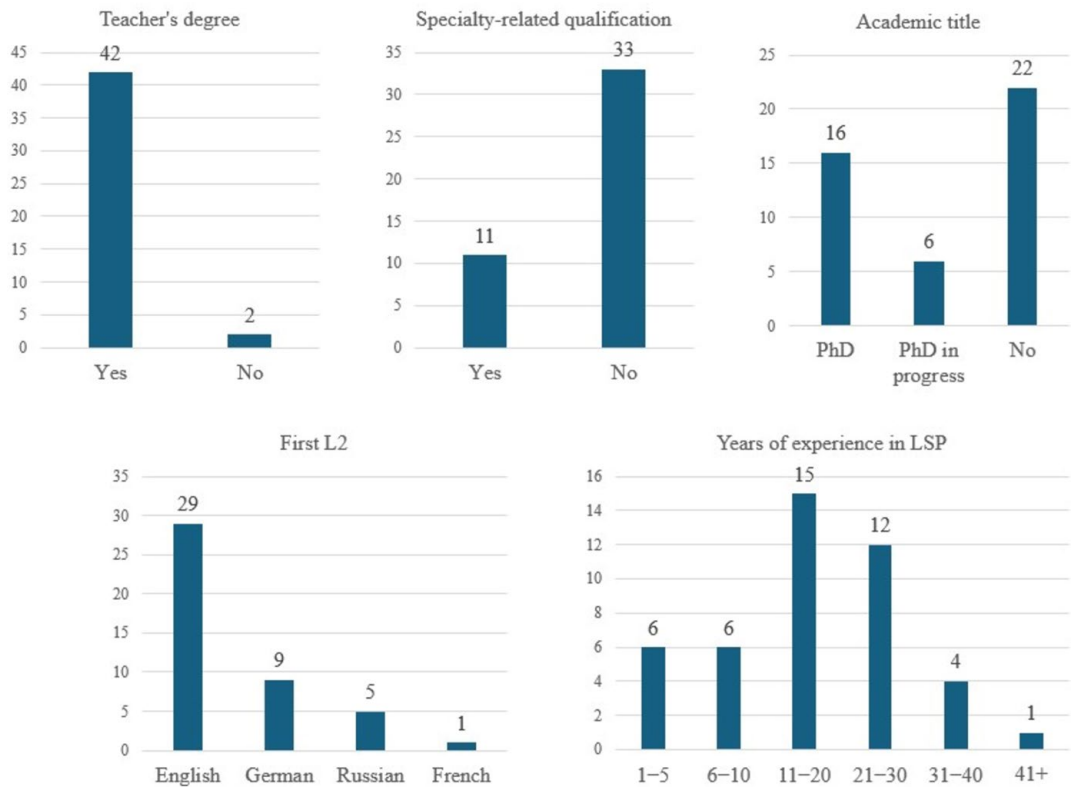

Fig. 2 Professional characteristics of respondents ($n = 44$)

are teaching. The sample is evenly divided, comprising 22 university instructors (16 with PhD degrees and 6 PhD candidates[15]) and 22 language teachers without PhD degrees. The average professional experience among the respondents exceeds 18 years.

Table 1 shows the specific professional fields and languages in which respondents teach LSP. English emerged as the dominant language, with many teachers of non-English LSPs also teaching ESP. The sample includes teachers of German, Hungarian as a foreign language, Latin, Russian, and French for Specific Purposes. Notably, in the sample, Hungarian as a foreign (specific) language and Latin appear exclusively in the field of medicine/health sciences and veterinary medicine, reflecting the large international student population in Hungary. For these students, learning Hungarian and Latin for Specific Purposes is often mandatory within their programmes. Respondents teaching Hungarian or Latin for Specific Purposes also teach another LSP. Twenty-four respondents teach the specialised language of health sciences, followed by the business and economics (17 respondents), reflecting the popularity of these university programmes among Hungarian students. Fourteen respondents indicated that they teach the specialised languages of multiple, entirely distinct disciplines.

[15] PhD candidates are employed as assistant lecturers; thus, they are categorised as university instructors according to the relevant Act on National Higher Education.

Educational Pathways of LSP teachers

Based on the analysis of the responses, the respondents' (R) reasons for entering their LSP career can be categorised into three groups (Fig. 3). The first category comprises respondents who chose and decided to pursue teaching LSP out of personal interest and ambition:

R13: 'I wanted to work at the university, so it was my own decision to apply.'

The second category includes those who were assigned or compelled to take on LSP teaching roles due to institutional requirements. Most of them likely began their careers as language teachers who happened to start teaching at HEIs:

R25: 'I initially started my career as a language teacher at the predecessor institution. Over the years, I gradually had to learn how to teach LSP.'

This transition, which was due to the increasing demand for learning LSP in several disciplines, is sometimes described by the respondents as an assignment:

R2: '[teaching LSP] was assigned to me as a task.'

Table 1 Fields of specialities and languages taught by respondents (n= 44; number of answers = 112)

Languages taught for specific purposes Fields of specialties	English	German*	Hungarian* (as a foreign language)**	*Other (languages)*
Agricultural & Environmental Science	5	1 *(1)*		(1) French
Business Management	8	3 *(2)*		(1) French
Economics	12	4 *(2)*		
Tourism & Catering	7	3 *(2)*		
Legal Matters & Public Administration	1			
Technical Engineering	4	2 *(1)*		
Medical & Health Sciences	20	3 *(2)*	12 *(9)*	(1) Russian (1) Latin
Language for Services	1			
Business	9	2 *(2)*		
*Other disciplines****	8	2	1	

** Numbers in brackets: number of respondents also teaching English for Specific Purposes.*

*** Hungarian as a Foreign Language (HFL) is taught to non-Hungarian ('international') students enrolled in Hungarian universities. Teaching HFL can also be for specific purposes.*

**** Under 'Other disciplines', eight additional speciality fields were mentioned, taught in English. Two of these are also taught in German and one in Hungarian (as indicated in brackets following the respective speciality areas): 1) Special Needs Education (GER); 2) Pedagogy and Arts (GER); 3) Veterinary (HUN); 4) Biology; 5) Sport; 6) Andragogy; 7) Intercultural Communication, Rhetoric and Communication Theory; 8) Horticulture, Viticulture & Winemaking, Landscape engineering, Biotechnology, and Food Science*

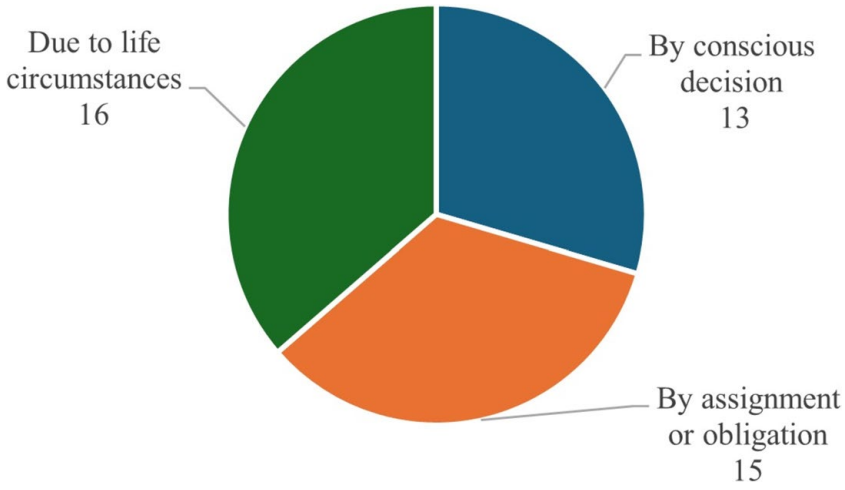

Fig. 3 Paths to becoming Languages for Specific Purposes teachers ($n = 44$)

Others who have embraced the change described it as 'life has brought it so'.[16] Several respondents mentioned that they had taken a liking to teaching LSP and had furthered their education specifically because of it:

R26: '[transition] was compulsory, but I realised that I liked and could teach LSP better than general language.'

Thus, the third category consists of respondents who indicated that their entry into the profession happened 'spontaneously' as life circumstances led them to it.

Respondents also mentioned the needs of the market when they argued for the necessity of LSP and some of them pointed out that knowledge of an LSP is a necessary competence for students.

Table 2 shows that respondents pursued diverse educational pathways, including formal, non-formal, and informal ways, to acquire the competencies needed for teaching LSP. Four respondents reported that they had not received any formal training to prepare them for their role as LSP teachers. Of the respondents, 17 included their university degrees,[17] PhD studies, and other formal training provided by institutions as key elements of their preparation towards becoming an LSP teacher. Specific LSP (ESP) training was mentioned 6 times, with 5 instances occurring abroad. Non-formal education was the most frequently cited form of learning (20 mentions), followed by conferences and study trips abroad. Informal ways of learning, particularly self-teaching (19 mentions), were also common, with several respondents (7 mentions) noting the help they received from colleagues. Overall, non-formal and informal ways of learning considerably outnumber formal educational pathways.

[16] This exact Hungarian phrase was used by many of the respondents because in our question, inquiring about their entry into the profession, we used it as an example.

[17] It should be noted, however, that in most cases, the university degree referred to is a teaching qualification and not specifically related to LSP, as such specialised degrees are not available in Hungary.

Table 2 Professional development for respondents ($n = 44$)

Ways of learning	Number of respondents	Frequency of mentions	Characteristic settings mentioned (number of mentions in brackets)
None	4	4	Did not receive any training (4)
Formal	17	25	University degree (6)
			Other misc. trainings offered by formal institutions (6)
			PhD studies (5)
			Translator and interpreter training (3)
			Other, miscellaneous (5)
Non-formal	25	37	Continuing education and organised training events (20)
			Conferences and workshops (11)
			Study trips (3)
			Other, miscellaneous (3)
Informal	30	46	Self-teaching (19)
			Learning from colleagues (7)
			Learning by doing (4)
			Learning from books and other sources (3)
			Experience gained from working in the field of speciality (2)
			Other, miscellaneous (11)

LSP Teachers' Identity

In addition to exploring their entry into the profession and their professional development, it is crucial to understand how these teachers teaching LSP perceive their professional identity. We found that 19 respondents (10 language teachers, 3 PhD candidates, 6 PhD holders) identified themselves as LSP teachers (Fig. 4), with 10 exclusively identifying with this role (LSP teacher — single-role). The remaining 9 respondents in this category (LSP teacher — multi-role) mentioned other identities/roles as well.

Only one respondent with speciality-related qualification identified primarily with that role. Three respondents noted that they are not LSP teachers per se but rather teachers who happen to teach LSP. Those who identified as university instructors all have PhD degrees. Every respondent who mentioned being a researcher did so alongside other roles, with 3 PhD holders stating that research is secondary to teaching.

> R7: '[how I define my identity as a teacher] depends on the context, but I usually make it clear that I teach a Language for Specific Purposes rather than general language. I consider myself more of a university instructor than a researcher, although I do have to engage in academic work as well.'
> R15: 'I prioritise my identity as an LSP teacher; I do not enjoy research as much – I prefer teaching.'

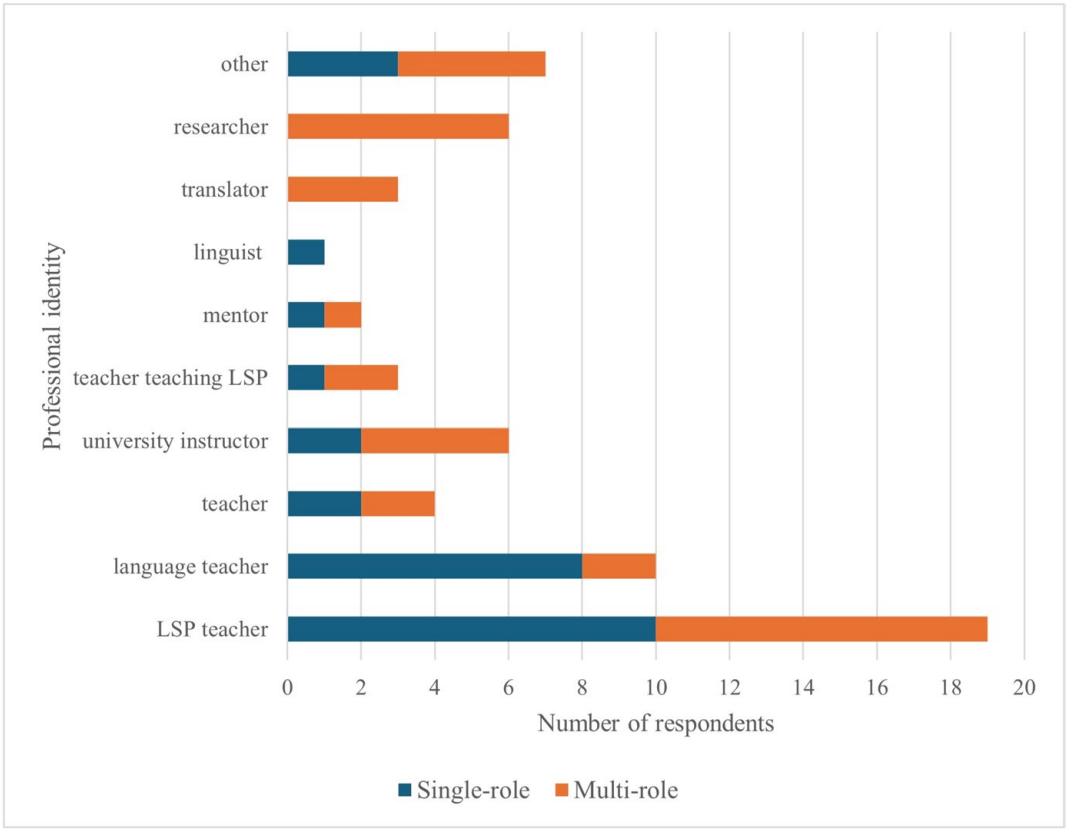

Fig. 4 Self-reported professional identity of respondents ($n = 44$)

Main Challenges and Difficulties of LSP Teachers

The results related to the second research question, 'What are the main challenges and difficulties of LSP teachers?', highlight several critical issues. Due to the exploratory nature of the research, both open-ended questions and closed-ended questions were used to examine the challenges and difficulties faced by respondents. This approach allowed for identifying and analysing factors not previously highlighted in the literature or the preliminary survey. The qualitative analysis yielded 43 responses, which are summarised in Table 3.

The responses to the Likert-scale questions, along with their means and standard deviations, are presented in Fig. 5 and Table 4, respectively. The Likert scale used was a 5-point scale, and 'I don't know' responses were excluded from the analysis.

Problems Related to the Specificity of the Job

The thematic analysis (Table 3) revealed several key areas of concern among respondents. The most frequently mentioned issues pertain to the specificity of the job, with 18 respondents highlighting 26 instances of such problems. By specificity, we refer to the involvement of the specialised fields or subject areas, which

Table 3 Respondents' perceptions of challenges ($n = 43$)

Identified themes	Number of respondents	Frequency of mentions
1. Problems related to the specificity of the job	18	26
2. Problems related to diversity* and the subsequent need for differentiation	14	17
3. Problems related to student motivation and classroom management	14	16
4. Problems related to the lack of institutional** support	13	18

*By diversity, we mean the variety of languages that LSP teachers are required to teach, the different levels of language proficiency among their students, the range of specialities they need to become knowledgeable in, and the diverse backgrounds of students, including various factors such as cultural, educational, and professional differences

**By institution, we mean not only the HEI in question but also the legal framework, regulatory background, and decision-makers' willingness to take action

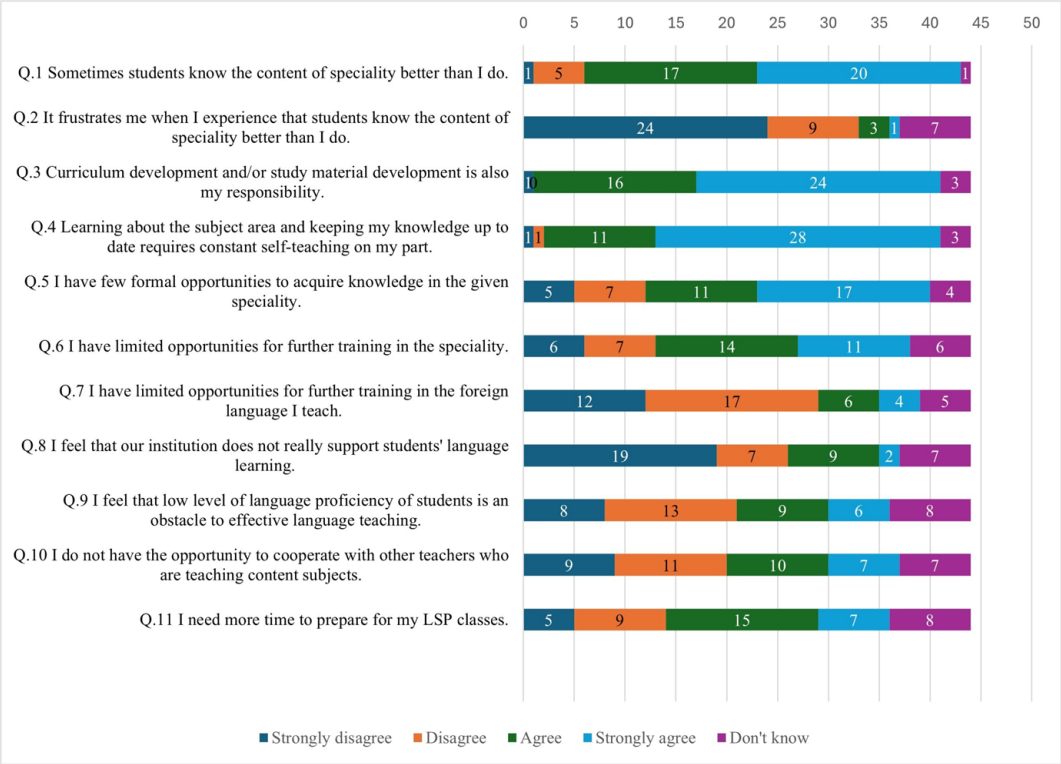

Fig. 5 Respondents' views on challenges ($n = 44$)

necessitates that LSP teachers acquire extensive discipline-related knowledge, typically through self-teaching (8 mentions).

> R12: '[the greatest challenge is] that it is necessary to acquire content knowledge on my own.'

Continuous self-directed learning and the independent acquisition of disciplinary knowledge require ongoing preparation (5 mentions), which takes a lot of time. This time demand was mentioned by several respondents (6 mentions).

Table 4 Means and standard deviations for LSP Teacher Questionnaire items on challenges

	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Q.9	Q.10	Q.11
Mean*	3.30	1.49	3.54	3.61	3.00	2.79	2.05	1.84	2.36	2.41	2.67
Standard Deviation*	0.77	0.77	0.64	0.67	1.06	1.04	0.94	0.99	1.02	1.07	0.96

*The 'I don't know' responses are excluded from the calculation of means and standard deviations in the table

R44: 'Despite dedicating a significant amount of energy to class preparation and self-teaching, I often feel there is not enough time to prepare for each class adequately.'

An important consequence of their role is the shortage of teaching materials (2 mentions), necessitating continual efforts to prepare and update these resources (3 mentions).

R19: 'The most challenging aspect is developing teaching materials that are tailored to market demands. It is difficult to identify what is needed exactly. It is challenging to establish connections with experts, and it is hard to select documents and topics that can be used to create the teaching materials. We have to "dig deep" into the profession; and we should be able to see how the language will ultimately be used.'

The results of the quantitative analysis corroborated the findings of the qualitative investigation in several areas. We found that the majority (37) of the respondents acknowledged that students sometimes know the content better than the LSP teachers themselves (Q.1). Among respondents with speciality-related qualifications, 70% (7) admit that students sometimes know the speciality better than the LSP teachers themselves (Q.1) (MCT $=5.508$, $p=0.021$). This opinion was even more prevalent among those without a qualification in the field of speciality, at 90.9% (30).

Separately, 33 respondents disagreed with the statement that they were frustrated by students' superior content knowledge (Q.2). Among these, 26 respondents acknowledged that students sometimes know the content better but were not frustrated by this. Nineteen respondents who were unfrustrated also reported having few formal opportunities to acquire content knowledge, while 11 believed such formal opportunities were available. Additionally, 16 respondents, who were not frustrated felt their opportunities for speciality-related further training were limited, whereas 12 did not share this view. When examining the impact of respondents' first L2, notable differences emerge (MCT $=4.507$, $p=0.040$) in relation to Q.2: all respondents (14) whose first L2 is not English appear unfrustrated by the fact that students sometimes know the speciality better. In parallel, 82.6% (19) of those whose first L2 is English report feeling unfrustrated, implying that 17.4% (4) of respondents with English as their first L2 do feel frustrated. The feelings of frustration (Q.2) also correlate with varying levels of teaching experience (MCT $=23.101$, $p=0.002$). Among novice teachers with $1-5$ years of experience, 33.3% (1) admit feeling frustrated due

to students' superior knowledge of the content. This issue is notably less prevalent among more experienced teachers, with none in the 6 − 10 years of experience group, 7.7% (1) in the 11 − 20 years of experience group, 18.2% (2) in the 20 − 30 years of experience group, and none in the over 30 years of experience group.

The specificity of the job requires LSP teachers to take responsibility for both curriculum and teaching material development, with the majority (40) confirming this (Q.3), and most (39) emphasising the need for continuous self-teaching (Q.4). Many (22) highlighted the lack of preparation time (Q.11), while a considerable number noted limited formal opportunities for acquiring speciality-related knowledge (28, Q.5), and limited opportunities for speciality-related further training (continuing education) (25, Q.6). Discrepancies were observed regarding formal education opportunities in the field of the speciality (Q.5) with 88.5% of English-first L2 respondents (23) agreeing that these opportunities are few, compared to 35.7% of non-English-first L2 respondents (5) (MCT = 7.890, $p = 0.005$). Similar patterns were noted for continuing education opportunities in the field of the speciality (Q.6), with 80.8% of English-first L2 respondents (21) and 33.3% of non-English first L2 respondents (4) agreeing (MCT = 8.026, $p = 0.004$). Additionally, 79.3% of respondents without a speciality-related qualification (23) agreed about limited further training opportunities in the speciality (Q.6), compared to 45.5% of those with a speciality-related qualifications (5). Co-occurrence analysis of Q.5 and Q.6 revealed that 24 respondents perceived a lack of both formal education and further training opportunities in the speciality, while 29 felt language-related further training opportunities (Q.7) were adequate. Further analysis of the co-occurrences of Q.5, Q.6, and Q.7 (i.e., the opportunities in the field of speciality, including formal education and further training, and in the field of language) reveals that 9 respondents found opportunities in all fields (speciality and language) adequate. In comparison, another 9 respondents perceived restrictions across all fields. Thirteen respondents indicated limited opportunities in the field of the speciality, in terms of both speciality-related formal education and speciality-related further training, but they believed there are sufficient language training opportunities. Only one respondent held the opposite view, indicating a lack of language training opportunities; and two respondents noted that only speciality-related formal education opportunities are missing.

Problems Related to Diversity and the Subsequent Need for Differentiation

Problems stemming from diversity, which includes language variety, differing student proficiency levels, and varied student backgrounds, were noted by 14 respondents, with 17 mentions.

> R36: 'It is very challenging to adapt to the diverse characteristics and language levels of a heterogeneous student group.'

Within this theme, respondents (6) highlighted the challenge of differentiating instruction to meet diverse student needs.

R26: 'Differentiation requires a tremendous amount of preparation and organisation for each class.'

One respondent noted the difficulty in conveying specialised content to students with low language proficiency, especially when these students possess advanced professional knowledge. Conversely, another respondent found it challenging to provide new information to students who already have high levels of both language proficiency and professional knowledge. Additionally, some respondents (3) mentioned the difficulty in balancing language instruction with teaching disciplinary content.

Responses to the closed-ended question on whether students' low language proficiency level hinders LSP teaching (Q.9) were divided. PhD candidates unanimously disagreed that students' low level of language proficiency impedes effective LSP teaching (KWT = 8.065, $p = 0.018$), a view shared by 50% (6) of respondents with academic titles and 52.6% (10) without academic titles. Conversely, 75% (6) of respondents with speciality-related qualification agreed that students' low level of language proficiency hinders effective LSP teaching, compared to only 32.1% (9) of those without such qualification (MCT = 5.786, $p = 0.014$).

Problems Related to Student Motivation and Classroom Management

Student motivation and classroom management were identified as challenges by 14 respondents, with 16 mentions. Among the student-related issues, the most frequently mentioned problem was maintaining student motivation and interest and sustaining their engagement (11 mentions).

R25: 'The most difficult part is sparking the interest of demotivated students.'
R36: 'Creating a learning environment where students feel confident to speak up is a real challenge. My students are often shy and afraid of making mistakes, which makes it difficult for them to participate in speaking activities.'

The difficulties and challenges related to students are naturally closely linked to students' workload (1 mention) and time constraints (1 mention).

Problems Related to the Lack of Institutional Support

Thirteen respondents cited 18 instances of issues related to the lack of institutional support, encompassing both the higher education institution and the broader regulatory framework. Mentions under the fourth theme are associated with the marginal nature of the subject (LSP as such) and the lack of institutional and decision-maker support.

R4: 'We constantly have to prove that learning LSP [for students] is an integral part of professional advancement; without it, there is no European-level professionalism.'

Respondents also highlighted the lack of recognition (2 mentions).

R44: 'I don't feel that my work is appreciated; I feel somewhat invisible within the system.'

Others complain about the marginal nature of the subject (when the institution does not allocate credits for LSP classes) (1 mention), and the low prestige of LSP teaching (3 mentions).

R42: 'The heads of our faculty make it clear in many ways that language teaching is not a priority, [...] so we have to work against significant headwinds.'

These issues are often compounded by large class sizes and the heavy workload of LSP teachers. Nevertheless, 26 respondents felt that their institutions support students' LSP learning (Q.8).

Discussion

The findings of this study provide an understanding of the demographic and professional characteristics, and identity of LSP teachers in Hungary and the challenges they face. The results underscore several critical issues that have significant implications for policy and practice in teaching LSP at HEIs. Our findings resonate with those reported in international studies (Anesa, 2024; Chateaureynaud & John, 2023; Jurkovič et al., 2024; Kic-Drgas & Jurkovič, 2024), highlighting similar critical issues and problem areas.

Educational Pathways and Professional Identity

Our study investigated the educational pathways of LSP teachers by surveying their entry into the profession, examining their self-reported ways of learning to explore their professional development and inquiring about their professional identity.

Entry into the Profession

The majority of LSP teachers in Hungary possess a pedagogical qualification, often due to their (language) teacher's degree. Many began their career as language teachers and later transitioned into LSP teaching, which aligns with findings from Bocanegra-Valle and Basturkmen (2019) that indicate a similar trend across Europe regarding the transition from general language teaching to LSP teaching (Jurkovič, 2024). The transition of the respondent LSP teachers occurred through one of three pathways: (1) by personal decision, (2) by institutional assignment, or (3) due to life circumstances. In fact, the third group comprises those who were also assigned with the task, but they managed to internalise the change; consequently, they described their entry as 'life has brought it so'.

Educational Pathway and Professional Development

Relatively few respondents possess qualifications directly related to the discipline the specialised language of which they teach; moreover, some of them teach the LSP of more than one discipline. It has also been confirmed that LSP teachers have limited formal opportunities to acquire content knowledge (Bocanegra-Valle, 2023; Bocanegra-Valle & Basturkmen, 2019; Jurkovič et al., 2024). By formal opportunities, we mean postgraduate specialist training programmes or shorter-term programmes that offer micro-credentials[18] designed specifically to prepare individuals for the role of an LSP teacher. In Hungary, there are no such training opportunities available for LSP teachers. The responses also indicate that non-formal and informal ways of learning play the most significant role in the pathway to becoming an LSP teacher after obtaining their degree, which, in most cases, is a language teaching qualification. Non-formal avenues like conferences and study trips are considered crucial for professional development by the respondents; it was also revealed that they have limited access to these resources. Fortunately, the opportunities for language-related further training are more favourable. Self-teaching emerged not only as the most frequently mentioned (informal) way of professional development but also as a significant challenge and difficulty. This is consistent with Anesa (2024), who notes that self-directed online training can enhance LSP teachers' professional identity and skill acquisition. The need for self-teaching is unlikely to diminish for two reasons: (a) There is an increasing demand for teaching LSP, especially ESP. Thus, it is anticipated that language teachers will continue to be the ones adapting and learning the specificities of the subject areas rather than professionals from these fields transitioning to language teaching in significant numbers. (b) The specific characteristics of the specific fields, such as business, agricultural sciences, or medicine, can only be thoroughly learned and understood at the local level, in close proximity of the subject area. This is evident from the frequent mention of 'learning from colleagues' and 'learning by doing' as informal ways of professional development. In our view, implementing local mentorship programmes would effectively meet these needs. This would align fully with the implementation of the third stage of the three-stage model proposed by Jurkovič et al. (2024), while online courses, such as the one developed through European initiatives, could fulfil the requirements of the second stage and serve as a valuable introduction to LSP.

Professional Identity

It is essential to emphasise the importance of formal training because, for any field to be recognised as a profession, the formal education of specialists working in that area is indispensable. Formal acknowledgement of the knowledge and expertise of LSP teachers would be a crucial step in the formation of their professional identity. Professional identity can be defined as an individual's self-concept as a professional, shaped by their

[18] Micro-credentials could also help make their competencies more visible and recognised, potentially contributing toward credit in a degree-awarding program.

attributes, beliefs, values, motives, and experiences within a specific context. This identity is not static; it evolves through ongoing negotiation between personal experiences and external influences, reflecting a dynamic interplay between individual and collective identities within a professional community (McCall et al., 2021; Porter & Wilton, 2020). Research indicates that professional identity construction involves recognizing oneself as part of a profession and aligning personal values with professional roles, which is essential for job satisfaction and effective practice (Hen & Gilan-Shochat, 2022).

The fact that 19 respondents identified themselves as LSP teachers indicates a sense of professional cohesion and commitment to the profession. This is a positive foundation for further development; however, significant challenges remain, particularly due to the lack of formal qualifications for this role. Currently, their present job description categorises them as language teachers unless they hold a PhD. In the existing system, professional advancement is largely limited to obtaining a PhD and transitioning into academia. This raises the question of whether we can truly speak of a professional identity in a field that lacks official recognition and remains in the process of formation. Further investigation, particularly through qualitative methods like interviews, is needed to address this issue.

Challenges and Difficulties

In addressing the second research question, after analysing the responses to the Likert-scale statements on challenges and difficulties and the open-ended question inquiring about the same, four crucial areas emerged, which can be broken down to two main areas.

Problems Related to Specificity, Diversity, and Student Motivation

The challenges of LSP teaching, including specificity, diversity, and student-related issues, are interconnected. Diversity presents multifaceted challenges for LSP teachers, as some are required to teach across multiple disciplines, while others face difficulties arising from varying language proficiency levels and the diverse needs of their students. This complexity is echoed in Bocanegra-Valle (2024), who highlights the difficulties LSP teachers face in adapting their teaching to meet the varied needs of students.

The respondents frequently cited the need for extensive background knowledge and the necessity of acquiring the knowledge of the specific field, with some admitting that students occasionally know more about the content. Surprisingly, this does not seem to cause frustration, particularly among those whose first L2 is not English. This suggests that (1) they are finding ways to cope (e.g. with critical incidents); (2) their self-directed learning is effective; and (3) their role as a teacher has shifted towards that of a mentor or facilitator. Alternatively, if frustration does exist, it stems more from teachers' own knowledge gaps than from students' superior content knowledge (as the question suggested). This is an area that warrants further investigation.

Due to the specificity of the field, LSP teachers face constantly changing and multifaceted demands, leading to a lack of standardised and well-tested curricula and

teaching materials. As a result, the responsibility for developing these resources falls heavily on LSP teachers, which has been mentioned and highlighted on multiple occasions in the answers. Therefore, the competencies required for this task should be integrated into both pre-service education and ongoing professional development programmes. International and national collaborations and sharing best practices, resources, and actual teaching materials would be highly beneficial.

Self-teaching was frequently mentioned as an important informal way of professional development and also as a form of acquiring content knowledge. While this aspect of the job is unlikely to change, the proposed mentorship programme, combined with national and international collaborations, could potentially alleviate some of the associated challenges. Self-teaching and self-directed learning, closely related to intrinsic motivation, represent another avenue for future research.

A shared characteristic of specificity-related issues is the significant time investment required, which is not currently recognised by the HEIs under the existing legal framework. Such recognition is unlikely to occur until LSP teaching is officially acknowledged as distinct from general language teaching. LSP teachers at HEIs typically handle $20-22$ contact hours per week, comparable to secondary school language teachers teaching LGP. Introducing a multiplier on LSP contact hours, for instance, would ensure that sufficient time is allocated for preparation and curriculum design, especially, where the LSPs of several disciplines have to be taught. Adequate preparation time is essential for LSP teachers to stay updated not only in the foreign language they teach but also in the specialised, discipline-specific language and advancements within the field, including scientific and technological innovations. Additionally, the continual development of digital competencies and the 'intelligent' integration of artificial intelligence into training and teaching further amplify the need for extensive expertise. Due to the complexity and breadth of the tasks they are required to perform and the knowledge they must acquire, LSP teachers face an exceptionally demanding workload, with the process of acquiring and maintaining such multifaceted expertise being notably time-intensive.

Analysing the impact of students' low language proficiency revealed that Likert-scale responses alone were insufficient because opinions were divided on whether it hinders effective LSP learning. Free answers revealed that low language proficiency can indeed pose challenges, particularly when (1) complex, speciality-related content needs to be taught to students with limited language skills, or (2) conditions are not ideal, such as large class size, heterogenous group in terms of language proficiency or content expertise.

Several respondents mentioned that motivating and engaging students presents a significant challenge. According to Wette (2018), students' attention can be captured by teaching authentic and useful knowledge that prepares them for their profession. However, this brings us back to the need for LSP teachers to acquire extensive background knowledge, the conditions under which this can be achieved, and the importance of sharing best practices. To address these challenges effectively, there is a critical need for information exchange between content professionals (Woodrow, 2017) and LSP teachers and among LSP teachers themselves.

Lack of Institutional Support

The institution's approach to LSP teaching and learning is reflected in student behaviour, which, in turn, significantly influences their attitude and motivation. Encouragingly, 26 respondents perceive institutional support for effective LSP learning, indicating that some institutions address these needs adequately. Notably, at a HEI with the second-highest number of respondents, participants unanimously view the HEI's approach to learning LSPs as supportive, in contrast to more divided opinions from other HEIs. It is an intriguing phenomenon that, while the importance of LSPs is widely acknowledged, and there is a growing recognition of LSPs at HEIs, some LSP teachers still feel marginalised.

The frequent mention of insufficient institutional support underscores the importance of addressing this issue. It is imperative that institutions recognise the unique challenges faced by LSP teachers (Kic-Drgas & Jurkovič, 2024) and provide support through mechanisms such as reduced teaching loads and dedicated time for self-training and curriculum development. Facilitating collaboration between content teachers, subject specialists, and LSP educators, as well as improving access to training, is essential for improving LSP teaching quality.

Conclusion

This study provides valuable insights into the professional pathways, identity, and challenges of LSP teachers in Hungary, shedding light on critical issues for policy and practice. Our findings confirm several challenges highlighted in the international literature, while also offering unique perspectives specific to the Hungarian context. The findings underscore the need for targeted system-level and institutional measures, including reduced teaching loads, enhanced professional development opportunities, and recognition of LSP teaching as a distinct field requiring specialised expertise. These efforts not only enhance the overall quality of education but also increase job satisfaction and retention, advancing both the profession and the quality of instruction.

A limitation of this study is the seemingly low number of participants. However, given the estimated population of LSP teachers in Hungary (300 – 350), the participation rate is considered acceptable. The exploratory nature of the research has raised several questions that warrant further examination through qualitative methods, such as interviews. Despite these limitations, we are confident that this study serves as a step toward fostering dialogue among stakeholders.

Appendix

Table 5 Questionnaire for LSP teachers

Educational pathways*	Challenges*	*Competencies*	*Motivating factors*
What are the educational pathways and professional identity of LSP teachers?	What are the main challenges and difficulties of LSP teachers?	*Which competencies do LSP teachers consider essential?*	*What motivates LSP teachers?* *How do they motivate students?*
Demographic and professional characteristics	1) Gender 2) Age 3) Mother tongue 4) First L2	5) Field(s) of LSP 6) Language(s) taught 7) Affiliation 8) Teacher's degree	9) Specialty-related qualification 10) Academic degree 11) Years of experience
12) How did you become an LSP teacher and how did you start your career? Did you start teaching LSP by choice, by assignment or due to life circumstances? 13) What formal and not formal training(s) have you received, what has helped you to fulfil your current role as an LSP teacher? 27) Do you define yourself as an LSP teacher or do you give priority to something else (e.g. do you introduce yourself as a researcher, university lecturer, etc.). Do you give priority to your identity as an LSP teacher? If not, what?	17) LSP teachers face many challenges and difficulties. To what extent do you agree with the statements listed below? (5-point Likert scale) 11 statements 18) What do you feel is the biggest difficulty or challenge in your job as an LSP teacher?	*14) Which competencies (describing knowledge and experience) do you consider essential for effective LSP teaching? Please select FOUR elements from the list. If you are missing something from the list, indicate it in the"Other"box.* *15) Which competencies concerning attitude and personality do you consider essential for effective LSP teaching? Please select THREE of the following characteristics. If there is something you feel is missing, please indicate it in the"Other"box.*	*19) What do you think are the factors that contribute most to students' motivation to learn LSP? Choose/name the THREE most important ones. If you miss something from the list, please indicate it under"Other".* *20) What factors do you think are the biggest obstacles to student motivation? Select/name the THREE most important ones. If you miss something from the list, please indicate it under"Other"* *21) To what extent do you feel that your role/responsibility as an LSP teacher is to motivate students? (Answer options: Absolutely; Somewhat, Not at all)*

Table 5 (continued)

Educational pathways*	Challenges*	*Competencies*	*Motivating factors*
16) If you have a basis for comparison between teaching Languages for General Purposes and Languages for Specific Purposes: what do you see as the most important difference?			
24) Are there any circumstances that make your LSP subject different from other subjects in terms of motivation (either within the subject area, e.g. professional (content) subjects versus LSP subjects etc. or compared to other LSP subjects)			
32) Is there anything else you would like to add, that came to your mind when completing the questionnaire, that you would like to share or add to your answers?			
		28) *Do you apply the learning outcomes (i.e. student-centred) approach? (Answer options: Yes, I do; I have heard of it, but I don't use it; I don't use it; I don't know what it is*)	
		29) *To what extent do you feel your work is valued and appreciated by students? (3-point scale: Not at all; Somewhat; Fully*)	
		30) *How much do you feel that your work is appreciated and valued by your immediate work environment/colleagues? (3-point scale: Not at all; Somewhat; Fully*)	
		31) *How much do you feel that your work is valued and appreciated by your institution? (3-point scale: Not at all; Somewhat, Fully*)	
			22) *How can an LSP teacher motivate students? What has the most positive impact? Please select the FOUR most important ones. If you attach importance to other factors than those listed, please indicate them in the "Other" option*
			25) To what extent do you agree with the statement that a sufficiently motivated teacher is a prerequisite for motivated students? (5-point Likert scale)
			23) Do you have any further comments or observations on this question (Q22)?
			26) What motivates you personally as an LSP teacher?

*Columns indicated by asterisks present the research topics covered by this article.
The numbers indicate the order of the questions as they appear in the questionnaire.
Sections in italic font are not included in this study.

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CHAPTER SIX

Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers

(Study 5)

In this chapter, we include our article, published in a Q1-ranked journal. The study is presented in the dissertation exactly as published in the journal, with no content alterations, and is provided in a searchable format. The published study is open access and freely available. Throughout the Introduction and Discussion sections of the dissertation, this article is cited as (Stötzer et al., 2025a).

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Regular Article

Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers

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ABSTRACT

As English for Medical Purposes (EMP) becomes increasingly important in non-English-medium higher education, understanding what drives or hinders students' motivation is essential. This study explores the perceptions of Hungarian medical students and their EMP teachers regarding key motivational drivers and barriers. Using a dual-perspective design, we administered a purpose-built, forced-choice questionnaire to 283 students and 20 teachers across Hungary's four medical schools. The findings reveal strong alignment in identifying career goals and personal interest as key motivators, and demanding schedules, anxiety, and fear of failure as main demotivators. EMP teachers placed greater emphasis on their own instructional role, indicating a high degree of professional responsibility. The study highlights the value of outcome-based curriculum design, formative assessment, and context-rich, learner-centered instruction. It also supports pedagogical strategies such as integrating EMP with medical content, fostering psychologically safe classrooms, and empowering teachers through institutional support. These insights offer practical guidance for enhancing motivation-sensitive EMP instruction in similar higher education settings.

1. Introduction

English for Medical Purposes (EMP), a branch of English for Specific Purposes (ESP), is taught in higher education to prepare future medical professionals for the linguistic and communicative demands of medical practice. Beyond specialized vocabulary, EMP encompasses genre awareness, patient–provider communication, interprofessional collaboration, and engagement with research literature (Hyland, 2006; Wiertlewska, 2019). Amid the globalization of healthcare and the dominance of English as the *lingua franca* of scientific research, communication, and professional medical discourse, EMP is gaining a growing presence in the curricula of medical education programs in non-English-speaking countries (including Hungary), where English is not the medium of instruction (non-EMI) (Alqurashi, 2016; Alsuliman et al., 2019; Azuma et al., 2022; Stötzer & Farkas, 2024).

In most non-Anglophone European countries, including Hungary, medical education is traditionally delivered in the national language rather than in English (Hamad, 2023). Nevertheless, English remains indispensable for accessing global medical knowledge, participating in international research, and engaging in professional communication. Hungary illustrates this situation particularly well. The country has four medical schools, all operating under the nationally regulated Program and Outcome Requirements defined in Act CCIV of 2011 on National Higher Education. These requirements specify the competencies that graduates must acquire, including the ability to communicate medical knowledge in a foreign language, but they do not prescribe how the medical schools should achieve this aim. As a result, the implementation of EMP instruction is left to the discretion of each medical school, producing considerable variation. At the time of our research, two universities (Semmelweis University and the University of Pécs) required students to pass a medical language exam as part of their graduation requirements, while at the University of Debrecen and the University of Szeged EMP was offered as an elective and it was possible to complete a degree without taking any language courses at all. Current national legislation ensures that all university students have the right to study languages for specific purposes (amendment of Act CCIV of 2011 on National Higher Education). However, the law does not specify how this provision should be implemented, by whom, or under what institutional

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arrangements; instead, it leaves full autonomy to the medical schools. This combination of a top-down mandate and bottom-up discretion highlights the need for context-sensitive evidence: studies such as ours provide an empirical basis for curriculum designers and decision makers as they develop and refine EMP programs in ways that meaningfully fulfill the legal requirement.

While second language (L2) motivation has been extensively researched internationally, the motivational dynamics underlying EMP remain comparatively underexplored, particularly in non-EMI programs (Stötzer & Farkas, 2024). Motivation in second language acquisition, and more specifically in learning domain-specific varieties of English, is a multifaceted construct influenced by cognitive, affective, contextual, and interpersonal variables. In an earlier study (Stötzer, Farkas, & Bagyura, 2025), we examined the motivation underlying medical students' willingness to invest effort in learning EMP. Building on that foundation, the present study shifts the focus from the existence of motivation to its conditions: which factors support and which hinder medical students' engagement with EMP. Motivation does not develop in a vacuum; rather, it is shaped and moderated by the learning environment, including curriculum design, perceived relevance, teacher engagement, and classroom dynamics. Certain factors may reinforce learners' motivation to learn EMP, whereas others may undermine it. Importantly, we approached this question from a dual perspective, comparing the views of students with those of their EMP teachers. Since curriculum and task design and assessment are enacted by instructors, teachers co-construct the motivational climate; yet, until recently, little attention has been given to Languages for Specific Purposes (LSP) teachers, including EMP teachers, despite their critical role in shaping students' learning experiences in higher education (Bocanegra-Valle & Perea-Barberá, 2023). Studies that foreground EMP teachers' perceptions of students' motivation to learn EMP remain particularly scarce, especially in non-EMI contexts.

This study addresses these interrelated gaps by adopting a dual-lens approach that systematically and simultaneously investigates both medical students' and their EMP teachers' perspectives. By situating the inquiry in Hungary's non-EMI medical education system, the research not only fills a national void where empirical data on EMP motivation have been lacking, but also contributes to the broader international literature by highlighting the critical yet underexamined role of teachers in shaping motivational engagement in LSP contexts.

To deepen our understanding of this unique learning context, we developed a purpose-designed questionnaire to capture these dual perspectives and employed a novel comparative approach, combining a forced-choice top-three selection format with a side-by-side analysis of student and teacher response patterns, examining not only perceptions but also the aggregate selection frequencies, that is, which drivers and barriers were most frequently selected by respondents. Specifically, respondents selected their three most important motivational drivers and their three most important demotivators from lists we compiled on the basis of a preliminary synthesis of the literature; no ranking within the chosen three was required. Medical students completed the task with reference to their own learning, whereas EMP teachers completed the same task with reference to their students' motivation. This design yielded item-level selection frequencies (counts and percentages) that enabled transparent cross-group comparisons of salience. To our knowledge, no previous research has combined these elements within a single study, either in Hungary or internationally.

The significance of this research is threefold. Theoretically, it contributes to a more nuanced understanding of L2 motivation by addressing an underexplored domain within motivation studies, namely learning ESP as part of university-based professional training, in this case within the context of medical education. Practically, it generates empirically grounded insights that can inform curriculum development and classroom practice, offering guidance to EMP teachers and program designers seeking to create more motivating and effective learning environments. Beyond these dimensions, the study contributes conceptually, empirically, and methodologically to the evolving EMP literature, which remains narrow both globally and in Hungary. The limited scope of prior research in this domain not only underscores the novelty of our approach but also makes it difficult to directly compare our findings with earlier studies. In this sense, the research provides valuable, context-sensitive insights that enrich theoretical models of L2 motivation while also supporting the development of practical approaches to EMP instruction.

In sum, this study pursues three primary objectives, each aligned with a specific shortcoming identified in the literature: Objective 1 (addresses Gap 1): to identify the most salient drivers and barriers of medical students' motivation to learn English for Medical Purposes in non-EMI medical programs; Objective 2 (addresses Gap 2): to determine the degree of alignment and divergence between students' and EMP teachers' perceptions within the same institutional context; Objective 3 (addresses Gap 3): to derive empirically grounded, practice-oriented implications for EMP curriculum design in non-EMI settings.

2. Literature review

The motivation of medical students to learn English for Medical Purposes constitutes a multifaceted phenomenon shaped by a complex interplay of cognitive, affective, pedagogical, and contextual variables. Gaining a deeper understanding of the factors that enhance or hinder students' motivation to learn EMP is essential for designing educational programs that foster sustained language learning engagement and proficiency, particularly within the high-stakes domain of medical training. Yet in non-EMI medical programs, systematic evidence that pinpoints which drivers and barriers are most salient for students remains limited.

A primary motivational driver for medical students studying EMP is the instrumental recognition of English as the global *lingua franca* in the medical and scientific communities. English proficiency is necessary not only for accessing international medical literature and following global developments but also for participating in academic conferences, professional networking, and cross-border collaborations (Alqurashi, 2016; Alsuliman et al., 2019; Azuma et al., 2022). Students are often aware that English is integral to their future careers, especially those planning to work in international environments, undertaking postgraduate training abroad, or engaging in English-medium scientific publishing (Banafi, 2023). The COVID-19 pandemic further underscored this global dependency on English, particularly in fast-evolving medical contexts where up-to-date, English-language sources dominated professional discourse (Mayers et al., 2023).

In addition to instrumental orientations, contextual and pedagogical factors have been found to significantly influence motivational disposition in the ESP context. Research indicates that innovative teaching practices, such as near-peer instruction, problem-based learning, and collaborative tasks, can foster supportive and interactive learning environments (Hoshina et al., 2022, 2023). These methods enhance students' sense of agency, increase their willingness to communicate, and promote self-efficacy, an essential psychological component in sustaining motivation throughout the language learning process. The strategic use of digital tools and educational technologies can also contribute to more personalized and engaging learning experiences, particularly when designed to meet the specific needs of medical students (Chang & Hwang, 2023). Complementing this line of evidence, a blended teaching model grounded in in-depth learning has been shown to strengthen sustained engagement and outcomes in medical English courses through structured online–offline integration (Dai & Zhao, 2023). Contextually relevant content (e.g., clinical case studies or medical journal articles), when combined with learner-centered instruction, can facilitate higher levels of motivation by connecting language learning to students' emerging professional identities (Hyland, 2006). However, despite promising pedagogical designs, empirically grounded, context-sensitive guidance that translates motivational evidence into curriculum decisions for non-EMI medical programs remains scarce.

Nevertheless, numerous demotivating factors have also been identified. Among the most prominent is the perceived difficulty of mastering the linguistic and conceptual demands of medical English. The discipline-specific lexicon, in combination with complex syntactic structures and unfamiliar academic genres, can present a considerable cognitive burden for learners (Wang, 2023). This challenge is compounded by the overall intensity of medical education, which may leave students with limited time, energy, or cognitive resources to devote to language learning. Studies have consistently shown that medical students often report stress, fatigue, and even burnout, all of which can negatively impact their motivation to learn English (Fitriani et al., 2024; Mayers et al., 2023).

Another recurrent theme in the literature is the detrimental role of affective filters, such as foreign language anxiety and a lack of self-confidence. Language anxiety, defined as the apprehension experienced in real or anticipated communication using a second language, can significantly impair performance and reduce classroom participation (Akay, 2017; Nazarieh et al., 2023). This anxiety is particularly salient in medical settings, where language competence is closely tied to perceived academic and professional competence (Al-Qahtani, 2013; Kunanitthaworn et al., 2018). Moreover, insufficient institutional support, limited access to appropriate teaching materials, and a lack of pedagogical training among EMP teachers may further exacerbate students' sense of disorientation and disengagement (Lubis & Oktapian, 2023).

Sociocultural and identity-related factors may also contribute to demotivation. Students may perceive a misalignment between their personal or national linguistic identities and the dominant status of English in medical education, leading to feelings of linguistic insecurity or marginalization (Al-Mously et al., 2013). In such cases, motivation may be undermined not by the language itself but by the broader cultural and institutional dynamics surrounding its use.

Complementing these strands, a more recent line of theorizing in educational psychology introduces the construct of emotioncy, positing that the degree and variety of sensory experience with content shape emotions, cognition, and subsequent action. Though not limited to language learning, this framework has been applied in L2 studies to distinguish active from passive motivational states through a dual-continuum model (Miri & Pishghadam, 2021; Pishghadam et al., 2013, 2019). In this account, learners move along an emotioncy matrix from null/auditory/visual/kinesthetic access to inner/arch levels, later extended to mastery; higher emotioncy is expected to foster concurrent engagement (mental focus) and involvement (doing), i.e., active motivation, whereas low-emotioncy conditions are associated with passive motivation or forms of demotivation (Miri & Pishghadam, 2021; Pishghadam et al., 2013, 2019). Empirical studies link higher emotioncy to stronger willingness to communicate and better outcomes (Makiabadi et al., 2019; Pishghadam, 2016). This framework highlights the teacher's role as an "envolver" who can elevate learners' emotioncy through experience-rich tasks (simulations, role-plays, authentic artifacts), thereby shifting states from passive toward active—an especially pertinent consideration in non-EMI EMP courses (Miri & Pishghadam, 2021; Pishghadam et al., 2019).

While the present analysis centers on EMP teachers' perceptions of students' motivation, it is equally important to note that EMP teachers themselves constitute a distinctive and under-researched professional group. Their roles, preparation, workloads, and institutional positioning are increasingly the focus of scholarly attention (Bocanegra-Valle & Perea-Barberá, 2023). LSP (including EMP) teachers have a dual role at the intersection of language teaching and professional content delivery, often without formal training in the latter, posing both unique opportunities and challenges for motivating learners (Chateaureynaud & John, 2022). Typically, self-taught in the specialized content areas they teach, LSP teachers frequently rely on nonformal and informal learning, such as self-directed study and collaboration with colleagues, to acquire discipline-specific knowledge. As highlighted in the Hungarian context, they face considerable challenges, including the lack of formal training opportunities, high preparation demands, the need to continuously update teaching materials, and limited institutional recognition and support, all of which intensify their workload and complicate their pedagogical tasks (Stötzer, Bagyura, & Farkas, 2025).

In summary, the literature reveals three specific gaps: G1: limited context-sensitive evidence on the most salient drivers and barriers of EMP motivation in non-EMI medical programs; G2: a lack of dual-perspective designs that align students' and EMP teachers' perceptions within the same institutional context; and G3: a shortage of empirically grounded, practice-oriented guidance for EMP curriculum development tailored to non-EMI settings.

3. Methods

3.1. Setting and participants

3.1.1. Medical students

The student part of the study was conducted at Hungary's four medical schools, all offering undivided, twelve-semester medical programs in Hungarian as the medium of instruction (HMI program) for state-funded students. All undergraduate medical students (years 1–6) enrolled in Hungary's HMI medical programs, approximately 5800 students (60 % female, 40 % male, based on Hungarian Statistical Office data in 2024) were invited to participate (voluntary convenience sampling). At the time of the study, only Semmelweis University and the University of Pécs had mandatory EMP exit requirements, whereas EMP courses were elective at the University of Debrecen and University of Szeged. Notably, no standardized EMP curriculum existed across the institutions, nor has one been introduced since.

Out of approximately 5800 eligible students, 486 responded to the survey (8.4 %); of which, 283 had taken at least one EMP course. Only these responses were included in the present analysis, yielding an effective response rate of 4.9 %. The inclusion criterion required participants to have attended at least one EMP course offered by their respective universities. Table 1 presents the demographic details of the sample.

3.1.2. EMP teachers

With the help of the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes and through requests sent to Hungarian universities, we surveyed Languages for Specific Purposes (LSP) teachers via a questionnaire about the characteristics of their

Table 1
Self-reported demographics and English proficiency levels of respondent Hungarian medical students (n = 283).

Medical students		n	%
Gender	Male	89	31.4 %
	Female	194	68.6 %
Affiliation	Semmelweis University	25	8.8 %
	University of Pécs	61	21.6 %
	University of Szeged	65	23.0 %
	University of Debrecen	132	46.6 %
Year	1st	129	45.6 %
	2nd	56	19.8 %
	3rd	38	13.4 %
	4th	24	8.5 %
	5th	19	6.7 %
	6th	17	6.0 %
English proficiency level according to the Common European Framework of Reference	No English language exam	16	5.7 %
	A2	2	0.7 %
	B2	137	48.4 %
	C1	128	45.2 %

work, as part of which we posed the questions examined in the present study (voluntary convenience sampling). Among the 44 responding teachers, we selected the EMP teachers (20) (purposive sampling) (Table 2). The number of EMP teachers in Hungary can only be estimated, as no official data are available; however, on the basis of publicly accessible information on the websites of the four Hungarian medical schools, the number of EMP teachers is estimated to range between 50 and 60. Of this estimated population, 20 participated, corresponding to a response rate of 33–40 %. The responding EMP teachers are native Hungarian speakers who teach English for Medical and Health Sciences Purposes. Their average time spent in the profession is 20.0 years. In addition to their English teacher's degree, three of them hold a degree in health sciences/biology, seven teachers have a PhD, five of them are PhD candidates, and eight teachers do not hold a scientific degree.

3.2. Data collection

We conducted the study between February and April 2024, during the spring semester of the 2023/2024 academic year. The EMP courses were offered and delivered either as mandatory subjects or as elective courses, depending on the curriculum of the respective medical school. Data collection took place during regular class periods, outside the examination period, ensuring that participation was not influenced by end-of-term assessment pressures. We obtained ethical approval for the research and requested permission from the deans of the four medical faculties to collect data from the students. With the assistance of the respective Registrar's Offices, the questionnaire link was distributed to all medical students via the official institutional mailing lists. All Hungarian medical students from Year 1 to Year 6 (N = 5800) were eligible to participate, provided they had previously taken, or were currently enrolled in, at least one EMP course during their studies. EMP teachers were reached through multiple channels. First, with the support of the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes, the questionnaire link was forwarded to the association's members. In addition, based on publicly available information, we contacted the language teaching departments of Hungarian universities where LSP instruction was likely to take place. Teachers were asked to complete the questionnaire only if they were engaged in teaching Languages for Specific Purposes (LSP) at university level. This broader outreach was necessary because the teacher-focused part of the research project included all LSP teachers; however, for the purposes of the present study, only responses from EMP teachers were included in the analysis.

This study did not involve any clinical intervention or biomedical procedures. It is a social science research project, and as such, it was conducted in accordance with the institutional ethical regulations of the University of Szeged (Hungary). This study was approved by the Ethics Committee of the Doctoral School of Education of the University of Szeged (Reference number: 1/2023, dated February 6th, 2023. Both teachers and students were informed about the purpose of completing the questionnaire, and no sensitive data were collected. Participation was voluntary and anonymous, and the participants provided informed consent for research purposes. The written informed consent was obtained electronically: the first page of the questionnaire outlined the purpose of the study, the voluntary nature of participation, and data protection measures. Participants could proceed to the survey only after actively indicating their consent.

Table 2
Self-reported demographics of respondent EMP teachers (n = 20).

EMP teachers		n	%
Gender	Male	2	10.0 %
	Female	18	90.0 %
Age	21–30	0	0.0 %
	31–40	2	10.0 %
	41–50	5	25.0 %
	51–60	10	50.0 %
	61–70	3	15.0 %
Title	PhD	7	35.0 %
	PhD candidate	5	25.0 %
	No PhD	8	40.0 %
Discipline-related degree	Yes	3	15.0 %
	No	17	85.0 %

3.3. Instrument

For both teachers and students, we employed an online, self-administered questionnaire, with all items presented in Hungarian. Both questionnaires were part of a larger research framework (Stötzer, Farkas, & Bagyura, 2025) and included several additional questions beyond those analyzed in this study. The survey items used in this study were specifically developed for the purposes of this research, drawing on the literature as well as insights from our experience. To ensure clarity and transparency, we have added Table A.1 in the Appendix, which presents the exact Hungarian wording of the items used in the present analysis together with their English translations. The development of the item lists was informed by previous research (Mezei & Fejes, 2020), which we adapted to the higher education EMP context. To ensure content validity, the instrument was reviewed by domain experts. Table 3 presents the survey items that formed the basis of the comparative analysis between students and teachers for this study.

For the lists used as the basis for comparing student and teacher perceptions of the motivational drivers and barriers influencing students' EMP learning, both students and teachers were asked to select three items (a top-three selection, forced choice approach). The selections did not require prioritization. If respondents felt that an important factor was missing from the list, they could choose the 'Other' option after making two selections and specify the missing motivational driver or barrier. The foundation of these lists was drawn from the work of Mezei and Fejes (2020), who conducted semi-structured interviews with 12 teachers (primary education, upper grades) to explore their perspectives on the practical application of the TARGETS dimensions (Task, Authority, Recognition, Grouping, Evaluation, Time, and Social Relationship) in classroom settings. Their interview protocol consisted of three sections: (1) questions about qualifications and prior experiences, (2) general views on learning motivation, and (3) the practical relevance of the TARGETS dimensions. The data from these interviews were analyzed and the authors identified factors that teachers perceive as motivators and demotivators in their professional practice. These lists served as our basis for the compilation of the lists presented in Table 3. For the purposes of our study, we refined these lists to better align with the higher education context. Specifically, we excluded items from among the drivers deemed less relevant to learning EMP within university settings, such as role modeling and competition, while incorporating three aspects related to the teacher: teacher's personality, teacher's proficiency in EMP, and teacher's discipline-related content knowledge. Similarly, for the list of barriers, we removed factors such as family background, tensions among teachers, traditional teaching methods, teacher's personality, and role modeling, as these were less pertinent in our context. However, on the basis of the literature and personal experience, we added language learners' shyness and anxiety and the teacher–student relationship as additional demotivating factors.

3.4. Data analysis

For the motivator and demotivator lists, the responses were analyzed using a top-three selection (forced-choice) approach, where the participants selected three options (the three most important ones), and the final ranking was determined by the frequency of selections for medical students and teachers, respectively. Technically, there were no missing responses; however, in cases where they occurred (specifically for demotivators), we indicated that the respondent did not provide a third

Table 3
Survey items on perceived drivers and barriers to medical students' motivation to learn EMP, included in both student and teacher questionnaires (top-three selection).

Which factors do you believe most facilitate medical students' motivation to learn EMP? Please select *three*.
- Sense of achievement
- Personal interest
- Teacher–student relationship
- Community (expectations of peers and or institution)
- Career goals
- EMP teacher's personality
- Teacher's EMP knowledge
- Innovative methods
- Family background
- EMP teacher's discipline-related content knowledge
- Other (please specify)

Which factors do you believe most hinder medical students' motivation to learn EMP? Please select *three*.
- Feeling of failure
- Language learning shyness/anxiety
- Teacher–student relationship
- Lack of engagement from fellow students
- Large group size
- Demanding schedule
- Lack of technical equipment
- Inappropriate teaching materials or textbooks
- Excessive teacher strictness
- Constant teacher dissatisfaction
- Lack of feedback
- Other (please specify)

option. In the rare cases where participants provided an open-ended response under the "Other" option, these were examined separately. All open-ended responses were short, typically consisting of only a few words. These open-ended responses were independently classified by the first and second authors, after which the categorizations were compared and discussed until full agreement was reached. Given the small number of such cases and the brevity of the responses, no qualitative analysis software was used; all classifications were carried out manually in Microsoft Excel. Responses that could be clearly assigned to an existing category were integrated accordingly (see Note in Table 4), while those that could not be meaningfully categorized are presented verbatim in the Results section (see Table 6).

As a first step, drivers and barriers were analyzed independently on the basis of the frequency of individual item selections (Tables 4 and 6). In the second step, these items were grouped into three categories each. To examine the three-dimensional structure of factors influencing students' motivation to learn EMP positively and negatively, we aggregated item-level data into dimension-level variables (Tables 5 and 7). Frequencies were then calculated as the proportion of actual selections relative to the total number of theoretically possible selections within each dimension (considering whether participants could select two or more items per question). This approach ensured a more accurate comparison across dimensions by controlling for differences in the number of opportunities to select items within each group.

Table 4
Distribution of top-three drivers of medical students' motivation to learn English for Medical Purposes as selected by Hungarian medical students and EMP teachers (top-three selection, forced choice).

Ranking by medical students (n = 283) *Frequency of selections*			Ranking by EMP teachers (n = 20) *Frequency of selections*		
Career goals	204	(72.1 %)	Career goals	13	(65 %)
Personal interest	194	(68.6 %)	Personal interest	10	(50 %)
Sense of achievement	150	(53.0 %)	EMP teacher's personality	8	(40 %)
Expectations from community (from peers and/or institution)[a]	92	(32.5 %)	Innovative methods	7	(35 %)
EMP teacher's personality	54	(19.1 %)	Sense of achievement	5	(25 %)
Teacher–student relationship	47	(16.6 %)	Teacher–student relationship	5	(25 %)
Teacher's EMP knowledge	39	(13.8 %)	Teacher's EMP knowledge	4	(20 %)
Innovative methods	36	(12.7 %)	Expectations from community (from peers and/or institution)	4	(20 %)
EMP teacher's discipline-related content knowledge	17	(6.0 %)	Family background	2	(10 %)
Family background	14	(4.9 %)	EMP teacher's discipline-related content knowledge	2	(10 %)
Invalid responses	2	(0.7 %)	Invalid responses	0	(0 %)
Total (283x3)	849		Total (20x3)	60	

[a] We included the possibility of earning easy credits and the mandatory nature of the course (which was specifically mentioned by the students).

4. Results

Tables 4–7 present the item-level and category-based rankings of motivational and demotivational factors, as selected by medical students and EMP teachers from the predefined lists. Notably, only a small number of respondents used the 'Other' category, indicating that most participants were able to classify their responses using the provided list items. This suggests that the selected items on the lists adequately reflected the core motivational and demotivational experiences of EMP learners and EMP teachers.

4.1. Drivers of motivation

Table 4 shows how frequently students and teachers selected each of the motivational drivers from the predefined list, based on their top-three choices. If respondents did not find a suitable option among the predefined items, they could elaborate their views under the "Other" category. Two such comments were received: one referred to the possibility of earning easy credits, and the other to the mandatory nature of the course. Both were classified under "Community expectations (from peers and/or institution)".

To facilitate the interpretation of the responses and better understand the underlying motivational constructs, we organized the drivers into three overarching categories inspired by Dörnyei's (2005, 2009) L2

Table 5
Drivers of Hungarian medical students' motivation to learn English for Medical Purposes categorized according to Dörnyei's L2 Motivational Self System.

		All selections		Proportion of selections relative to the total number of possible selections	
		Students	EMP teachers	Students	EMP teachers
Ideal L2 Self: Self-related aspects	Career goals Personal interest	397	23	70.1 %	57.5 %
L2 Learning Experience: Teacher-related aspects	Sense of achievement EMP teacher's personality Teacher–student relationship Teacher's EMP knowledge EMP teacher's discipline-related content knowledge Innovative methods	343	31	40.4 %	51.7 %
Ought-to L2 Self: Social experience	Expectations from community (from peers and/or institution) Family background	106	6	18.7 %	15.0 %

Motivational Self System: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience (Table 5). This categorization allowed us to map the participants' selections onto broader motivational dimensions while also highlighting which aspects are most directly influenced by the EMP teacher. Grouping the drivers in this way helped clarify the nature of the motivational forces at play, whether internally driven, socially influenced, or shaped by the immediate learning environment.

4.2. Barriers to motivation

Table 6 presents the ranking of factors hindering motivation as ordered by medical students and EMP teachers. For barriers, a larger number of open-ended responses were provided under the "Other" option. Where possible, these comments were integrated into the existing categories; those that could not be classified have been presented verbatim in the table.

To better understand the nature and potential sources of factors that work against motivation in learning EMP, we categorized them according to whether they fall within or beyond the teacher's sphere of influence (Table 7). This classification serves both analytical and pedagogical purposes, as it distinguishes systemic or infrastructural issues, such as scheduling constraints or inadequate facilities and classroom-level factors that may be addressed or mitigated through instructional choices. Particular attention was given to demotivators that arise within the learning environment and are potentially shaped by teacher behavior, teaching style, or interpersonal dynamics. In addition, we identified a set of affective and psychological factors, such as anxiety or fear of failure that, while not entirely controllable by the teacher, may be significantly influenced by classroom practices and teacher support. This categorization supports a more nuanced interpretation of the findings and underscores areas where pedagogical intervention may have the greatest impact.

5. Discussion

This study pursued three interrelated objectives. The first two focused on the empirical examination of motivational dynamics: Objective 1 aimed to identify the most salient drivers and barriers of Hungarian medical students' motivation to learn English for Medical Purposes in non-EMI programs, while Objective 2 investigated the extent of alignment and divergence between students' and EMP teachers' perceptions within the same institutional context. As these two objectives are closely connected, their findings are discussed together in Sections 5.1 and 5.2 below. Objective 3, in turn, sought to derive practice-oriented implications for EMP curriculum design, and this is elaborated in Section 5.3.

5.1. Drivers – factors facilitating motivation

The findings presented in Tables 4 and 5 offer a comprehensive understanding of the factors perceived by Hungarian medical students and EMP teachers as drivers of motivation in the context of learning EMP. Drawing on both item-level data and aggregated categories based on Dörnyei's L2 Motivational Self System (L2MSS) (2005, 2009), the analysis reveals a notable degree of convergence between the two groups in terms of ranking the main drivers, alongside meaningful divergences in emphasis that carry pedagogical significance.

5.1.1. Ideal L2 self: internalized vision and future orientation

The category we coined "Ideal L2 Self" based on Dörnyei's L2MSS (2005, 2009) emerged as the most dominant motivational category for both students and teachers participating in this study, accounting for 70.1 % and 57.5 % of their total selections respectively. Within this domain, career goals and personal interest were consistently the top-ranked factors across both groups. This convergence suggests a shared understanding of the centrality of future-oriented, goal-driven motivation in EMP learning. Students appear to envision themselves as future healthcare professionals operating in international contexts where English proficiency is indispensable, whereas teachers likewise recognize this internalized vision as a primary source of student engagement. This result is also in line with our earlier finding that the ideal L2 self is the most significant predictor of the effort students invest in EMP learning (Stötzer, Farkas, & Bagyura, 2025).

In addition to career goals, personal interest was the second most frequently mentioned driver, reflecting the participating Hungarian medical students' genuine engagement with the subject matter and their eagerness to acquire knowledge. This suggests the presence of strong intrinsic motivation, driven by an internally generated desire to learn. The strong presence of career goals and personal interest as key drivers of motivation in learning EMP carries significant theoretical and practical implications. From a theoretical perspective, these factors align with well-established motivation frameworks. Self-Determination Theory (Deci & Ryan, 1985; Ryan & Deci, 2000) suggests that intrinsic motivation, reflected in students' personal interest, linked to career aspirations, fosters greater engagement, persistence, and deeper learning. Dörnyei's L2 Motivational Self System (2005, 2009) emphasizes the role of the Ideal L2 Self, which is closely associated with career-driven motivation and professional identity development. Additionally, these motivational drivers contribute to sustainable and self-regulated learning. Students who are personally interested in EMP are more likely to actively seek out learning opportunities, engage in self-directed study, and persist in the face of challenges. At the same time, career-oriented motivation provides a long-term commitment, as students perceive EMP not merely as an academic requirement but also as an essential tool for their future professional success. The fact that both students and teachers in this study prioritized this category affirms the theoretical claim that languages for specific purposes, such as EMP, are driven primarily by instrumental and intrinsically meaningful goals, as opposed to purely extrinsic pressures.

Table 6
Distribution of top-three barriers of medical students' motivation to learn English for Medical Purposes as selected by Hungarian medical students and EMP teachers (top-three selection, forced choice).

Ranking by medical students (n = 283) *Frequency of selections*			Ranking by EMP teachers (n = 20) *Frequency of selections*		
Demanding schedule (including lack of time)	203	(71.7 %)	Demanding schedule	16	(80 %)
Language learning shyness/anxiety	127	(44.9 %)	Language learning shyness/anxiety	14	(70 %)
Feeling of failure	124	(43.8 %)	Large group size	8	(40 %)
Large group size	78	(27.6 %)	Feeling of failure	7	(35 %)
Lack of engagement from fellow students	71	(25.1 %)	Lack of feedback	5	(25 %)
Inappropriate teaching materials or textbooks	59	(20.8 %)	Constant teacher dissatisfaction	3	(15 %)
Excessive teacher strictness	40	(14.1 %)	Lack of technical equipment	2	(10 %)
Lack of feedback	39	(13.8 %)	Lack of engagement from fellow students	1	(5 %)
Constant teacher dissatisfaction	27	(9.5 %)	Inappropriate teaching materials or textbooks	1	(5 %)
Lack of technical equipment	27	(9.5 %)	Teacher–student relationship	1	(5 %)
Teacher–student relationship	22	(7.8 %)	Excessive teacher strictness	1	(5 %)
Added by the respondents as free answers					
No third option was selected	13	(4.6 %)	Inadequate teacher preparation; and teaching that fails to challenge or engage students (student is bored)	1	(5 %)
EMP is not a priority	4	(1.4 %)	Total (20x3)	60	
Time of the class is not ideal (too late)	3	(1.1 %)			
Not interested	3	(1.1 %)			
Respondents report no demotivating factors	3	(1.1 %)			
Various OTHER responses • "Difficulty with pronunciation" • "C1 level feels unattainable, while B2 seems too easy" • "I also want to learn German for specific purposes" • "Deficiencies in the teacher's English proficiency" • "Boring lessons focused on reading aloud and translation, lack of interaction and teamwork" • "Teacher-centered instruction"	6	(2.1 %)			
Total (283x3)	849				

5.1.2. L2 learning experience: classroom-level influences

The second most prominent motivational category identified by both groups in this study was the L2 Learning Experience, with 40.4 % of student selections and 51.7 % of teacher selections falling into this category. This domain encompasses factors related to the classroom environment, teaching methods, and interpersonal interactions. A closer inspection of item-level responses reveals subtle but meaningful differences in emphasis between the two cohorts.

Both groups identified sense of achievement as one of the most important motivating factors. Among the students, it ranked third in frequency, while EMP teachers placed greater emphasis on the teacher's personality and the use of innovative teaching methods. This divergence likely reflects the different roles and perspectives that students and teachers assume in the learning process. For students, mastering complex terminology and applying language skills in professional contexts can be powerful intrinsic motivators, consistent with Bandura's (1997) self-efficacy theory, which posits that successful performance enhances confidence and encourages further effort, as well as Locke and Latham's (1990) goal-setting theory, which links the attainment of meaningful goals to sustained motivation.

EMP teachers, by contrast, placed greater emphasis on the teacher's personality and innovative teaching methods, ranking these higher than the sense of achievement. A teacher's enthusiasm, approachability, and ability to create a supportive learning environment can significantly impact students' attitudes toward learning. The contrast between student and teacher perceptions suggests that while students focus on intrinsic reinforcement through personal success, teachers acknowledge the external, instructional factors that facilitate motivation and engagement. It should not be overlooked that the teacher plays a significant role in shaping students' sense of achievement. This connection is justified by the fact that teachers influence both the learning process and the assessment of success. Through effective feedback, encouragement, and appropriate challenges, they help students recognize their progress and build confidence in their abilities. Additionally, well-structured tasks and engaging teaching methods can create opportunities for attainable yet meaningful achievements, reinforcing students' motivation. This aligns with self-efficacy theory (Bandura, 1997), which emphasizes the role of external reinforcement in developing learners' belief in their capabilities. This asymmetry highlights an important pedagogical insight: EMP teachers in our sample assume responsibility for fostering motivation through their professional conduct, instructional strategies, and relational efforts. Their prioritization of classroom-based and interpersonal variables underscores an awareness of their role in shaping the learning experience beyond content delivery. This sense of professional responsibility is particularly encouraging in light of the alignment with student perspectives, as it reflects a learner-centered orientation grounded in motivational awareness. Moreover, this convergence reinforces the claim that the classroom remains a crucial arena for motivational support. As Vygotskian sociocultural theory (Vygotsky, 1978) suggests, the quality of social interaction and scaffolding within the classroom significantly influences learning processes. The participating EMP teachers' emphasis on creating a positive learning environment through enthusiasm, supportive rapport, and engaging methods may thus be seen not only as an instructional preference but also as a deliberate response to the motivational needs of learners. This is consistent with Deci and Ryan's (1985) Self-Determination Theory (Ryan and Deci, 2000), which posits that the fulfilment of three basic psychological needs (autonomy, competence, and relatedness) fosters intrinsic motivation.

5.1.3. Ought-to L2 self: peripheral but contextually relevant

Another notable discrepancy is that external expectations from the community (including both peer influence and institutional expectations, whether implicitly or explicitly expressed) were selected more frequently by students, ranking higher on their list than any driver related to the teachers as factors enhancing motivation. In contrast, in the EMP teachers' ranking, the teacher–student relationship and the teacher's proficiency in EMP were both considered "stronger" drivers than expectations coming from the community. This divergence may stem from the different ways in which students and teachers perceive the primary sources of motivation. For students, social and institutional expectations may exert a significant influence, as they navigate a structured academic environment where peer norms, institutional requirements, and professional expectations shape their engagement with

Table 7
Barriers of Hungarian medical students' motivation to learn English for Medical Purposes categorized by teacher agency.

		All selections		Proportion of selections relative to the total number of possible selections	
		Students	EMP teachers	Students	EMP teachers
Learning environment (beyond teacher control)	Demanding schedule *(including any mention of lack of time*	394	27	46.4 %	45.0 %
	EMP is not a priority *(added by students)*				
	Lack of engagement from fellow students				
	Large group size				
	Lack of technical equipmen				
Learning environment (within teacher control)	Inappropriate teaching materials or textbooks[a]	185	12	21.8 %	20.0 %
	Constant teacher dissatisfaction				
	Teacher–student relationshi				
	Excessive teacher strictness				
	Lack of feedback				
Affective and psychological factors	Feeling of failure	252	21	44.5 %	52.5 %
	Language learning shyness/anxiety				

[a] The selection of teaching materials, including textbooks, is not centrally regulated in this context; it falls under the responsibility and professional discretion of the individual teacher.

EMP. This aligns with the concept of the Ought-to L2 Self (Dörnyei, 2005, 2009), which reflects the motivational impact of external pressures and obligations. Students may feel compelled to meet these expectations to maintain academic standing, align with professional norms, or conform to peer-driven performance standards. Conversely, teachers may prioritize factors that are more immediately within their pedagogical control, such as building a strong rapport with students and demonstrating expertise in medical English. A positive teacher–student relationship fosters a supportive learning environment, reducing anxiety and increasing engagement. Moreover, a teacher's proficiency in EMP enhances credibility and provides students with a reliable model for language use in professional contexts.

In contrast to the Ideal L2 Self and L2 Learning Experience, the Ought-to L2 Self received markedly lower levels of attention. Students selected items in this category (namely, expectations from peers/institution and family background) in only 18.7 % of their responses, whereas teachers did so in just 15.0 %. These findings suggest that external pressures and social obligations play a relatively minor role in shaping the motivation to learn EMP, at least in the Hungarian context. In students' responses, the teacher's role in enhancing motivation ranked higher than the influence of family background, which in this context refers to the supportive attitudes of parents and other family members. This suggests that, at least in the Hungarian context, family influence on EMP learning motivation is not as pronounced as in other cultural settings, such as those observed in Japanese studies (Mayers et al., 2023).

In countries, such as Japan, family expectations and parental encouragement often play crucial roles in shaping students' academic motivation, particularly in language learning. The strong emphasis on educational success and societal expectations in East Asian cultures often translates into parental pressure and structured support for language acquisition, as highlighted in studies on interdependent self-construal and collectivist learning cultures (Markus & Kitayama, 1991; Ryan & Deci, 2000). In contrast, in Hungary, parental influence on EMP motivation appears to be less dominant, possibly due to a combination of educational norms, cultural attitudes toward language learning, and the specific nature of EMP as a professional tool rather than a general academic requirement. Furthermore, this can also be attributed to the context of higher education, where students are generally expected to assume greater autonomy and responsibility for their own learning than primary or secondary school students. From a broader perspective, these findings resonate with cultural models that differentiate between collectivist and individualist societies (Hofstede, 2001; Markus & Kitayama, 1991). While East Asian contexts, such as Japan, are typically characterized by interdependent self-construals and strong family involvement in educational trajectories, Hungary aligns more closely with individualist cultural patterns, where autonomy, self-responsibility, and personal initiative are emphasized. Within such a model, EMP learning is primarily framed as an individual academic and professional pursuit rather than a family-driven obligation, which may explain the relatively minor role of parental influence in our data. These findings are further supported by recent cross-cultural research on language learning strategies. Habók et al. (2021), comparing Hungarian, Chinese, and Mongolian university students, found that Hungarian learners showed a stronger preference for cognitive and metacognitive strategies associated with self-regulation and autonomy, whereas Chinese and Mongolian students tended to rely more on memory and repetition strategies, reflecting more collectivist and teacher-centered educational traditions. Such results reinforce the argument that Hungarian students' EMP motivation is embedded in an individualist cultural model that values learner independence and self-responsibility, in contrast to East Asian contexts where family expectations and social obligations play a stronger motivational role.

The role of subject-specific knowledge as a motivation-enhancing factor (a persistent dilemma for EMP teachers) was among the less frequently mentioned elements in both the student and teacher rankings. This finding highlights the shifting nature of the EMP teacher's role: rather than being valued primarily for content expertise, teachers are increasingly recognized for their capacity to act as "envolvers" (Pishghadam et al., 2019) who create high-emotioncy learning experiences, foster engagement, and bridge disciplinary knowledge through motivating, professionally relevant tasks (see also 5.3.3 on the changing roles of the EMP teachers).

5.2. *Barriers – factors hindering motivation*

The analysis of factors that hinder motivation, as reflected in Tables 6 and 7, reveals a nuanced picture of the obstacles to medical students' motivation in learning EMP. On the basis of item-level and category-level data, the results point to a strong convergence between students and EMP teachers in their perceptions of the most salient barriers, while also revealing meaningful divergences in the interpretation of instructional and contextual influences.

5.2.1. *Rationale for the categorization of demotivating factors*

To enable a pedagogically meaningful interpretation of the findings, the categorization of the responses in Table 7 was structured along two main dimensions: the locus of control and the nature of the barrier. The first two major categories both pertain to the learning environment, but they were deliberately separated on the basis of whether the factor falls within or beyond the teacher's direct influence. This distinction is critical for understanding where and how pedagogical interventions can be

implemented to reduce demotivation.

The category Learning Environment (infrastructure; beyond teacher control) comprises structural and institutional factors such as a demanding schedule, large group size, lack of peer engagement, and insufficient technical equipment. These external constraints are shaped by the broader institutional context of medical education, over which individual EMP teachers have no or very limited control. Their inclusion as a separate group recognizes the systemic pressures faced by students and the limits of teacher agency. Moreover, these findings may also offer valuable insights for institutional stakeholders, including administrators and program coordinators, highlighting areas where structural changes could help create more supportive learning environments.

Conversely, the category Learning Environment (teacher-controlled aspects) groups together factors such as inappropriate teaching materials, constant teacher dissatisfaction, lack of feedback, and teacher−-student relationship. These are considered areas where teachers' decisions and attitudes can have a direct impact on students' motivational states.

The third category, Affective and psychological factors, captures internal learner states such as language learning shyness/anxiety and feeling of failure. While not directly teacher-controlled, these emotional and cognitive conditions are often shaped by the classroom climate and instructional strategies. The teacher's attitude, the way course material is processed, the learning and teaching strategies applied, as well as the methods of evaluation and feedback all significantly influence these affective states. Importantly, teachers can help alleviate language learning anxiety and fear of failure by strengthening mastery goals and emphasizing individual effort, current progress, and improvement when evaluating student performance. In this sense, setting short-term, concrete goals can play a particularly important role in enhancing student motivation. Their inclusion as a distinct category acknowledges the growing body of research on the psychological dimensions of second language learning, particularly the role of affect in sustaining or undermining motivation (Bandura, 1997; Krashen, 1982; Zhang, 2019).

5.2.2. Shared concerns: time constraints and affective barriers

The top two barriers identified by both groups – demanding schedule (including lack of time) and language learning shyness/anxiety – clearly reflect shared concerns about the external and psychological pressures experienced in EMP learning. The alignment in these rankings indicates a broad consensus on the key obstacles: the time-intensive nature of medical education and the emotional strain associated with language use in high-stakes, professionally oriented settings.

From a theoretical perspective, the prominence of these factors resonates with well-established constructs in motivational psychology. Time-related pressure can be interpreted through the lens of task overload and cognitive resource depletion, which are known to undermine goal-directed behavior (Sweller, 1988). Simultaneously, the impact of language anxiety and fear of failure echoes findings from the affective filter hypothesis (Krashen, 1982), where negative emotional states inhibit language acquisition and classroom engagement. In the context of EMP, these psychological barriers may be further intensified by the specialized nature of the content, professional identity concerns, and the fear of appearing incompetent in a future-oriented medical role.

5.2.3. Diverging views on mid-tier demotivators

While the top-ranked demotivators showed substantial agreement, minor differences emerged in the middle tier. Students ranked the feeling of failure higher than large group size, whereas teachers reversed this order. A perceived lack of progress or repeated experiences of failure can lead to frustration and decreased motivation, particularly in a subject, such as EMP, where students may struggle with specialized vocabulary and professional communication demands. Additionally, large class sizes can exacerbate these issues by limiting opportunities for individual feedback, interaction, and personalized instruction, making it more difficult for students to build confidence and for teachers to provide targeted support.

The ranking of barriers to motivation in the middle tier also reveals some notable discrepancies between students' and teachers' perceptions. One of the most striking differences is that lack of engagement from fellow students was selected far more frequently by students, positioning it higher on their list than on that of teachers. This suggests that students are particularly sensitive to classroom dynamics and may feel that unmotivated or passive peers negatively impact their own learning experience. A disengaged learning environment can reduce opportunities for interaction, decrease overall classroom energy, and diminish the effectiveness of communicative tasks, which are essential in EMP. Teachers, on the other hand, seem to attribute less weight to this factor, potentially because they focus more on instructional challenges and structural barriers rather than peer-driven influences. Nonetheless, this finding is particularly important for teachers, as it draws attention to an often-overlooked dimension of classroom climate that can significantly affect student motivation. It also highlights the potential value of adopting learner-centered approaches and active learning strategies (such as authentic tasks, problem-based learning, and collaborative activities) which can increase student engagement, foster peer interaction, and strengthen intrinsic motivation, ultimately enhancing both learning outcomes and performance (see Section 5.3 Pedagogical implications).

5.2.4. Teacher responsibility and instructional self-reflection

Perhaps the most notable divergence lies in the emphasis that EMP teachers in this sample place on their own potential to demotivate. The responding teachers appear to internalize responsibility for motivational barriers to a greater extent than students do. Compared to students, teachers overrated the significance of lack of feedback, constant teacher dissatisfaction, and lack of technical equipment as key barriers. This suggests a degree of professional self-reflection, where teachers may feel that insufficient feedback or an overly critical attitude on their part could hinder student motivation. Similarly, their concern about technical equipment might reflect frustration with institutional constraints that limit their ability to implement innovative teaching methods. However, as the participating students ranked these barriers considerably lower, it may indicate that while teachers are concerned about these issues, students do not necessarily perceive them as major obstacles to their learning.

This asymmetry is pedagogically significant. It reveals that the participating EMP teachers, aware of their central role in the learning environment, are prepared to consider how their behavior and choices, particularly in feedback and classroom management, affect learner engagement. Although students in our sample may not always explicitly attribute demotivation to teacher actions, the instructional environment constructed by teachers (via feedback, materials, and classroom climate) plays a decisive role in shaping how students experience success or failure. This aligns with the findings by Zeynali et al. (2019), who found that teacher dissatisfaction and insufficient feedback were among the most salient demotivational factors.

Encouragingly, both groups in our sample ranked teacher−student relationship relatively low as a demotivator, suggesting that interpersonal dynamics are generally perceived as constructive. This implies that students generally do not perceive their relationship with their EMP teachers as a barrier to learning, and that teachers themselves do not see it as a major issue. Had the teacher−student dynamic been perceived as problematic, it would likely have ranked higher. This may indicate that, at least in this context, the rapport between teachers and students is relatively positive and not a source of significant demotivation.

Although our instrument did not directly measure emotioncy or active/passive motivational states, the observed selection-frequency patterns resonate with its logic: conditions fostering vivid, experience-based engagement (career relevance, personal interest, sense of achievement) parallel high-emotioncy states, while time pressure, anxiety, or assessment misalignment echo low-emotioncy contexts. This suggests that our findings may be read as indirectly supporting the

pedagogical claim that enhancing sensory–emotional access promotes more active motivational states. Future studies could integrate validated emotioncy and engagement measures alongside salience metrics to test this interpretation empirically.

5.3. Pedagogical implications

The present study offers several pedagogical implications that can inform the enhancement of EMP instruction. Notably, the overall alignment between student and teacher perspectives on motivational drivers and barriers underscores the pedagogical significance of integrating students' needs and perceptions into curriculum development and instructional practice. The strong presence of the Ideal L2 Self among the top motivational drivers, particularly students' career aspirations and personal interests and the need for a supportive learning environment to reduce language learning anxiety highlight the need for outcome-oriented curriculum development in EMP. The approach based on learning outcomes (Biggs & Tang, 2011; Farkas, 2017) ensures alignment between educational goals, instructional practices, and assessment, thereby fostering greater learner engagement. Learning outcomes-based curriculum design and classroom culture fundamentally enhance learning motivation while reducing anxiety. In this context, backward design (Alvarez et al., 2024; Wiggins & McTighe, 2005) offers a valuable framework by prompting educators to begin with the end in mind, namely the professional competencies students are expected to acquire, and to plan pedagogical content and activities accordingly. This rationale aligns well with the motivational profile of EMP learners, who are typically goal-oriented and career-driven. When students clearly perceive how EMP instruction contributes to their future professional roles, their engagement and persistence are likely to increase. Learning outcomes that reflect students' future professional identities and aspirations can activate their motivational vision: if students can imagine themselves using English meaningfully in professional contexts, they are more likely to invest sustained effort to achieve that goal. Clearly articulated and professionally relevant learning outcomes may activate students' Ideal L2 Selves by helping them visualize their future roles as competent, internationally oriented healthcare professionals. As Dörnyei and Kubanyiova (2014) argue, the motivational power of the vision depends on its vividness, personal relevance, and achievability. When students are able to imagine themselves using English effectively in meaningful professional contexts, such as patient communication or scientific collaboration, they are more likely to sustain long-term engagement and effort. Thus, EMP instruction grounded in vision-enhancing goals supports both motivational intensity and self-regulated learning behavior.

Building on the empirical insights discussed above, the following sections outline key pedagogical implications derived from the findings. These implications are organized along three interrelated dimensions (Section 5.3.1): curriculum design informed by learning outcomes and backward design principles (Section 5.3.2); emotionally supportive and psychologically safe learning environments; and (Section 5.3.3) the strategic empowerment of EMP teachers.

5.3.1. Curriculum design grounded in learning outcomes and career relevance

There is a need for alignment between students' future-oriented motivations and the instructional strategies employed in EMP courses, ensuring that teaching practices resonate with learners' visions of their professional identities. One key characteristic of this learner-centered instruction is the use of tasks that are connected to real-life or professionally relevant situations. Such tasks activate students' cognitive framework and foster deep understanding and the development of actionable knowledge. Designing EMP learning environments that integrate language instruction with domain-specific medical content enables students to experience the practical relevance of English to their academic and professional trajectories. This can be achieved through content-based and context-based instruction. For instructors, this translates into designing lesson tasks that explicitly mirror real communicative demands (e.g., presenting a case summary, explaining a procedure to a peer). Designing EMP learning environments that integrate authentic medical content with language learning creates meaningful contexts in which students can see the direct applicability of English to their future careers. These pedagogical choices resonate with constructivist learning theory, which emphasizes the role of meaningful task design, learner autonomy, and experiential learning (Bruner, 1966; Vygotsky, 1978).

One way to enhance EMP learning could be through the thematic integration of EMP instruction with the teaching of medical subjects. Although not widely implemented at present, such alignment could contribute to a more authentic and professionally meaningful learning environment by connecting language development directly to students' emerging disciplinary knowledge. This approach does not entail the delivery of core medical content in English (which would be the equivalent of English as a Medium of Instruction, EMI or content and language integrated learning, CLIL) but rather the parallel offering of non-compulsory, supplementary EMP modules that align thematically with specific medical courses taught in Hungarian. In such parallel modules, students would engage with authentic and context-rich English-language materials, such as academic articles, clinical case studies, and medical literature that complement and preferably confirm the medical content taught in Hungarian.

Scenario-based tasks, particularly those involving simulated patients, offer valuable opportunities for contextualized language use in medical settings. As a highly immersive and professionally authentic form of scenario-based learning, simulated patient interactions closely mirror real-life clinical encounters. Such tasks not only reinforce students' medical knowledge but also support the development of domain-specific communicative competence in English (Hambuch et al., 2024).

These dual-focus approaches could not only enhance students' linguistic competence but also deepen their subject-matter understanding by fostering engagement with international literature. By situating language learning within relevant disciplinary contexts (Wiertlewska, 2019), such modules promote deeper understanding, cognitive engagement, and long-term retention.

Furthermore, technology-enhanced learning environments, particularly those involving immersive extended reality (XR), hold considerable potential not only for the teaching of medical subjects but also for EMP instruction that integrates medical content with language development. XR technologies can create highly authentic, real-life-like clinical scenarios and settings (Li et al., 2023; Wu et al., 2025) in which students can simultaneously expand their domain-specific medical knowledge and practice EMP in a contextually rich and professionally meaningful way. By allowing learners to engage in realistic simulations that mirror the communicative and procedural demands of clinical practice, XR supports both content learning and the development of EMP skills while also fostering professional identity formation and increasing learner motivation. Recent innovations in medical English pedagogy, such as blended teaching models designed to foster in-depth learning, have also demonstrated potential to enhance motivation and engagement among medical students (Dai & Zhao, 2023).

The successful implementation of such integration-based modules presupposes that (1) students have reached at least an intermediate level of English (B2–C1 according to the Common European Framework of Reference for Languages, CEFR), allowing them to comprehend and actively process domain-specific content in a meaningful way; (2) the implementation of such an initiative would necessitate close collaboration between content and language instructors; and (3) it also highlights the need to support EMP educators through targeted professional development to ensure the high-quality delivery of such integrated programmes. In the Hungarian context, such content-area expertise is rarely acquired by EMP teachers through formal training and is instead typically developed through self-directed learning (Stötzer, Bagyura, &

Farkas, 2025). This reflects a substantial gap in the current provision and underscores the need for institutional investment in structured, interdisciplinary professional development pathways. Developing this area would benefit from international collaboration and systematic knowledge sharing, which could help establish a more robust, practice-informed foundation for EMP instruction.

In the Hungarian medical education context, recent legislative changes (amendment to Act CCIV of 2011) have made it mandatory for universities to provide opportunities for students to learn professional languages. On the one hand, this development signals a recognition by decision-makers of the central role that LSPs play in higher education, acknowledging both its necessity and its value for students' future careers. On the other hand, the law leaves it to individual institutions to design and implement their own curricula, without providing a centralized framework. As a result, the responsibility for developing effective EMP learning modules falls on the medical schools and, in practice, on EMP teachers themselves. This underscores the importance of collecting and disseminating systematic feedback and research evidence, which can serve as a foundation for curriculum design and support EMP teachers in making informed pedagogical decisions.

5.3.2. Creating a psychologically safe learning environment

The results further highlight the importance of social factors in the learning environment, with anxiety, low self-confidence, and perceived speaking-related barriers identified as major impediments to students' engagement in EMP learning. To address these issues and create a psychologically safe and supportive environment, cooperative learning methods can play a significant role. In alignment with constructivist learning theory (Bruner, 1966; Vygotsky, 1978), language learning should be understood as an active process of knowledge construction rather than passive knowledge transmission. Accordingly, EMP instruction should prioritize tasks that are meaningful, value-generating, and embedded in authentic professional contexts. To foster learner autonomy and promote deeper engagement, such tasks must be both achievable and sufficiently challenging, enabling students to struggle productively and internalize professional language use. These aims are best served not through traditional instructional methods but through interactive, learner-centered approaches such as cooperative learning, problem-based learning, project-based learning, and flipped classroom models, all of which encourage sustained student activity and responsibility in the learning process. Cooperative learning techniques, such as pair and group work, peer teaching, near-peer teaching and collaborative projects, can reduce anxiety while fostering learner autonomy and a sense of shared responsibility (Johnson & Johnson, 2009). Task-based, problem-based, or project-based learning fosters learner autonomy by encouraging meaningful engagement with practical tasks. It promotes collaboration, supports active student involvement, and enhances motivation through purposeful language use. Assignments should include opportunities for students to apply real-life skills, such as preparing patient information leaflets, conducting simulated consultations, or summarizing medical research in English. Scaffolded speaking tasks, staged practice opportunities, flipped classroom and differentiated instruction that match learners' proficiency levels are crucial in reducing the fear of failure and building confidence. As Bandura's (1997) self-efficacy theory emphasizes, students' belief in their own competence is built through successive experiences of success. EMP teachers should therefore provide attainable short-term goals and offer formative feedback that highlights students' progress and effort rather than only outcomes. Moreover, assessment must be aligned with these principles. Assessment should serve as a learning tool rather than a judgmental mechanism. By focusing on formative, strength-based, and context-rich evaluation strategies (Black & Wiliam, 1998), teachers can reduce anxiety, support learner autonomy, and offer students multiple pathways to demonstrate their progress and professional development. EMP teachers can actively reduce anxiety by introducing low-stakes speaking opportunities before graded tasks, ensuring students rehearse in pairs or small groups first. Teachers may also normalize mistakes as part of learning by providing encouraging, formative feedback rather than summative judgment in early practice. Establishing clear ground rules for respectful interaction further contributes to a psychologically safe classroom climate.

In addition to personalized support, effective classroom practice also requires the establishment and consistent communication of high expectations for all learners. As classroom research consistently shows, students benefit most (from both a behavioral and academic perspective) when teaching is embedded in transparent structures, and teachers maintain high yet attainable expectations (Marzano, 2004; Wentzel, 2009). These expectations signal respect for learners' potential and, when combined with a caring and supportive teacher–student relationship, foster a sense of responsibility, persistence, and engagement. In EMP settings, such a climate is especially valuable given the perceived difficulty of medical English and the likelihood of learner anxiety. Balancing demanding goals with a reassuring classroom atmosphere can help reduce anxiety, increase self-confidence, and promote long-term motivation.

5.3.3. Strategic empowerment and institutional support for EMP teachers

The pedagogical conditions outlined in the previous sections can be realized only if EMP teachers are not merely expected to teach language but are empowered to act as facilitators of disciplinary language development. This requires a profound shift not only in teaching methodology but also in role perception and professional identity. As argued in our earlier study (Stötzer, Bagyura, & Farkas, 2025), the role of LSP teachers has evolved toward a more complex, hybrid position, requiring them to serve as facilitators, mentors, and coordinators at the intersection of language, content, and learner development. This reconfigured role demands not only personal initiative but also systemic, institutional support.

This evolving professional role is not merely theoretical but is clearly reflected in the present findings. EMP teachers placed proportionally greater emphasis on their own role in shaping student motivation (through instructional design, personal engagement, and relational strategies) demonstrating a high level of pedagogical responsibility and awareness. These findings suggest that motivation is not merely viewed as an internal student attribute but also as a dynamic construct that can be cultivated through deliberate and responsive teaching practices. Moreover, the quality of teachers' work, as well as their attitudes toward students, learning, and instruction, exerts a measurable influence on learners' personality development, academic motivation, performance, and even long-term educational and professional trajectories (Dörnyei & Ushioda, 2011). This underscores the importance of systematically supporting EMP teachers and enhancing the visibility of their contributions, particularly given that they often operate without formal training in medical content and must rely heavily on self-directed learning (Stötzer, Bagyura, & Farkas, 2025). Targeted institutional support should include structured professional development in teaching strategies, curriculum design, training in backward design and learning outcomes-based instruction, interdisciplinary collaboration with medical educators, and the establishment of formal mentoring systems (Stötzer, Bagyura, & Farkas, 2025).

At the classroom level, EMP teachers can strengthen their practice by keeping reflective teaching journals to monitor how their strategies affect student motivation. Peer observation and co-teaching arrangements may also provide valuable opportunities for mutual learning and professional support. Regularly collecting short, anonymous student feedback enables instructors to adjust methods responsively, which in turn fosters trust and motivation.

6. Strengths and limitations

A notable strength of this study is its methodological approach, which explicitly adopts a dual perspective by collecting and analyzing

data from both medical students and EMP teachers. The dual perspective is not only a methodological strength but also a conceptual one: by juxtaposing student and teacher perceptions, our study provides a more comprehensive picture of the motivational dynamics underlying EMP learning. The complementary viewpoints enrich the interpretation of the findings, as the convergence and divergence between students and teachers shed light on aspects of motivation that would have remained hidden if only one perspective had been examined. To our knowledge, no previous research has applied such a design to investigate motivational dynamics in EMP learning in either the Hungarian context or the wider international literature. This dual-perspective approach not only identifies key drivers and barriers of motivation but also reveals the degree of alignment or divergence between student and teacher views.

Another important strength lies in the study's context-specific contribution: it offers rare empirical insight into EMP motivation within a non-Anglophone medical education environment, where English is not the medium of instruction but nevertheless essential for students' future professional trajectories. By situating the findings in the Hungarian context, the study also provides transferable insights that may be relevant to comparable non-EMI settings internationally.

The findings carry direct practical relevance not only for teachers and policy-makers but also for curriculum developers, who may draw on these insights when designing more coherent and motivating EMP programs. The study highlights specific factors, such as career orientation, personal interest, and psychological barriers, that appear to play a central role in shaping learner engagement. These factors can serve as starting points or focal areas for further research in other educational or cultural contexts. In this sense, the results contribute to a broader understanding of EMP motivation by identifying core elements that are likely relevant across diverse settings, even if their relative importance may vary.

At the same time, several limitations must be acknowledged. The use of a forced-choice item format, while effective for prioritizing key factors, may have constrained participants' ability to express more nuanced or context-specific concerns. The study is confined to a relatively small and context-specific sample drawn from Hungarian medical schools, which may limit the generalizability of the findings beyond this national setting. Additionally, since all participating institutions operate within a single national education system, the findings may reflect local curricular structures, institutional cultures, or language education policies that differ substantially from those in other countries. Moreover, because participation was voluntary, potential self-selection bias cannot be ruled out; the respondents may differ systematically from the wider population in their interest in or attitudes toward EMP. As with all self-reported data, the findings may also be influenced by social desirability bias or other limitations inherent to self-report measures. Finally, the study design was cross-sectional, without longitudinal tracking; as a result, it cannot capture how students' motivational dispositions may shift over time in response to curricular changes, evolving professional identities, or external circumstances. These constraints limit the transferability of the results but do not diminish their relevance, they offer empirically grounded starting points for future larger-scale, cross-contextual, and longitudinal studies.

7. Conclusion

In response to the three objectives of this study, several conclusions can be drawn. First, regarding the most salient motivational drivers and barriers (Objective 1), the findings show that Hungarian medical students' motivation to learn EMP is largely facilitated by their career goals and personal interest, whereas demanding schedules and language learning anxiety act as the most significant barriers. This highlights the central role of both intrinsic and career-oriented motivation, while also pointing to the structural and psychological constraints that hinder sustained engagement. Second, in relation to the degree of alignment between students' and EMP teachers' perceptions (Objective 2), it can be concluded that there is a notable alignment regarding both factors that support and hinder motivation in EMP learning. The data also reveal that EMP teachers perceive their own role as more influential than students do, both in terms of supporting and hindering motivation. This suggests a strong sense of professional responsibility among EMP teachers, who may attribute students' engagement or lack thereof to pedagogical approaches and instructional effectiveness. Third, addressing practice-oriented implications for EMP curriculum development (Objective 3), we recommend that pedagogical improvements in EMP instruction should be grounded in student-centered design, authentic learning tasks, a psychologically safe learning environment, and teacher empowerment. Future research should investigate the long-term impact of such pedagogical interventions on sustaining motivation and improving EMP learning outcomes.

Beyond these objectives, the study contributes to the broader EMP and L2 motivation literature by providing rare empirical evidence from a non-EMI context. Importantly, this study provides evidence-based insights that are transferable to comparable educational systems internationally, where English is essential but not the medium of instruction. By drawing on research-based findings rather than relying solely on everyday experiences or assumptions, stakeholders can make more informed choices when refining curricula and pedagogical practices to better meet students' motivational needs.

CRediT authorship contribution statement

Andrea Stötzer: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Márton Bagyura:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis. **Éva Farkas:** Writing – review & editing, Project administration, Conceptualization.

Data availability statement

The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

Ethical approval

This study did not involve any clinical intervention or biomedical procedures. It is a social science research project, and as such, it was conducted in accordance with the institutional ethical regulations of the University of Szeged. This study was reviewed and approved by the Ethics Committee of the Doctoral School of Education of the University of Szeged (Reference number: 1/2023, dated February 6th, 2023. Both teachers and students were informed about the purpose of completing the questionnaire, and no sensitive data were collected. Participation was voluntary, and written informed consent was obtained from all individual participants included in this study. The written informed consent was obtained electronically: the first page of the questionnaire outlined the purpose of the study, the voluntary nature of participation, and data protection measures. Participants could proceed to the survey only after actively indicating their consent.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the authors used ChatGPT (OpenAI, GPT-4 model) to receive assistance with the linguistic formulation and academic phrasing of the manuscript and cover letter. After using this tool, the authors thoroughly reviewed and edited the content to ensure clarity, accuracy, and appropriateness. The authors take full responsibility for the final content of the publication.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix

Table A.1
Questionnaire items in Hungarian (original) and English (translation)

Hallgatói kérdőív:	**Student EMP Motivation Questionnaire[a]:**
Önt mi motiválja leginkább az angol orvosi szaknyelv tanulásában? Válassza ki/nevezze meg a HÁROM legfontosabbat. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az „Egyéb" válaszlehetőségnél.	What motivates you the most in learning EMP? Please select/name the THREE most important factors. If something is missing from the list, please indicate it under "Other."
Tanári kérdőív:	**LSP Teacher Questionnaire:**
Mit gondol, mely tényezők segítik elő leginkább a hallgatók szaknyelvtanulási motiváltságát? Válassza ki/nevezze meg a HÁROM legfontosabbat. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az "Egyéb" válaszlehetőségnél.	What do you think are the factors that contribute most to students' motivation to learn LSP? Choose/name the THREE most important ones. If you miss something from the list, please indicate it under "Other".
Válaszlehetőségek mindkét csoport számára	**List to choose from for both cohorts**
☐ sikerélmény	☐ sense of achievement
☐ személyes érdeklődés	☐ personal interest
☐ tanár–hallgató kapcsolat	☐ teacher–student relationship
☐ közösség (társak, intézmény felől megfogalmazott elvárások)	☐ community (expectations of peers and/or institution)
☐ hosszú távú (karrier) célok	☐ career goals
☐ tanár személyisége	☐ EMP teacher's personality
☐ tanár szaknyelvi tudása	☐ teacher's EMP knowledge
☐ innovatív módszerek alkalmazása	☐ innovative methods
☐ családi háttér	☐ family background
☐ tanár szakmai/szakterületi tudása	☐ EMP teacher's discipline-related content knowledge
☐ egyéb	☐ other
Hallgatói kérdőív:	**Student EMP Motivation Questionnaire:**
Mi veszi el a kedvét leginkább az angol orvosi szaknyelv tanulásától? Jelölje be a HÁROM legfontosabbat. Nyugodtan nevezzen meg egyéb faktorokat az „Egyéb" lehetőségnél, ha nem találja a listában az Önnek legfontosabbnak tartott tényezőket.	What discourages you the most from learning EMP? Please select the THREE most important factors. Feel free to list additional factors under "Other" if your top concerns are not included below.
Tanári kérdőív:	**LSP Teacher Questionnaire:**
Mit gondol, mely tényezők akadályozzák leginkább a hallgatók motiváltságát? Válassza ki/nevezze meg a HÁROM legfontosabbat. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az "Egyéb" válaszlehetőségnél.	What factors do you think are the biggest obstacles to student motivation? Select/name the THREE most important ones. If you miss something from the list, please indicate it under "Other".
Válaszlehetőségek mindkét csoport számára	**List to choose from for both cohorts**
☐ sikertelenség érzése	☐ feeling of failure
☐ nyelvtanulói szégyenlősség/szorongás	☐ language learning shyness/anxiety
☐ tanár–hallgató kapcsolat	☐ teacher–student relationship
☐ hallgatótársak közömbössége	☐ lack of engagement from fellow students
☐ magas csoportlétszám	☐ large group size
☐ leterheltség	☐ demanding schedule
☐ technikai eszközök hiánya	☐ lack of technical equipment
☐ tananyag, tankönyv nem megfelelő volta	☐ inappropriate teaching materials or textbooks
☐ túlzó tanári szigor	☐ excessive teacher strictness
☐ folyamatos tanári elégedetlenség	☐ constant teacher dissatisfaction
☐ visszajelzés hiánya	☐ lack of feedback
☐ egyéb	☐ other

[a] The table presents the exact wording of the student and teacher questionnaire items relevant to the present study, as included in the original Hungarian instrument (which contained other items not part of this study), alongside their English translation. The same question was posed to both groups, with wording adapted to the target audience, while the list of selectable items remained identical.

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CHAPTER SEVEN
Discussion and Conclusions

The five studies comprising this dissertation collectively offer a comprehensive and empirically grounded understanding of how English for Medical Purposes (EMP) is conceptualized, taught, and learned within the Hungarian higher (medical) education context. Viewed collectively, the findings illustrate the necessity of a dual-lens perspective that investigates both student motivation and teacher agency recognizing both as co-constructors of the EMP learning environment. The interplay of psychological, pedagogical, and institutional factors revealed across the studies paints a rich, complex picture of what it means to teach and learn EMP in a non-English medium context.

7.1 General discussion

The narrative literature review (Study 1) by Stötzer and Farkas (2024) lays the conceptual foundation by emphasizing that EMP is not merely a functional subset of English instruction but a content-rich, context-dependent practice that requires not only linguistic skills but also familiarity with medical discourse and practices.

7.1.1 From conceptual clarification to instrument development

One of the key contributions of the narrative literature review is the proposed distinction between English for Medical Purposes (EMP) and English for Health Sciences Purposes (EHSP), which serves to clarify the scope of language instruction within and across health science-related disciplines. This distinction is especially important as the linguistic environments associated with different areas of the health sciences (such as dentistry, physiotherapy, and pharmacy) have begun to assert their specificities more clearly. Although certain elements of *medical* English may be shared across disciplines, the communicative contexts, terminology, and educational needs can differ considerably. For instance, the linguistic demands of teaching English to dental or physiotherapy students diverge substantially from those required in the field of medicine in its strict sense (EMP), both in terms of vocabulary and situational use. Furthermore, students in these programs often enter the university with different levels of English proficiency, which has direct implications for curriculum design. Thus, while the term EHSP may serve as a useful umbrella term when referring collectively to these diverse fields, it remains crucial to maintain a clear terminological and pedagogical distinction, reserving EMP specifically for medical students and physicians.

Already during the literature review process, supported both by an extensive review of relevant scholarship and by our own pedagogical experience, it became evident that if we accept the premise that learning and teaching a language for specific purposes (LSP) is fundamentally different from general language instruction, then it is also reasonable to assume that students' motivation to learn EMP diverges in key ways from the motivational profiles observed in general English learning contexts. The motivational disposition of EMP learners, shaped by context-specific communicative demands and career-driven goals, is likely to reflect a different constellation of factors, including heightened instrumentality, professional identity aspirations, and sensitivity to domain-relevant efficacy beliefs. Understanding this distinctive motivational profile is not merely an academic endeavor; it is crucial for designing pedagogical strategies

and curricula that resonate with students' actual goals and perceptions. However, as our literature review and empirical investigations reveal, this area remains largely underexplored. No validated motivational questionnaire had been adapted specifically for EMP contexts, despite the increasing demand for ESP instruction in higher education.

To address this gap, we developed a context-sensitive instrument grounded in Dörnyei's L2 Motivational Self System (L2MSS) (Dörnyei, 2005, 2009), a well-founded and empirically validated framework widely used in second language acquisition (SLA) motivation research, but—remarkably—never applied to the domain of EMP. The result was a psychometrically robust instrument that measured motivational variables including Ideal L2 Self, Ought-to L2 Self, Integrativeness, Instrumentality (promotion/prevention), and affective dimensions such as L2 anxiety, self-efficacy, and self-confidence. Importantly, this context-sensitive tool allowed for a more nuanced exploration of motivation in EMP than previous research, which had typically relied on general ESP instruments or instrumental-integrative dichotomies (Stötzer et al., 2025c). The newly developed instrument's psychometric robustness was demonstrated via Principal Component Analysis (PCA) and reliability indices (Cronbach's alpha and McDonald's omega), thereby providing a reliable diagnostic tool tailored to EMP learners in Hungarian medical programs. PCAs revealed coherent unidimensional constructs with acceptable explained variances, while most scales demonstrated strong internal reliability, particularly Ideal L2 Self and Self-Confidence. The somewhat weaker reliability of Ought-to L2 Self reflects the challenges of capturing externally driven motivation in this context. Students' motivational profiles were primarily characterized by intrinsic, goal-oriented dispositions: descriptive statistics revealed high mean endorsement of the Ideal L2 Self and Self-Efficacy scales, suggesting that learners perceive themselves as future competent EMP users. This pattern aligns with international findings and points to a predominantly intrinsic motivational orientation. Instrumentality (particularly its promotion-focused dimension) also received strong support, reflecting the utilitarian value students associate with EMP in pursuing academic and career goals. Conversely, the comparatively lower scores on Integrativeness and the presence of negative attitudes toward EMP may be attributable to cohort-specific factors, such as year of study or the compulsory nature of EMP courses.

Positioning our study within the context of existing research (while acknowledging that our instrument was specifically contextualized for EMP) we found that our results are consistent with international findings that identify the Ideal L2 Self as a key motivational factor in L2 learning (Fajt & Bánhegyi, 2023; Huhtala et al., 2019; Pálinkás, 2012; Zeng & Jia, 2023). Hungarian medical students similarly appeared to be guided by a self-image of using English proficiently in future professional settings. Although the cited studies did not focus on EMP learners, our findings resonate with those conducted among medical students, even if based on other theoretical frameworks.

Correlation analyses revealed that Intended Learning Effort was significantly associated with most motivational variables, particularly with Ideal L2 Self and Self-Efficacy. These findings suggest that students' willingness to engage with EMP is closely tied to their future-oriented self-concepts and belief in their own abilities. While negative attitudes toward EMP showed a weaker connection to Intended Learning Effort, their potential indirect influence (through constructs like anxiety or self-confidence) should not be overlooked. The results reinforce the importance of nurturing self-efficacy and positive attitudes to maintain motivation.

These patterns align with Brady's (2019a, 2019b) study on Spanish L2 learners, which similarly reported strong correlations between Intended Learning Effort and core L2MSS dimensions, despite examining a different learner population and context.

7.1.2 Exploring predictors of Intended Learning Effort

Building on the validated instrument developed in Study 2 (Stötzer et al., 2025c), the subsequent quantitative analysis conducted in Study 3 (Stötzer et al., 2026) provided empirical evidence of the multidimensionality of EMP learning motivation. In Study 3, we employed the same scales to explore how the identified motivational constructs interact with learners' Intended Learning Effort. While Study 2 confirmed the structural and internal consistency of the nine-scale instrument, Study 3 focused on mapping the empirical relationships between these dimensions. We identified Integrativeness, Ideal L2 Self, and Instrumentality-Prevention as direct predictors of Intended Learning Effort. Integrativeness had the strongest effect, suggesting that students are primarily motivated by the desire to engage in international research and collaboration and to be part of the global medical and scientific community. This interpretation reflects an evolving understanding of Integrativeness: in EMP contexts, it appears less about cultural identification and more about professional affiliation at the international level. These findings resonate with previous research that has begun to reframe integrative motivation in more profession-oriented terms (Demír & Hamarat, 2022; Marošan & Marković, 2019; Tomak & Šendula-Pavelić, 2017). Ideal L2 Self also proved to be a strong predictor, highlighting the motivational power of learners' future self-concept as proficient EMP users. Though relatively underexplored in medical English settings, this construct demonstrated its relevance to EMP learners, echoing findings from other ESP domains (e.g., Martín-González & Chaves-Yuste, 2024). Importantly, the presence of a vivid Ideal L2 Self fosters self-regulated learning and sustained engagement, reinforcing the notion that effective EMP instruction should support students in visualizing long-term linguistic growth as part of their ongoing professional development (Alqahtani, 2017). While Instrumentality-Prevention had a weaker effect, it still contributed to Intended Learning Effort, indicating that avoidance-based motives, such as fears of not being able to use EMP effectively in professional settings or of being judged by peers for limited language competence, can still contribute to effort, even if these motives are more defensive in nature. Interestingly, neither the Ought-to L2 Self nor Instrumentality-Promotion had a direct impact on Intended Learning Effort. However, both constructs showed indirect effects through Integrativeness and Ideal L2 Self. In particular, Ought-to L2 Self exerted a negative indirect effect on Intended Learning Effort via Ideal L2 Self, suggesting that external pressures might actually undermine students' internal vision of themselves as successful EMP users. Still, a small positive indirect effect was also observed via Integrativeness, indicating that when external expectations are aligned with a broader sense of professional belonging, they may still foster engagement. These patterns reinforce the idea that while external factors may initiate interest, they are less effective in sustaining long-term, self-driven effort.

Beyond the core dimensions, Study 3 also examined the influence of what we termed *'supplementary'* constructs, such as Self-Confidence, Self-Efficacy, Attitudes (positive and negative), and L2 Anxiety, on the direct predictors of Intended Learning Effort. Self-Confidence emerged as a particularly important factor, significantly predicting both Integrativeness and Ideal L2 Self. Students who felt confident in their English abilities were more likely to identify

with the global medical community and envision themselves as competent EMP users. Self-Efficacy also supported the Ideal L2 Self (Al-Hoorie, 2018), consistent with previous findings that these constructs are mutually reinforcing (Roshandel et al., 2018).

L2 Anxiety, on the other hand, was associated with both Integrativeness and Instrumentality-Prevention. Students with higher levels of anxiety appeared more attuned to the risks of insufficient EMP proficiency, thereby reinforcing their prevention-based motivation. At the same time, L2 anxiety seemed to intensify their perceived need to belong to a professional community, possibly as a compensatory mechanism. Positive attitudes toward EMP were linked to stronger Integrativeness and Instrumentality-Prevention, suggesting that valuing EMP enhances both aspirational and defensive motivational orientations. Conversely, negative attitudes were found to weaken prevention-driven motivation, implying that students who view EMP as irrelevant or unhelpful are less likely to engage, even for the sake of avoiding negative outcomes. Taken together, these findings emphasize the interplay of affective and cognitive variables in shaping EMP motivation and underscore the pedagogical relevance of fostering self-confidence, positive attitudes, and future-oriented self-images in medical English instruction.

7.1.3 Exploring the professional landscape of LSP teachers

Although Study 2 and Study 3 of this dissertation focused primarily on students' motivational dispositions, the narrative literature review (Study 1: Stötzer & Farkas, 2024) already emphasized that motivation is embedded in a broader instructional ecology in which teachers play a central role. Motivation does not operate in a vacuum; it is deeply intertwined with the instructional quality, teacher expertise, and interpersonal dynamics present in the learning environment (Alrabai & Alamer, 2024; Dörnyei & Ushioda, 2011). Building on this understanding, it was a natural and necessary progression to shift the analytical lens toward the educators themselves. Study 4 (Stötzer et al., 2025b) deliberately extended the scope of inquiry beyond EMP teachers to include all LSP instructors working across a range of disciplines. This methodological decision was driven by the recognition that many of the systemic and pedagogical challenges encountered in EMP settings—such as lack of formal training, high workload, and limited institutional recognition—are not unique to the context of EMP but are shared across the broader LSP landscape. By including a wider spectrum of LSP professionals, the study was able to capture structural patterns and recurring challenges that transcend disciplinary boundaries. Thus, Study 4 offers a detailed portrait, an in-depth account of the educational trajectories, professional identities, and professional challenges of Hungarian LSP teachers.

The findings in Study 4 revealed that most respondents began their careers as (general) language teachers and transitioned into LSP instruction via one of three informal pathways: personal decision, institutional assignment, or circumstantial necessity. This transition typically occurred in the absence of formal training or content-specific qualifications, a pattern that mirrors trends reported elsewhere in Europe (Bocanegra-Valle, 2023; Jurkovič et al., 2024). In the Hungarian context, LSP teachers largely rely on non-formal and informal professional development (including conferences, peer support, and self-directed learning) to acquire the disciplinary knowledge needed for their work. While many respondents self-identified as LSP teachers, their professional roles remain under-recognized within institutional structures, and

their career advancement options are often limited to academic trajectories requiring a PhD. This lack of formal pathways raises concerns about whether LSP teaching constitutes a distinct profession. The construction of professional identity, as understood in the literature (McCall et al., 2021; Porter & Wilton, 2020), involves an ongoing negotiation between personal attributes and institutional conditions. In the present study, this process was found to be marked by fragility and ambiguity. Despite their dedication, many participants reported feelings of professional marginalization, insufficient access to content-specific training, and a lack of formal acknowledgment of their expertise. The near-absence of dedicated training programs in Hungary further exacerbates these challenges, leaving most teachers to independently develop the interdisciplinary and digital competencies increasingly required in LSP instruction.

Respondents also highlighted a range of pedagogical and institutional challenges. Many reported struggling with the disciplinary diversity of their student groups, varying levels of student language proficiency, and the absence of standard curricula or validated teaching materials. These difficulties are exacerbated by the need to continuously update one's subject-specific knowledge and to integrate evolving digital and AI-based tools. As highlighted in the findings, the preparation required to teach domain-specific language is substantial and goes unrecognized in the current HEI framework, which treats LSP instruction as functionally equivalent to general language teaching, failing to recognize the subject-specific preparation it entails. Motivating students was also cited as a key challenge, particularly when learners lacked basic language competence or failed to see the relevance of LSP. Importantly, the data suggest that student motivation is not solely an individual matter but is heavily shaped by the broader institutional stance toward LSP instruction. When institutions are perceived as supportive—e.g., through recognition of LSP teaching, lighter workloads, or access to development opportunities—teachers are better equipped to foster learner engagement and maintain their own motivation.

Study 4 reveals that despite the absence of formal training programs or institutional recognition, these teachers demonstrate a high degree of commitment and self-regulated professional development. They often compensate for the lack of content-specific qualifications by engaging in continuous self-study and informal knowledge exchange. These strategies helped them cope with the complexity of LSP instruction, which increasingly requires interdisciplinary knowledge, digital fluency, and familiarity with professional discourse. However, the heavy reliance on self-teaching is ultimately unsustainable without institutional investment. Institutional support was found to be inconsistent across higher education institutions, with some teachers reporting marginalization despite the increasing relevance of LSP. The findings call for policy-level reforms, including formal recognition of LSP as a distinct teaching area, tailored training programs, workload recalibration, and mechanisms for collaboration between language and content specialists. Together, these changes would address both the structural and professional needs of LSP educators and contribute to the sustainable development of this critical teaching field. The study confirms that systemic measures—such as formal recognition of LSP teaching, the development of targeted training programs, differentiated workload models, and structured collaboration between language and content specialists—are urgently needed. These steps would not only reinforce LSP teachers' professional identity and retention but also enhance the quality and relevance of instruction.

Study 4 makes a significant contribution by placing LSP teachers' voices at the center of inquiry, which is rare in the existing literature. These findings reveal that LSP teaching in Hungary is marked by professional ambiguity, high workload, and under-recognition, yet also by resilience, adaptability, and commitment on the part of instructors. Strengthening institutional support systems, formalizing training pathways, and fostering collaboration between content specialists and LSP teachers are essential next steps. These measures would not only support teacher identity and retention but also enhance the motivational climate for learners—a dual benefit that reflects the interdependent nature of teacher and student motivation in EMP contexts.

7.1.4 Students' and EMP teachers' views on drivers and barriers to EMP learning

Building on the findings of Study 4, which revealed structural and pedagogical patterns across the broader LSP teaching landscape, the final empirical investigation (Study 5: Stötzer et al., 2025a) narrows the focus once more to English for Medical Purposes. This time, however, both medical students and their EMP teachers are brought into analytical view. Study 5 offers a comparative analysis of their views on what enhances or hinders motivation in EMP contexts. Study 5 set out to examine the extent to which medical students' and EMP teachers' perceptions align in identifying the key factors that facilitate or hinder student motivation to learn English for Medical Purposes. Drawing on both item-level and aggregated data (the latter structured around Dörnyei's L2 Motivational Self System [2005, 2009]), the results revealed considerable convergence between the two groups regarding the most salient motivational drivers, accompanied by meaningful differences in emphasis that yield important pedagogical implications.

The most prominent category across both cohorts was the Ideal L2 Self, which refers to learners' internalized vision of themselves as successful users of English in future professional contexts. This motivational dimension accounted for the majority of responses (70.1% among students and 57.5% among teachers). Both groups emphasized the importance of career goals and personal interest as key drivers of EMP learning. Students tended to associate EMP with their future roles as internationally active healthcare professionals, highlighting the instrumental and aspirational significance of language learning. Teachers similarly recognized that goal-oriented, future-focused motivation was central to student engagement. The prominence of this category aligns closely with well-established frameworks such as Self-Determination Theory (Deci & Ryan, 1985; Ryan & Deci, 2000), which emphasizes the value of intrinsic goals in fostering sustained effort, and with Dörnyei's L2MSS, which positions the Ideal L2 Self as a primary predictor of learning engagement. Notably, the strong presence of personal interest suggests that many students are motivated not only by external outcomes but also by a genuine desire to acquire medical English knowledge, reinforcing the idea that EMP can be intrinsically meaningful when it is aligned with learners' identities and values.

The second most frequently cited source of motivation was the L2 Learning Experience, a category encompassing classroom-level influences such as teaching methods, learning atmosphere, and teacher–student interactions. This dimension captured 40.4% of student responses and 51.7% of teacher responses. Both groups acknowledged the motivational power of a positive and engaging classroom environment, yet their emphases differed. Students tended to highlight the sense of achievement as a key motivator, referring to the satisfaction derived

from successfully applying EMP knowledge in authentic or simulated professional contexts. This links directly to Bandura's (1997) self-efficacy theory, which suggests that mastery experiences enhance learners' confidence and willingness to persist. Teachers, in contrast, placed greater weight on the personality of the instructor and the use of innovative methods, such as task-based or simulation-based activities. This divergence likely reflects the differing vantage points of the two groups: while students focus on tangible outcomes of their learning, teachers are more attuned to the instructional processes that shape those outcomes.

Importantly, the link between these perspectives should not be overlooked. Teachers' ability to design well-structured tasks, provide constructive feedback, and maintain an enthusiastic presence directly influences students' sense of progress. Teachers thus play a dual role: they serve as both motivators and facilitators of achievement. These dynamics resonate with Deci and Ryan's (1985) theory that intrinsic motivation is supported when learners experience autonomy, competence, and relatedness – all of which can be enhanced by effective instructional strategies and positive interpersonal rapport. Vygotsky's (1978) sociocultural theory also supports this perspective, emphasizing that motivation and learning are co-constructed through social interaction and scaffolding.

Interestingly, the Ought-to L2 Self (representing external expectations from peers, institutions, or family) was far less influential than the Ideal L2 Self or L2 Learning Experience in both groups' responses. Nevertheless, students gave this category slightly more emphasis than teachers did. For some learners, the pressure to meet institutional standards, align with peer norms, or satisfy parental expectations may serve as extrinsic motivators. These influences can be especially salient in rigid academic environments where compliance with formal requirements is emphasized. Teachers, however, placed greater value on elements within their pedagogical control, such as rapport building and demonstrating professional competence in EMP. The relatively low weight assigned to family influence may be attributed to the higher education context, where learners are generally expected to be autonomous. Moreover, in the Hungarian context, family-based pressure regarding professional language learning appears to be minimal, which contrasts with patterns found in more collectivist societies, such as those in East Asia (see Markus & Kitayama, 1991; Ryan & Deci, 2000).

When examining the factors that hinder motivation, similar patterns of agreement and divergence emerged. The analysis drew on a categorization framework that distinguished between institutional constraints (outside the teacher's control), teacher-controlled variables, and internal affective factors. Among these, the most prominent demotivators were demanding schedules and language-related anxiety (two obstacles frequently mentioned by both students and teachers). The time-intensive nature of medical education poses a structural barrier that leaves little room for EMP learning, while affective challenges such as fear of failure or discomfort using English in high-stakes situations often exacerbate disengagement. These findings are consistent with Krashen's (1982) affective filter hypothesis, which posits that negative emotional states inhibit language acquisition, as well as with theories of cognitive load and resource depletion (Sweller, 1988), which suggest that overload diminishes learners' capacity to focus and persist.

Beyond these shared concerns, subtle differences emerged. Students ranked feelings of failure and peer disengagement as stronger demotivators than teachers did, pointing to the importance of classroom climate and social interaction. An unmotivated or passive group can

undermine individual engagement by limiting interaction and reducing the energy of communicative tasks, especially in courses like EMP, which rely on authentic, collaborative learning. Teachers, by contrast, highlighted logistical issues such as large group size and lack of equipment, indicating that from their perspective, structural barriers constrain their ability to deliver engaging instruction. These findings suggest that teachers may underrecognize the peer-related social dimensions of classroom motivation, an area worth closer pedagogical attention.

Perhaps the most revealing divergence lies in how teachers and students assign responsibility for demotivation. Teachers tended to assume more responsibility, ranking factors such as lack of feedback or constant dissatisfaction with students more highly than students themselves did. This suggests a degree of professional self-awareness, with teachers acknowledging that their own attitudes and choices may impact learners negatively. Conversely, students rarely attributed their motivational difficulties directly to teacher behavior. While this may indicate a generally positive perception of EMP teachers, it also underscores the possibility that some instructional influences, such as subtle discouragement, insufficient support, or demotivating materials, are not always explicitly recognized by students, even when they affect their learning indirectly.

Encouragingly, both groups ranked the teacher–student relationship relatively low among the demotivators, suggesting that interpersonal dynamics are not generally a source of tension in this context. On the contrary, this may reflect a relatively positive classroom atmosphere in EMP courses, which supports motivation rather than undermines it.

An important finding from Study 5 is that social-environmental factors play a central role both as drivers of motivation (most notably the teacher–student relationship) and as barriers to motivation (such as language learning shyness and anxiety), from the perspectives of both learners and instructors; this finding aligns with a growing body of research demonstrating that educators who consciously cultivate positive relationships with their students tend to employ more effective motivational strategies (Butler & Shibaz, 2014; George & Richardson, 2019; Mahavong & Fejes, 2025; Wang et al., 2017), and it deserves particular attention precisely because these are among the few motivational dimensions that fall within teachers' direct pedagogical influence.

Overall, the findings of this study demonstrate that while medical students and EMP teachers often perceive motivation through different lenses, their views are largely compatible, especially concerning internal drivers and major barriers. The nuanced differences uncovered—particularly in how each group interprets classroom dynamics, social context, and professional responsibility—offer valuable insights for reflective teaching and learner-centered instructional design. They also affirm the need to address both structural and affective dimensions of the learning environment in order to foster sustained motivation in EMP education.

7.2 Pedagogical and practical implications

The five studies that constitute this dissertation collectively offer a rich repertoire of pedagogical and practical insights for the teaching and curriculum development of English for Medical Purposes (EMP), particularly within non-English-medium medical programs[9]. These

[9] This contextual focus warrants particular emphasis, as it markedly differs from settings in which medical content is delivered in English to non-Anglophone speakers. The latter represents an English as a Medium of Instruction (EMI) scenario, which has become a fairly extensively researched domain in language education recently. In such

implications span instructional strategies, curriculum design, teacher development, and institutional support mechanisms.

A recurring theme across the studies is the centrality of the Ideal L2 Self in motivating medical students to engage with EMP. This future-oriented vision (students imagining themselves as competent professionals using English in global medical contexts) can be pedagogically activated through learning environments that are authentic, i.e., content-based, context-based, and professionally meaningful. Authenticity emerged as a pedagogical factor with strong potential to enhance student engagement and motivation throughout the studies, particularly in Study 3 and Study 5. While the terms "content-based" and "context-based" are sometimes used interchangeably, they reflect distinct pedagogical orientations (Antić, 2016; Wiertlewska, 2019). Content-based tasks are designed around subject matter and aim to teach language through that content. In the case of EMP, this may involve learning English vocabulary and structures through medical texts, case reports, or medical (anatomy, physiology, pathophysiology, etc.) lectures. The primary focus is on integrating disciplinary knowledge with language development, often following the principles of Content and Language Integrated Learning (CLIL). By contrast, context-based tasks place greater emphasis on the communicative situations and roles in which language is used, rather than the disciplinary content itself. These tasks are rooted in the actual settings where communication occurs (such as doctor–patient interactions, ward rounds, or academic presentations) and aim to replicate the social, professional, and pragmatic dimensions of language use (Sukisno et al., 2025). While they may still involve technical content, their defining feature is that language is embedded in realistic scenarios, allowing learners to practice functional language use in contextually appropriate ways. The recommended instructional strategies should thus leverage tasks and materials that mirror real-life clinical communication and academic practices. EMP instruction benefits from the incorporation of authentic materials and professionally meaningful tasks, such as scenario-based simulations, including clinical role-plays and simulated doctor–patient interactions, allowing students to rehearse professional roles in safe but realistic environments, strengthening both linguistic competence and self-efficacy (Stötzer et al., 2025a, 2025b).

Another avenue worth exploring (and, in fact, another way of aiming for authenticity) in future curriculum development involves the meaningful integration of EMP into professional medical subjects. Rather than isolating language instruction from disciplinary learning, a more interdisciplinary approach could promote mutual reinforcement between linguistic and medical competencies. One important pedagogical implication concerns the thematic integration of EMP with medical content subjects. As several of our studies suggest (Stötzer & Farkas, 2024; Stötzer et al., 2025b), collaboration between EMP teachers and medical educators can promote the development of interdisciplinary modules that enhance relevance, support professional identity formation, and deepen both linguistic and medical competence. One particularly promising model would be the co-development of interdisciplinary student projects (such as

contexts, learners' English proficiency is often presumed to be sufficiently advanced to cope with discipline-specific demands. Therefore, EMI programs are rarely accompanied by language instruction. By contrast, in non-EMI programs, EMP instruction typically occurs in parallel with, rather than through, medical content courses, requiring distinct pedagogical approaches.

Scientific Students' Association[10] research papers) where students would be encouraged to engage with medical topics and literature in English under the joint supervision of subject-matter experts and EMP instructors. In such projects, the professional and linguistic components would not merely coexist but actively complement one another, as students would be required to formulate research questions, engage with academic sources, present findings, and receive feedback, all while deepening their domain knowledge. In addition to extra-curricular initiatives, curricular integration (where EMP courses are aligned with and support parallel medical subjects) can also be highly beneficial. Such parallel language instruction, delivered alongside content courses, reinforces domain-specific knowledge while simultaneously building professional language skills.

This type of integration not only reflects real-world communicative demands in international academic and clinical settings but also offers fertile ground for activating both instrumentality and integrativeness, two core motivational dimensions highlighted across the Studies involved in this Dissertation. Students would be able to see the concrete academic and career benefits (instrumentality-promotion), such as participating in conferences or publishing in English, while also developing a sense of belonging to the global medical community (integrativeness). Rather than treating language as an ancillary skill, such interdisciplinary configurations would reframe English as a medium for knowledge creation and professional identity formation. In this context, Integrativeness (as reframed in Study 3) does not denote cultural assimilation into an Anglophone identity but rather a desire to become a legitimate participant in the international discourse of medicine. Implementing such initiatives would require institutional coordination, interdisciplinary collaboration of content instructors and EMP teachers and curricular flexibility, but the pedagogical rewards could be significant.

Equally important are the affective and psychosocial conditions under which EMP learning occurs. The findings of Studies 3, 4, and 5 indicate that factors such as L2 anxiety, low self-efficacy, and fear of failure may inhibit active engagement, particularly among students in the early phases of their medical education. These affective barriers highlight the need for supportive classroom environments that explicitly address learners' psychological needs. Creating an emotionally supportive classroom environment emerges as a pivotal pedagogical imperative. The studies document that language learning anxiety and fear of failure are significant demotivators, which can be mitigated through formative assessment, scaffolded instruction, and a psychologically safe climate. Techniques such as differentiated instruction, flipped classrooms, and collaborative tasks help lower anxiety while promoting learner autonomy and confidence (Stötzer et al., 2025a). Low-stakes, scaffolded tasks – such as voice-recorded interpreting exercises or structured peer collaboration[11] (Branden, 2006) – can offer

[10] Scientific Students' Association research project (commonly known in Hungary as TDK, short for Tudományos Diákköri Konferencia) refers to an extracurricular academic initiative in Hungarian higher education where students, under faculty supervision, conduct independent research and present their findings at institutional or national conferences. These projects are typically undertaken by highly motivated students and often serve as early steps toward academic careers or thesis development. TDK work requires students to formulate research questions, review scholarly literature, analyze data, and present their results (frequently in a written paper and oral presentation format) mirroring the practices of professional scientific research.

[11] In the case of structured peer collaboration, students engage in carefully designed pair or group activities where their roles, objectives, and interaction patterns are clearly defined in advance. For example, learners might co-construct a clinical dialogue, take turns simulating doctor–patient roles, or jointly analyze a short medical case, with each participant responsible for a specific aspect of the task. This kind of structured interaction ensures that

students opportunities to build confidence without the pressure of public performance. Furthermore, when instructors foster an atmosphere of mutual respect, encouragement, and inclusivity, they help students develop the self-belief necessary to sustain motivation and transform latent potential into active learning effort. Such learning environments are not incidental; they are pedagogically engineered spaces in which anxiety is acknowledged and mitigated rather than ignored.

The pedagogical implications outlined above carry significant relevance for EMP teachers themselves. They underscore the evolving expectations placed on instructors in non-EMI contexts, where the role of the EMP teacher increasingly extends beyond language instruction to include curriculum mediation, interdisciplinary collaboration, and the creation of authentic, professionally grounded learning experiences. It must be emphasized that achieving and maintaining this expected level of authenticity in everyday teaching practice presents a substantial challenge for EMP instructors. Designing, adapting, and facilitating professionally relevant tasks require considerable expertise, time, and interdisciplinary coordination – factors that are not always institutionally supported. Study 1, Study 4, and Study 5 collectively highlight the precarious positioning of EMP instructors within academic institutions: although tasked with highly specialized instructional duties, these educators often lack formal training in medicine and operate in relative isolation from their content-teaching colleagues. Many are self-taught in medical content, and few have access to sustained professional development. This situation calls for institutional recognition of the unique expertise required in EMP instruction and the provision of targeted training opportunities. Structured collaboration between language instructors and medical faculty should be incentivized, both to enhance instructional authenticity and to alleviate the epistemic burden EMP teachers face. In-service training opportunities focused on LSP methodology, needs analysis, and outcome-oriented curriculum design can further empower educators to respond to learners' motivational and professional needs. Such training should include learning-outcome-based course design (Farkas, 2017) and backward planning (Wiggins & McTighe, 2005), enabling EMP instructors to align instructional content with target competencies from the outset. By starting with the desired professional and communicative outcomes and planning backwards from those goals, instructors can develop more focused, relevant, and motivating learning pathways.

In our view, an especially promising avenue for supporting the next generation of EMP instructors would lie in the institutionalization of structured mentoring programs. While informal mentoring and collegial guidance already occur in many LSP teaching contexts, these ad hoc arrangements lack the consistency, sustainability, and visibility necessary to prepare novice teachers for the complex demands of LSP instruction. A formalized mentoring framework would provide aspiring LSP/EMP instructors (particularly those transitioning from general English or early-career teachers entering the LSP domain) with guided access to disciplinary knowledge, pedagogical models, and curricular strategies that are aligned with the realities of EMP classrooms. Senior instructors with experience in both language pedagogy and domain-specific instruction could serve as mentors, offering hands-on support in course design,

all students are actively involved, receive targeted peer support, and engage in meaningful language use within a psychologically safe environment. Because the tasks are framed as cooperative rather than evaluative, they promote risk-taking, reduce language anxiety, and foster the development of self-efficacy—key affective components in sustaining motivation for learning English for Medical Purposes.

material development, classroom observation, and reflective practice. Such programs would not only ease the entry into an underdefined and often unsupported teaching domain but also contribute to the long-term professionalization of LSP teaching. Importantly, mentoring initiatives would need to be institutionally recognized and resourced to be effective: participating teachers should be allocated time, incentives, and training to fulfill their mentoring roles, and novice instructors should be given structured opportunities to observe, co-teach, and receive feedback within a safe developmental framework. Establishing these conditions would help transform what is currently a fragmented or improvised apprenticeship model into a purposeful, transparent, and empowering system for preparing future EMP educators.

In addition to mentoring schemes, the implementation of micro-credentials[12] could provide a flexible yet formalized mechanism for recognizing the diverse competencies required in EMP instruction. Given that EMP educators often acquire their expertise through self-directed learning, practical experience, and informal collaboration rather than structured degree programs, micro-credentials would offer a way to validate and certify this non-linear professional development. Institutions or national LSP associations could design modular certification paths (covering areas such as needs analysis, authentic material development, backward curriculum design, and interdisciplinary collaboration) that allow instructors to gradually build a verified professional profile in EMP teaching. These stackable credentials would not only enhance the legitimacy and visibility of EMP teaching but also offer a career development trajectory in a field where formal specialization opportunities remain scarce. When combined with mentoring, micro-credentials could serve as both formative and summative tools for developing novice teachers, while also encouraging continuous upskilling for experienced instructors in an evolving pedagogical landscape.

A further condition for achieving pedagogical authenticity (especially from the teacher's perspective) is the opportunity to experience the target discourse communities firsthand. In the case of EMP, this implies gaining exposure to the communicative, procedural, and cultural realities of clinical environments in both local (Hungarian) and international (primarily Anglophone) contexts. Although digital platforms and video-based resources can offer partial insights, they remain limited in their capacity to replicate the affective, interpersonal, and situated nature of real-life medical communication. To complement digital resources and gain a fuller understanding of medical discourse communities, structured teacher mobility programs, study visits, and interdisciplinary placements in hospitals, clinics, or outpatient settings (either domestic or abroad) could enable EMP instructors to develop a more nuanced understanding of the professional contexts their students are preparing for. Such experiences not only enhance instructors' awareness of medical discourse but also inform the design of contextually grounded pedagogical materials and tasks. Despite the pedagogical value of such initiatives, institutional support for them remains scarce. As such, there is a pressing need for greater advocacy and cross-faculty cooperation to establish sustainable frameworks for experiential teacher development in the field of EMP.

[12] A micro-credentialing system is a flexible certification framework that formally recognizes specific skills or knowledge in small, focused units, often through digital badges or certificates (Farkas, 2024). Rather than replacing traditional qualifications, micro-credentials complement them by promoting lifelong learning and continuous professional development. These systems are particularly valuable in dynamic fields such as healthcare communication or ESP instruction.

Together, these studies advocate for a learner-centered, motivation-sensitive, and contextually integrated approach to EMP education – an approach in which the motivational profiles of learners, the pedagogical responsibilities of teachers, and the institutional infrastructures should all coalesce to shape meaningful and effective language learning experiences. A recurring, if tacit, theme emerging from the Studies (1, 4 & 5) that involved teachers is that many colleagues already work (often voluntarily and with great dedication) in alignment with the spirit of the pedagogical recommendations outlined above. Their practices suggest a deep internalization of outcome-oriented, interdisciplinary, and learner-centered approaches, even in the absence of formal mandates. However, the lack of institutional frameworks, legal provisions, or workload recognition means that this work remains largely invisible, unsystematic, and unrewarded. For these bottom-up efforts to reach their full potential, they must be matched by top-down support that legitimizes and sustains them. In this sense, institutional change is not only desirable – it is necessary.

7.3 Limitations and future directions

While the five studies presented in this dissertation collectively offer a multifaceted account of EMP-related motivation and teaching in the Hungarian higher education context, several limitations should be acknowledged, both methodological and practical, some of which stem from the specific challenges encountered during data collection and implementation.

One of the primary difficulties was accessing and engaging the instructor population. Reaching LSP/EMP teachers across diverse institutions proved logistically complex. The difficulty of locating and accessing EMP instructors underscores their precarious institutional positioning – both as educators and as research participants. This structural invisibility complicates not only their professional development, but also their representation in academic inquiry. Despite receiving valuable support from the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes (SZOKOE), I also personally contacted identifiable LSP instructors via email, using contact information found on university websites. Ultimately, 44 LSP teachers participated in Study 4 (including 20 EMP teachers in Study 5), which represents a meaningful proportion of the estimated national population of 300–350 LSP instructors. While this number provides a solid empirical basis, it is important to note that the conclusions primarily reflect the perspectives of the participating teachers. Accordingly, any generalizations to the entire population of LSP instructors in Hungary should be treated with caution, particularly regarding those working outside major academic centers or under atypical employment conditions.

Similarly, student participation posed its own challenges. Although the main student survey achieved a satisfactory sample size, securing voluntary participation was difficult. This can be partly attributed to the intensive and time-constrained nature of medical education, which limits students' availability and willingness to engage in research outside core curricular demands. In addition, medical students are frequently inundated with questionnaires and surveys, which contributes to survey fatigue and further reduces response rates. Their already high workload and stress levels, as highlighted in the literature (Kiss & Pikó, 2025), further explain why voluntary participation in online surveys tends to be limited.

From a methodological standpoint, the studies focused primarily on cross-sectional data, which provides rich snapshots but limits causal inference. While the adapted questionnaire

demonstrated strong psychometric properties, it was developed and validated within a specific national and disciplinary context. Future studies seeking generalizability should conduct confirmatory analyses across different institutions, programs, or countries. While self-report questionnaires are common in motivation research, they offer only a static view of what is inherently a dynamic and context-sensitive phenomenon. Future studies may explore experience sampling methods or longitudinal tracking to capture shifts in learners' motivational states over time.

In the qualitative strand of the research, such as the study on LSP teachers' professional identity, the absence of follow-up interviews or ethnographic observation limits the depth of interpretation. While open-ended responses offered valuable narratives, a more nuanced understanding of professional identity construction could be achieved through in-depth qualitative methods.

If this research were to be conducted again, more effort would be devoted to building institutional partnerships from the outset to facilitate broader access to teacher and student participants. Establishing formal collaborations with faculty members and university administrators might also enhance the visibility and legitimacy of the research, improving recruitment and engagement. For future researchers entering this field, it is advisable to allow for extended timelines in both participant recruitment and questionnaire piloting, particularly in the highly scheduled and gatekept environments of medical education.

In addition to logistical and methodological limitations, the interdisciplinary and multidimensional nature of the research itself posed unique challenges. The project's scope – spanning language pedagogy, medical education, motivational psychology, and educational policy – required the integration of diverse theoretical frameworks and methodological approaches. This conceptual breadth made it difficult to position the research squarely within a single academic discipline or journal audience. The dual focus on both student and teacher perspectives, and the combination of qualitative and quantitative methods, further increased the complexity of design, data analysis, and dissemination. While these characteristics contribute to the novelty and richness of the research, they also posed considerable challenges when deciding which journals to target for publication. Importantly, this was not incidental but a consciously adopted approach: the deliberate choice to combine conceptual and applied perspectives made the project more demanding, yet it also endowed the dissertation with its distinctiveness and scholarly value.

Despite these limitations, the studies offer reliable, replicable methodologies and raise critical questions that can inform both empirical and applied research in ESP and EMP contexts. By documenting these challenges transparently, this dissertation not only reflects on its own boundaries but also aims to support future investigations seeking to explore motivation, identity, and pedagogy in similarly complex educational environments.

7.4 Further research directions, future plans

The research presented in this dissertation opens several promising avenues for future inquiry, both theoretical and applied. Building on the current findings, future studies will seek to further explore the complexities of EMP instruction by deepening the dual-perspective framework that integrates student motivation and teacher identity.

In addition to the primary analyses presented in this dissertation, further qualitative data remain to be systematically examined. These include open-ended responses from both students and instructors (information on students' learning strategies, their expectations towards EMP teachers, LSP/EMP teachers' motivating factors and competencies), as well as written justifications/explanations provided by students who chose not to enroll in EMP courses. While these respondents were excluded from the main motivational analyses, their narratives could offer important insight into perceived barriers, scheduling conflicts, or misalignments between student needs and curricular offerings. Analyzing these accounts may illuminate structural or affective factors that dissuade learners from engaging with EMP instruction.

Another immediate research direction involves qualitative follow-up studies, particularly semi-structured interviews with both medical students and EMP instructors. While the present research has yielded valuable quantitative and survey-based insights, more nuanced, contextualized accounts of learner experience and teacher agency can be accessed through qualitative methods. Interview studies will allow for the examination of latent beliefs, values, and strategies that shape engagement with EMP in ways that go beyond item-level analysis. These follow-ups may also investigate how teachers navigate tensions between curricular demands, institutional expectations, and personal pedagogical beliefs.

Another potential trajectory involves longitudinal tracking of students' motivational dispositions throughout their medical studies. The current cross-sectional data offer only a static view of motivation, while a longitudinal approach would allow for the observation of changes across semesters, clinical placements, or disciplinary modules. Such studies would provide insight into the sustainability of motivational constructs such as Ideal L2 Self and Self-Efficacy, particularly in relation to evolving academic demands and professional self-concepts.

At the same time, the research is expected to expand in a direction driven by recent legislative changes. As of the 2024/25 academic year, the Act on Hungarian higher education has formally established university students' right to receive profession-specific language (LSP) instruction. As a result, English for Medical Purposes has become a compulsory curricular component at our own institution. This development marks a significant step forward in the institutional recognition of EMP and calls for a rigorous pedagogical and policy-oriented response. Importantly, the research conducted as part of this dissertation has already provided valuable background information for our Department[13], helping to inform the design and launch of EMP courses that are aligned with students' needs, disciplinary content, and institutional expectations. With one full academic year of mandatory EMP instruction now completed, valuable first-hand feedback has been collected from both students and instructors. These early implementation experiences constitute a rich source of data, offering the opportunity to examine how learners and teachers perceive the new curricular mandate in practice. Future studies will involve the systematic analysis of these feedback data, with a focus on learners' perceived relevance, engagement, and challenges, as well as instructors' reflections on course design, instructional strategies, and institutional support under the new regulatory framework. This post-implementation evaluation is expected to play a crucial role in informing iterative curriculum development and fostering evidence-based refinements.

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Beyond the research-oriented directions, practical dissemination of the research findings remains a core priority. The findings have been (see above) and will be shared with stakeholders positioned to make curricular and institutional decisions. Specifically, the dissertation will be sent (accompanied by a brief cover letter of appreciation and recommendation) to the Deans of all Hungarian medical schools. This gesture not only acknowledges their support during data collection but also invites them to reflect on the pedagogical implications of the research. These insights may inform local innovations and more targeted teacher training schemes.

Dissemination will also take more accessible forms. Selected findings will be translated into Hungarian and disseminated through national academic conferences and Hungarian-language journals targeting tertiary education professionals. These outputs will prioritize pedagogical clarity and contextual relevance, aiming to support instructors, curriculum designers, and policy actors involved in EMP instruction and language education in Hungary.
The research will continue its collaboration with the Hungarian Association of Teachers and Researchers of Languages for Specific Purposes (SZOKOE). As a professional body that supported the initial stages of this project, SZOKOE provides an ideal platform for further dissemination and scholarly engagement. The findings will be shared through the association's communication channels, workshops, conferences, and potential publications. This partnership is not only instrumental for outreach but also essential for validation and collaborative development.

As a long-term objective, the validated motivational questionnaire developed in this research presents a flexible tool for extension into other health sciences. Future studies will explore its applicability among students in fields such as pharmacy, physiotherapy, or nursing, as well as its adaptation to interdisciplinary or CLIL-based educational environments. Such extensions would allow for broader empirical testing of the instrument and enhance its utility across multiple professional learning contexts.

Looking ahead, I also intend to contribute to the practical implementation of several key recommendations outlined in this dissertation. In particular, I aim to support the meaningful integration of English for Medical Purposes into medical curricula, both through interdisciplinary course design and through collaboration with subject-matter experts. Furthermore, I plan to work toward the establishment of a structured mentoring program for novice EMP instructors, with the goal of fostering professional development, improving instructional quality, and supporting long-term teacher retention in the field. These initiatives, grounded in empirical findings, represent the next phase of my professional and academic engagement with EMP education.

7.5 Final conclusion

This dissertation set out to examine how English for Medical Purposes (EMP) is taught and learned in Hungary by investigating two interrelated domains: medical students' motivation and the professional identity and pedagogical realities of the teachers who instruct them. Through a series of five empirical studies, it has demonstrated that motivation to learn EMP is shaped by a dynamic interplay of future-oriented vision, affective variables, and contextual affordances, while the teaching of EMP is carried out by committed, yet often unsupported instructors navigating professional expectations without formal recognition or structured development pathways.

By conceptualizing EMP as a highly situated form of language education – anchored in disciplinary content, global communication demands, and professional identity formation – the research offers a framework for understanding both the learner and teacher side of this instructional domain. The studies confirmed that medical students are largely motivated by internalized goals, such as professional aspirations and a sense of self-efficacy, but that their motivation is also influenced by learning experiences, affective factors, and institutional conditions. At the same time, the findings reveal that EMP teachers often operate in structurally precarious environments, relying on self-teaching, peer collaboration, and pedagogical intuition to meet the growing demands of content-specific language instruction.

The combined findings provide a compelling argument for approaching EMP education as a collaborative, interdisciplinary, and learner-centered enterprise. They also point to the urgent need for institutional reforms: to recognize LSP teaching as a distinct professional domain, to offer structured training and mentorship for teachers, and to design curricula that reflect students' academic trajectories and motivational dispositions.

The dissertation contributes to the growing body of literature that positions Languages for Specific Purposes as a field where pedagogical practice, disciplinary expertise, and identity development intersect. It bridges motivational theory with applied language instruction, and local empirical findings with broader educational challenges. By giving voice to both students and teachers, it offers not only diagnostic insights but also constructive directions for the future of EMP education in Hungary and potentially in comparable contexts.

Ultimately, this research argues that improving EMP instruction requires more than effective materials or innovative classroom strategies. It demands an ecosystem in which learners are empowered, teachers are supported, and institutional structures are aligned with the real-world demands of professional language use. This dissertation is offered as a step toward that vision.

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APPENDIX A

Table DA.1 Summary of research design and methodology across studies

Research phases	Research aim	Type	Participants*	Instrument & data collection	Data analysis & Software
Literature review **Study 1**	• to clarify the conceptual boundaries of EMP; • to underline relevance of EMP; • to examine who are the teachers of EMP	focused narrative literature review	n/a	structured source selection based on inclusion/exclusion criteria, backward snowballing	Thematic synthesis
Student questionnaire (Likert scale part) **Study 2 & 3**	• to validate the contextualized, Dörnyei's L2MSS-based questionnaire	quant.	medical students main: n=283 from all 4 med schools (pilot: 103 sts from 1 med school)	Online questionnaire • administered by Google Forms • containing contextualized items based on Dörnyei's L2MSS • 6-point Likert scale items (70) • in Hungarian • between FEB–APR, 2024	PCA and Reliability Analyses (Cronbach's α and McDonald's ω) IBM SPSS Statistics 28.0 and Jamovi 2.5.3
	• to examine the direct and indirect effects of motivational dimensions	quant.			Linear regression with stepwise method and General Linear Model (GLM) mediation analyses IBM SPSS Statistics 28.0 and Jamovi 2.3.28
Teacher questionnaire **Study 4**	• to explore the educational pathways and professional identity of LSP teachers • to examine their challenges	quant. & qual.	LSP teachers in Hungary n=44 (including 20 EMP teachers	Online questionnaire • administered by Google Forms • self-developed • containing both open- and closed-ended items • in Hungarian • between FEB–APR, 2024	Univariate and bivariate descriptive statistical analyses (Monte Carlo, Kruskal–Wallis) IBM SPSS Statistics 28.0 Thematic analysis
Forced-choice item selection **Study 5**	• to explore medical students' and their EMP teachers' perceptions of the most influential drivers and barriers in EMP learning	quant.	medical students (n=283) from all 4 med schools EMP teachers (n=20)	Online questionnaire • administered by Google Forms • self-developed • containing predefined motivational driver/barrier list with forced-choice (top-three) selection • integrated into both student and teacher questionnaires • in Hungarian	Descriptive statistics (frequency counts and percentages)

** Participation was voluntary and anonymous, and informed consent was obtained from all respondents in accordance with ethical research guidelines.*

Table DA.2 Summary table of research questions/objectives and main results

	Aim	Target group	Research questions / Research objectives	Main Results
Study 1 (Stötzer & Farkas, 2024)	This narrative review aims to contribute to understanding the evolving landscape of EMP development and teaching by highlighting aspects of EMP that warrant revisitation.	n/a	RQ1 How is EMP conceptually defined?	EMP is most commonly defined as the teaching of English tailored to the specific needs of medical learners, particularly medical students and physicians. However, its use in the literature is inconsistent, sometimes including other health professionals such as nurses or physiotherapists. Given the increasing need for discipline-specific language instruction, we recommend reserving the term 'EMP' for learners in medicine proper and suggests using broader terms like 'English for Health Sciences Purposes' (EHSP) when referring to multiple health disciplines.
			RQ2 What factors underline the importance of learning EMP?	Several interrelated factors highlight the importance of learning EMP: (1) EMP learners are typically adult medical students or professionals who require English for study, research, and practice; (2) EMP is purpose-driven and closely tied to learners' professional goals; (3) its mastery offers a competitive advantage in academia and clinical settings; (4) EMP instruction is content-based and benefits from collaboration with subject-matter experts; and (5) updated needs analyses confirm both student and teacher demand for targeted, discipline-specific language training.
			RQ3 Who are the teachers of EMP?	EMP teachers are typically trained language professionals (native or non-native) with pedagogical expertise but limited formal education in medical content. Their work is highly complex and often requires self-directed learning of the medical field, curriculum design, materials development, and interdisciplinary collaboration. Despite increasing demands, they face limited training opportunities, lack of career development, and professional isolation. Recent EU projects have begun addressing these challenges, but further research is needed on EMP teachers' identities, working conditions, and responses to educational shifts (e.g., AI, remote teaching).
Study 2 (Stötzer et al., 2025c)	This study presents the development of a novel questionnaire to assess medical students' motivation to learn EMP	medical students in Hungary	RQ1 Are the scales adapted and contextualized to assess the motivational disposition of Hungarian medical students in the context of learning EMP appropriately structured and internally consistent?	Yes. The study confirmed that the adapted scales are internally consistent and structurally appropriate for assessing Hungarian medical students' motivation to learn EMP. PCA showed unidimensional components with over 40% explained variance and satisfactory item loadings (>0.6). Most scales exceeded the $\alpha = 0.7$ threshold; only Ought-to L2 Self showed weaker reliability ($\alpha = 0.572$), suggesting refinement. The instrument reflects a predominantly intrinsic, goal-oriented motivational profile.
			RQ2: Do the extracted principal components form	Yes. The extracted components formed coherent and theoretically grounded motivational dimensions. Ideal L2 Self, Intended Learning Effort, and Self-Efficacy showed strong reliability and central roles in shaping motivation. Two separate

	Aim	Target group	Research questions / Research objectives	Main Results
			coherent dimensions, and what relationships exist among these dimensions?	components for Attitude to EMP (positive and negative) reflected ambivalent student perceptions. Correlation analysis confirmed that Intended Learning Effort was strongly linked to Ideal L2 Self and Self-Efficacy, suggesting that future self-concepts and confidence are key motivational drivers. Negative attitudes had weaker associations with effort but may influence anxiety or self-confidence. These results validate Intended Effort as a key indicator of students' motivational investment in EMP.
Study 3 (Stötzer et al., 2026)	This study aimed to model the motivational dynamics underlying Hungarian medical students' effort to learn EMP by examining how 'core' and 'supplementary' motivational dimensions interact to predict intended learning effort.	medical students in Hungary	RO1: To examine and demonstrate the direct and indirect effects of the 'core' motivational dimensions (IL2S, O2L2S, INTEG, I_PROM and I_PREV) on medical students' Intended Learning Effort (ILE) in the context of learning EMP.	The analysis confirmed that several core motivational dimensions exerted significant direct or indirect effects on medical students' Intended Learning Effort (ILE). Specifically, INTEG, the IL2S, and I_PREV emerged as direct predictors of ILE, indicating that students' willingness to learn EMP was primarily driven by their sense of identification with the professional community, their envisioned future selves as competent medical English users, and their awareness of potential negative consequences of inadequate language skills. By contrast, O2L2S and I_PROM influenced ILE indirectly through INTEG and IL2S, suggesting that external expectations and career advancement goals motivated students only when internalized and aligned with personal aspirations.
			RO2: To explore and demonstrate how 'supplementary' variables (psychosocial dispositions including S_CONF, S_EFF, ATT_POS, ATT_NEG, and L2_ANX) influence those core motivational dimensions which have direct effects on Intended Learning Effort (ILE).	The investigation of supplementary variables revealed that S_CONF S_EFF enhanced both Integrativeness and the IL2S, thereby indirectly reinforcing ILEt. Conversely, L2_ANX showed a negative association with these internal motivational dimensions and a positive association with I_PREV, implying that anxiety may shift motivation toward avoidance-based effort. Furthermore, Positive Attitudes toward EMP strengthened integrative and promotion-oriented motives, while Negative Attitudes amplified prevention-oriented motives. Collectively, these findings demonstrate that affective and cognitive dispositions substantially shape the quality and direction of motivation underlying medical students' engagement in learning EMP.
Study 4 (Stötzer et al., 2025b)	This study aims to explore the professional characteristics and main challenges of LSP teachers	LSP teachers in Hungary	RQ1: What are the educational pathways and professional identity of LSP teachers?	The majority of LSP teachers in the study had backgrounds in language teaching or linguistics, with few holding degrees in the specialized fields the language of which they teach. Most reported becoming EMP teachers by necessity rather than deliberate career choice. Their professional identity is often shaped by autonomy, self-directed learning, and practical teaching experience, rather than formal content-specific training. Many do not self-identify as experts in the given specialty, but as language professionals who support domain-specific communication, often assuming multiple roles such as material developers, mentors, and facilitators.

	Aim	Target group	Research questions / Research objectives	Main Results
			RQ2: What are the main challenges and difficulties of LSP teachers?	Participants reported several recurring challenges: lack of institutional recognition, absence of clear career pathways, limited access to content-specific training, and the pressure to self-educate in the medical domain. They often work in isolation, with scarce opportunities for professional development or collaboration with subject-matter experts. Their role complexity (balancing linguistic and content-related expectations) adds to their workload. Despite high adaptability and dedication, many experience professional insecurity and undervaluation within their institutions.
Study 5 (Stötzer et al., 2025a)	This study aims to explore the motivational drivers and barriers of Hungarian medical students in learning EMP, comparing their perspectives with those of EMP teachers.	medical students in Hungary and their EMP teachers	RO1: To identify the most salient drivers and barriers of medical students' motivation to learn English for Medical Purposes in non-EMI medical programs.	Hungarian medical students' motivation to learn EMP is largely facilitated by their career goals and personal interest, whereas demanding schedules and language learning anxiety act as the most significant barriers. This highlights the central role of both intrinsic and career-oriented motivation, while also pointing to the structural and psychological constraints that hinder sustained engagement.
			RO2: To determine the degree of alignment and divergence between students' and EMP teachers' perceptions within the same institutional context.	There is a notable alignment regarding both factors that support and hinder motivation in EMP learning. The data also reveal that EMP teachers perceive their own role as more influential than students do, both in terms of supporting and hindering motivation. This suggests a strong sense of professional responsibility among EMP teachers, who may attribute students' engagement or lack thereof to pedagogical approaches and instructional effectiveness.
			RO3: To derive empirically grounded, practice-oriented implications for EMP curriculum design in non-EMI settings.	Pedagogical improvements in EMP instruction should be grounded in student-centered design, authentic learning tasks, a psychologically safe learning environment, and teacher empowerment. Future research should investigate the long-term impact of such pedagogical interventions on sustaining motivation and improving EMP learning outcomes.

ATT_NEG = Negative attitude to learning English for Medical Purposes
ATT_POS = Positive attitude to learning English for Medical Purposes
EMP = English for Medical Purposes
I_PREV = Instrumentality – Prevention
I_PROM = Instrumentality – Promotion
ILE = Intended learning Effort
IL2S = Ideal L2 Self
INTEG = Integrativeness
L2_ANX = L2 learning anxiety
O2L2S = Ought-to L2 Self
S_CONF = Self-Confidence
S_EFF = Self-Efficacy

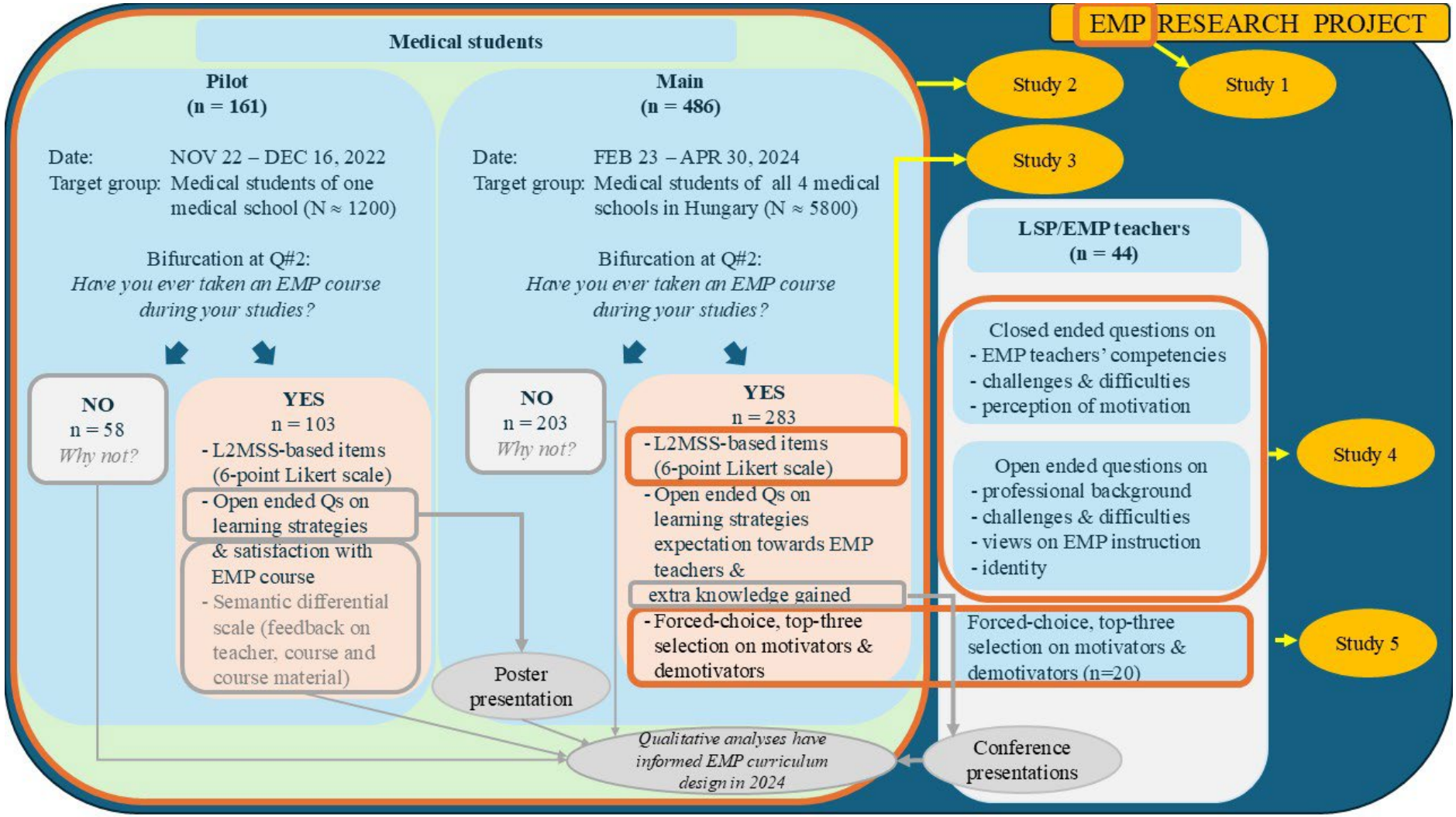

Figure DA.1 Visual summary of the EMP research project

APPENDIX B

Hungarian version of the Student EMP Motivation Questionnaire

This appendix contains the original, Hungarian version of the Student EMP motivation questionnaire, as it appeared in the Google Forms platform used for data collection. To preserve the authenticity of the instrument, the format presented here reflects the version that was actually seen and completed by the respondents. For the English translation of the questionnaire, see Appendix C. The item numbering is consistent across the English and Hungarian versions of the questionnaire. Items marked with an asterisk (*) were mandatory and had to be completed in order to proceed with the questionnaire.

The questionnaire is structured to branch at the point where respondents indicate whether they have studied English for Medical Purposes (EMP) at university (Question 2). Respondents who answered “yes” proceeded to the motivation-related section (Questions 3–80), whereas those who answered “no” were presented with a single item probing their reasons (Question 81). The demographic questions (Questions 82–91) were identical for both groups.

Kérdőív az angol orvosi szaknyelv tanulásának motivációs hátteréről

Kedves Hallgató!

Vizsgálatunkban azt szeretnénk megismerni, milyen motivációval tanulnak angol orvosi szaknyelvet a hallgatók, és ebben kérjük a segítségét. A kérdőív kitöltése kb. 15–20 percet vesz igénybe.

Ha eddig még nem tanult angol orvosi szaknyelvet, akkor is kíváncsiak vagyunk a véleményére; a kérdőív kitöltése ez esetben max. 5 percet vesz igénybe.

Válaszaival hozzájárul, hogy az angol szaknyelvet oktató munkatársaink még hallgatóbarátabb és a valós igényeket kiszolgáló szaknyelvi kurzusokat dolgozhassanak ki.

A kérdőív 2024. május 11-ig tölthető ki.

Köszönjük együttműködését!

Ha bármilyen észrevétele, megjegyzése vagy kérdése van a vizsgálattal kapcsolatban, írjon erre a címre:

Stötzer Andrea

stotzer.andrea.maria@med.u-szeged.hu

1.

Tájékoztató *

A vizsgálatban való részvétel anonim, személyazonosító adatokat nem igényel. Az adatok gyűjtése kizárólag tudományos céllal történik. Az Ön által adott válaszok csak a kutatást végző személyek számára elérhetők, külső, harmadik fél számára nem hozzáférhetők. A kutatásban való részvétel teljesen önkéntes. A kérdőív kitöltését bármikor megszakíthatja, a kérdések megválaszolását megtagadhatja. A kérdőív kitöltésével Ön hozzájárul, hogy válaszait összesítve a többi válaszadóéval tudományos célra felhasználjuk, publikáljuk.

Hozzájárulás

Elmúltam 18 éves, hozzájárulok, hogy a magyarországi orvostanhallgatók angol orvosi szaknyelvtanulási motivációját felmérő kutatásban részt vegyek. Tudomásul vettem, hogy a kutatás az anonimitás és személyiségi jogok tiszteletben tartásával, kutatási célra használja fel adataimat. Kijelentem, hogy a kérdőívről tájékoztatást kaptam, és egyetértek a vizsgálatban való részvétellel.

- ◯ Igen
- ◯ Nem

2.

Eddigi tanulmányai során vett már fel angol orvosi szaknyelvet? *

- ◯ Igen → Kérdések 3–80 és 82–91 (demográfia)
- ◯ Nem → Kérdések 81 és 82–91 (demográfia)

„IGEN” válasz a 2. kérdésre

Igen válasz esetén

3. Összesen hány szemeszterben vett fel angol orvosi szaknyelvi kurzust eddig? *(Ha most is jár ilyenre, számolja bele.)* *

Kiválasztás

Kérjük, jelölje be, **mennyire ért egyet** az állításokkal. *
Nincsenek „jó” és „rossz” válaszok: bátran lehet őszinte.

Teljes mértékben egyetértek. (+++)
Nagyrészt egyetértek. (++)
Inkább egyetértek. (+)
Inkább nem értek egyet. (-)
Nagyrészt nem értek egyet. (--)
Egyáltalán nem értek egyet. (---)

Az állítások minden esetben így kezdődnek:
SZERINTEM ...

	(+++)	(++)	(+)	(-)	(--)	(---)
4. ... orvosi szakmai közösségen belül csak angol nyelvtudással lehet érvényesülni.	○	○	○	○	○	○
5. ... az orvosi angol szaknyelv birtokában több lehetőségem lesz megfelelő állást találni.	○	○	○	○	○	○
6. ... Magyarországon idegen nyelvtudás nélkül is lehetek kiváló szakember.	○	○	○	○	○	○
7. ... jó nyelvérzékem van angol nyelvből.	○	○	○	○	○	○
8. ... bármilyen mindennapi szituációban megértetem magam angolul.	○	○	○	○	○	○
9. ... bármilyen szaknyelvi szituációban megértetném magam angolul.	○	○	○	○	○	○
10. ... hasznos lenne, ha minden orvostanhallgatónak kötelező lenne angol orvosi szaknyelvet tanulnia.	○	○	○	○	○	○

11.	... elég lenne az egyetemen az általános angol nyelvtudást fejleszteni, a szaknyelvet később is elsajátíthatja az ember.	○	○	○	○	○	○
12	... az angol orvosi szaknyelv csak latin szavakból áll, amelyeket angolul kell kiejteni.	○	○	○	○	○	○

A következő részben azt jelölje be, hogy **mennyire érzi jellemzőnek vagy igaznak saját magára** vonatkoztatva az adott állítást. Itt sincsenek „jó" és „rossz" válaszok: bátran lehet őszinte. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

		(+++)	(++)	(+)	(-)	(--)	(---)
13.	Valószínűleg a diplomám megszerzése után is fejleszteni fogom a szaknyelvi angoltudásomat.	○	○	○	○	○	○
14	Meglátásom szerint a jövőben a szakmámban elvárják tőlem, hogy ismerjem az angol orvosi szaknyelvet.	○	○	○	○	○	○
15	Elképzelhetőnek tartom, hogy gond nélkül kommunikálok külföldön angol nyelven betegekkel.	○	○	○	○	○	○
16	Látom magam előtt, hogy angolul adok elő egy konferencián.	○	○	○	○	○	○
17	Valószínűnek tartom, hogy angolul fogok publikálni.	○	○	○	○	○	○
18	Elképzelhetőnek tartom, hogy tevékenyen részt veszek angol nyelvű cikk publikálásában.	○	○	○	○	○	○

19	Hiszem, hogy egyszer folyékonyan, szorongás nélkül fogok tudni kommunikálni angolul szakmai közegben.	○	○	○	○	○	○
20	Magabiztos angol szaknyelvhasználóként látom magam a jövőben.	○	○	○	○	○	○
21	Elképzelhetőnek tartom, hogy gond nélkül kommunikálok külföldön angol nyelven szakmabeliekkel.	○	○	○	○	○	○

Ismét azt jelölje be, hogy **mennyire érzi jellemzőnek vagy igaznak saját magára** vonatkoztatva az alábbi állításokat. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

		(+++)	(++)	(+)	(-)	(--)	(---)
22	Azért tanulok/tanultam angol orvosi szaknyelvet, mert mindenkitől azt hallom, hogy manapság ez már elengedhetetlen.	○	○	○	○	○	○
23	Azért járok angol orvosi szaknyelvre, mert a karon hallgatóként elvárják tőlem az angol szaknyelv ismeretét.	○	○	○	○	○	○
24	Azért is tanulom az angol orvosi szaknyelvet, mert csak így vehetem ki a részem a tudományos közösségben folyó munkákból.	○	○	○	○	○	○
25	Azért járok angol orvosi szaknyelvre, mert könnyű jó érdemjegyet szerezni.	○	○	○	○	○	○
26	Azért járok orvosi szaknyelvi angolórára, mert csak ezt tudtam felvenni.	○	○	○	○	○	○

27

Jelölje be, mennyire ért egyet az alábbi állítással: *

Azért is kedvelem az angol orvosi szaknyelvi órákat, mert úgy érzem, az angoltudás mellett további ismeretekre is szert teszek/tettem.

- ◯ Teljes mértékben egyetértek.
- ◯ Nagyrészt egyetértek.
- ◯ Inkább egyetértek.
- ◯ Inkább nem értek egyet.
- ◯ Nagyrészt nem értek egyet.
- ◯ Egyáltalán nem értek egyet.

27.

Kérjük, pár szóban írja le, az angol szaknyelvi tudáson kívül miben fejlődött még, milyen ismeretekkel gazdagodott. *

Saját válasz

Miért **fontos** Önnek az angol orvosi szaknyelv tanulása? Az alábbi állítások esetében jelölje meg, mennyire érzi magára nézve igaznak, jellemzőnek azokat. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

Az állítások minden esetben így kezdődnek:
SZÁMOMRA FONTOS AZ ANGOL ORVOSI SZAKNYELV TANULÁSA/ISMERETE ...

		(+++)	(++)	(+)	(-)	(--)	(---)
28	... mert a tanulásom/TDK/szakdolgozati munkám során használható szakirodalom nagy része angol nyelvű.	◯	◯	◯	◯	◯	◯
29	... a pályafutásom miatt.	◯	◯	◯	◯	◯	◯
30	... mert így válhatok a nemzetközi szakmai (publikációs és tudományos) közösség tagjává.	◯	◯	◯	◯	◯	◯
31	... mert nem szeretném, ha a nyelvtudás hiánya gátolna a tudományos munkában/ ösztöndíjak elnyerésében.	◯	◯	◯	◯	◯	◯
32	... mert nem szeretném, hogy az angol szaknyelvi nyelvismeret hiánya korlátozza majd a jövőbeni lehetőségeimet.	◯	◯	◯	◯	◯	◯
33	... mert nem akarom, hogy később a kollégáim lenézzenek azért, mert nem beszélek angolul vagy nem publikálok angolul.	◯	◯	◯	◯	◯	◯

34	... mert külföldi ösztöndíjra (pl. Erasmus) szeretnék pályázni.	○	○	○	○	○	○
35	... azért is, hogy konferenciákon tudjak előadni.	○	○	○	○	○	○
36	... mert egy elméleti intézet munkatársaként kutatni és/vagy oktatni szeretnék.	○	○	○	○	○	○
37	... mert gyakorló orvosként szerintem szükségem lesz rá.	○	○	○	○	○	○
38	... mert a tudományos életben csak ezzel juthatok előbbre.	○	○	○	○	○	○
39	... mert elképzelhető, hogy egyszer külföldön fogok dolgozni.	○	○	○	○	○	○
40.	... bár én magyar nyelvterületen szeretnék majd dolgozni.	○	○	○	○	○	○

41

Mennyire ért egyet az alábbi állítással: *

Csak azért tanulok/tanultam angol orvosi szaknyelvet, mert (nyelv)vizsgáznom kell(ett) belőle.

	1	2	3	4	5	6	
Teljes mértékben egyetértek.	○	○	○	○	○	○	Egyáltalán nem értek egyet.

42

Mennyire ért egyet az alábbi állítással: *

Csak azért tanulok angol orvosi szaknyelvet, mert a karunkon a diploma megszerzéséhez kötelező az angol orvosi szaknyelv ismerete.

	1	2	3	4	5	6	
Teljes mértékben egyetértek.	○	○	○	○	○	○	Egyáltalán nem értek egyet.

Ismét azt jelölje be, hogy **mennyire érzi jellemzőnek vagy igaznak saját magára** vonatkoztatva az alábbi állításokat. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

	(+++)	(++)	(+)	(-)	(--)	(---)
43 Ha nem tanulnám az angol orvosi szaknyelvet, úgy érzem, kimaradnék valamiből.	○	○	○	○	○	○
44 Zavar, hogy a szaknyelvi angolórán hallgatótársaim jobban beszélnek angolul, mint én.	○	○	○	○	○	○
45 Elég könnyűnek találom az angol orvosi szaknyelv tanulását.	○	○	○	○	○	○
46 Igyekszem kihasználni az angol nyelvű kommunikációra adódó lehetőségeket szaknyelvi közegben is.	○	○	○	○	○	○
47. Tartok attól, hogy hallgatótársaim kinevetnek a szaknyelvi angolórán.	○	○	○	○	○	○
48 Ha nem tanulnék/tanultam volna angol orvosi szaknyelvet, hátrányt szenvednék a hallgatótársaimhoz képest.	○	○	○	○	○	○
49 Szinte természetesnek érzem, hogy angolul tanulni kell, és most a szaknyelven a sor.	○	○	○	○	○	○
50 Az angol orvosi szaknyelv nagyon nehéz számomra.	○	○	○	○	○	○

Jelölje be, hogy **mennyire érzi jellemzőnek vagy igaznak saját magára** vonatkoztatva az alábbi állításokat. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

		(+++)	(++)	(+)	(-)	(--)	(---)
51	Az évfolyamtársaim/csoporttársaim is tanulnak/tanultak angol orvosi szaknyelvet, és nem szeretnék kimaradni.	○	○	○	○	○	○
52	A tanuláshoz felhasználható segédanyagok (videók, ábrák) sokszor angol nyelvűek, és én nem akarok hátrányba kerülni amiatt, hogy nem értem őket.	○	○	○	○	○	○
53	Szeretnék majd orvosi szakfordítóképzésre jelentkezni a diploma megszerzése után.	○	○	○	○	○	○
54	Szívem szerint másik nyelvet tanulnék.	○	○	○	○	○	○
55	Szándékomban áll külföldön tölteni egy kis időt, hogy fejlesszem az angol orvosi szaknyelvi tudásomat.	○	○	○	○	○	○

56 Milyen stratégiákat, eszközöket használ az angol orvosi szaknyelv tanulásakor? *

Saját válasz

Jelölje be, hogy **mennyire érzi jellemzőnek vagy igaznak saját magára** vonatkoztatva az alábbi állításokat. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

		(+++)	(++)	(+)	(-)	(--)	(---)
57	Büszke vagyok az általános angol nyelvtudásomra.	○	○	○	○	○	○
58	Büszke vagyok az eddig megszerzett angol orvosi szaknyelvi nyelvtudásomra.	○	○	○	○	○	○
59	Sokat teszek azért, hogy az angol szaknyelvi tudásomat fejlesszem.	○	○	○	○	○	○

60	Hajlandó vagyok komoly erőfeszítéseket tenni az angol orvosi szaknyelv tanulása érdekében.	○	○	○	○	○	○
61	Keményen dolgozom azon, hogy fejlesszem az angol orvosi szaknyelvi tudásomat.	○	○	○	○	○	○
62	Azt hiszem, mindent megteszek az angol orvosi szaknyelv tanulása érdekében.	○	○	○	○	○	○
63	Ha odateszem magam, könnyen tanulom az angol orvosi szaknyelvet.	○	○	○	○	○	○

Most az angol szaknyelvi órákról szeretnénk kérdezni. Jelölje be, hogy **mennyire érzi jellemzőnek vagy igaznak saját magára** vonatkoztatva az alábbi állításokat. *

Teljes mértékben igaz rám. (+++)
Nagyrészt igaz rám. (++)
Inkább igaz rám. (+)
Inkább nem igaz rám. (-)
Nagyrészt nem igaz rám. (--)
Egyáltalán nem igaz rám. (---)

		(+++)	(++)	(+)	(-)	(–)	(—)
64	Szeret(t)em, ha aktívan részt tudok venni a szaknyelvi órán, és sokat beszélhetek.	○	○	○	○	○	○
65	Kifejezetten szorongok a szaknyelvi angolórákon.	○	○	○	○	○	○
66	Kifejezetten élvez(t)em a szaknyelvi angolórákat.	○	○	○	○	○	○
67	Nem szívesen szólalok meg az angol szaknyelvi órán.	○	○	○	○	○	○

68	A szaknyelvi angolórák felüdülést jelentenek/jelentettek nekem a szakmai tárgyak tanulása mellett.	○	○	○	○	○	○
69	Kedvel(t)em az angol orvosi szaknyelvi órákat, mert orvosszakmai témákat érintünk.	○	○	○	○	○	○
70	Közelebb áll hozzám az angol orvosi szaknyelv, mint az általános angol.	○	○	○	○	○	○
71	Tartok attól, hogy a szaknyelvtanár kigúnyol a szaknyelvi angolórán.	○	○	○	○	○	○
72	Az angol szaknyelvi órán csak akkor mondok ki egy mondatot, ha biztos vagyok benne, hogy helyes a nyelvtan.	○	○	○	○	○	○
73	Az angol szaknyelvi órákon zavar, hogy magyarosnak hallom a kiejtésem.	○	○	○	○	○	○
74	Az angol szaknyelvi oktató személye, személyisége meghatározó számomra.	○	○	○	○	○	○

75

Motiváló tényezők

Önt mi motiválja leginkább az angol orvosi szaknyelv tanulásában? Válassza ki/nevezze meg a **HÁROM** legfontosabbat. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az „Egyéb" válaszlehetőségnél. *

- [ ] sikerélmény
- [ ] személyes érdeklődés
- [ ] tanár-hallgató kapcsolat
- [ ] közösség (társak, intézmény felől megfogalmazott elvárások)
- [ ] hosszú távú (karrier) célok
- [ ] tanár személyisége
- [ ] tanár szaknyelvi tudása
- [ ] innovatív módszerek alkalmazása
- [ ] családi háttér
- [ ] tanár orvosszakmai tudása
- [ ] Egyéb: _____

76

Demotiváló tényezők

Mi veszi el a kedvét leginkább az angol orvosi szaknyelv tanulásától? Jelölje be a **HÁROM** legfontosabbat. Nyugodtan nevezzen meg egyéb faktorokat az Egyéb lehetőségnél, ha nem találja a listában az Önnek legfontosabbnak tartott tényezőket. *

- [ ] sikertelenség érzése
- [ ] nyelvtanulói szégyenlősség/szorongás
- [ ] tanár-hallgató kapcsolat
- [ ] hallgatótársak közömbössége
- [ ] magas csoportlétszám
- [ ] leterheltség
- [ ] technikai eszközök hiánya
- [ ] tananyag, tankönyv nem megfelelő volta
- [ ] túlzó tanári szigor
- [ ] folyamatos tanári elégedetlenség
- [ ] visszajelzés hiánya
- [ ] Egyéb: _____

77

Következzenek az utolsó kérdések :)

Milyen elvárásai vannak az angol orvosi szaknyelvet oktató tanárokkal kapcsolatosan? Kérjük, néhány szóban válaszoljon! *

Saját válasz

78

Ha a fenti kérdések megválaszolását követően, még van olyan körülmény, olyan pontosítani való részlet az angol orvosi szaknyelv oktatása vagy tanulása kapcsán, amelyet fontosnak gondol megosztani vagy valamilyen javaslata van, kérjük, az alábbiakban fejtse ki:

Saját válasz

79

Amennyiben érdekli vizsgálatunk eredménye, írjon nekem erre a címre:

Stötzer Andrea

stötzer.andrea.maria@med.u-szeged.hu; vagy itt jelezheti, e-mail-címének megadásával:

Saját válasz

80

Ha megengedi, hogy a témában egy rövid interjú készüljön Önnel a közeljövőben, kérem, írjon nekem erre a címre:

Stötzer Andrea

stötzer.andrea.maria@med.u-szeged.hu; vagy itt jelezheti, e-mail-címének megadásával:

Saját válasz

„NEM” válasz a 2. kérdésre

81

Vizsgálatunkban azt szeretnénk megismerni, milyen motivációval tanulnak angol orvosi szaknyelvet a hallgatók, és ebben kérjük a segítségét. Ha eddig még nem tanult angol orvosi szaknyelvet, akkor is kíváncsiak vagyunk a véleményére. A kérdőív kitöltése kb. 5 percet vesz igénybe. *

Mi az oka, hogy eddig nem vett fel angol orvosi szaknyelvi órát?

- ◯ nem tartom fontosnak
- ◯ fontosnak tartom, de eddig nem sikerült ilyen órát felvennem
- ◯ német orvosi szaknyelvet tanulok
- ◯ Egyéb:

81.a

"nem tartom fontosnak" válaszlehetőség megjelölése esetén

Kérjük, írja le pár szóban, miért nem? *

Saját válasz

81.

"fontosnak tartom, de eddig még nem sikerült ilyen órát felvenni" válaszlehetőség megjelölése esetén

Kérjük, írja le pár szóban, mi volt az oka? *

Saját válasz

81.

"német orvosi szaknyelvet tanulok" válaszlehetőség megjelölése esetén

A német orvosi szaknyelv mellett úgy gondolja, hogy nem lesz szüksége az angol orvosi szaknyelv ismeretére? Kérjük, válaszát indokolja egy pár szóban. *

Saját válasz

81.

"egyéb" válaszlehetőség megjelölése esetén

Választását, kérjük, indokolja pár szóban: *

Saját válasz

Demográfiai adatok

82

Biológiai neme *

- nő
- férfi

83

Anyanyelve *

- magyar
- szerb
- horvát
- szlovén
- román
- német
- ukrán
- szlovák
- Egyéb: _____

84

Első beszélt idegen nyelve *

- angol
- német
- Egyéb: _____

85

Második beszélt idegen nyelve *

- angol
- német
- Egyéb: _____

86

Rendelkezik nyelvvizsgával bármilyen nyelvből? *

- Igen
- Nem

87

Nyelvvizsgák

Milyen nyelvekből van nyelvvizsgája és milyen szintű. Több válasz is lehetséges.

	alapfok	középfok	felsőfok
angol	☐	☐	☐
német	☐	☐	☐
spanyol	☐	☐	☐
francia	☐	☐	☐
olasz	☐	☐	☐
orosz	☐	☐	☐
egyéb	☐	☐	☐

88

Ha a fenti táblázatban az "egyéb" válaszlehetőséget (is) megjelölte, kérjük, írja ide milyen nyelvvizsgával rendelkezik.

Saját válasz

89

Melyik egyetemre jár? *

- ○ Debreceni Egyetem Általános Orvostudományi Kar
- ○ Pécsi Tudományegyetem Általános Orvostudományi Kar
- ○ Semmelweis Egyetem
- ○ Szegedi Tudományegyetem Szent-Györgyi Albert Orvostudományi Kar

90

Melyik évfolyamra jár? *

- ○ Elsőéves vagyok.
- ○ Másodéves vagyok.
- ○ Harmadéves vagyok.
- ○ Negyedéves vagyok.
- ○ Ötödéves vagyok.
- ○ Hatodéves vagyok.
- ○ Egyéb: _____

91

Köszönet

Köszönjük, hogy válaszolt a kérdésekre. Szép napot kívánunk!

A kutatáshoz kötődő kérdéseikkel, észrevételeikkel, visszajelzésekkel kapcsolatosan az alábbi elérhetőségen állok rendelkezésre:

Stötzer Andrea: stotzer.andrea.maria@med.u-szeged.hu

Ne felejtsen a küldés gombra kattintani!

APPENDIX C

English translation of the Student EMP Motivation Questionnaire

For the original, Hungarian version, see Appendix B. The item numbering is identical in both versions. Items marked with an asterisk (*) were mandatory and had to be completed in order to proceed with the questionnaire. The questionnaire is structured to branch at the point where respondents indicate whether they have studied English for Medical Purposes (EMP) at university (Question 2). Respondents who answered "yes" proceeded to the motivation-related section (Questions 3–80), whereas those who answered "no" were presented with a single item probing their reasons (Question 81). The demographic questions (Questions 82–91) were identical for both groups.

	Questionnaire items	Response options
	Introduction Dear Student, Our research aims to explore the motivation behind students' decision to learn English for Medical Purposes (EMP), and we kindly ask for your support. Completing the questionnaire will take approximately 15–20 minutes. If you have not studied English for Medical Purposes before, we are still very interested in your opinion — in this case, filling in the questionnaire will take no more than 5 minutes. By sharing your responses, you will help EMP instructors better understand students' needs and expectations, which can contribute to the development of courses that are more aligned with your interests and real-life demands. The questionnaire will remain open until 11 May 2024. Thank you for your cooperation! If you have any comments, suggestions, or questions regarding the study, please feel free to contact us at: Contact information of the researchers.	
1	**Informed consent*** Participation in this study is anonymous and does not require any personal identifying data. Data collection is conducted exclusively for scientific purposes. Your responses will be accessible only to the research team and will not be available to any external or third parties. Participation in the study is entirely voluntary. You may discontinue completing the questionnaire at any time. By completing the questionnaire, you consent to your responses being used in aggregated form for scientific analysis and publication. Consent I am over 18 years old, and I consent to participate in the research investigating Hungarian medical students' motivation to learn EMP. I acknowledge that the research will use my data for scientific purposes while respecting anonymity and personal rights. I declare that I have received information about the questionnaire and I agree to participate in the study.	o Yes o No
2	Have you ever taken a course in EMP during your studies?*[14]	o Yes o No
3	In how many semesters have you taken a course in EMP so far? (If you are currently taking one, please include it in your count.)*	Drop-down menu with numbers from 1 to 12

[14] The questionnaire is structured to branch at this point. Respondents who answered "yes" proceeded to the motivation-related section (Questions 3–80), whereas those who answered "no" were presented with a single item probing their reasons (Question 81). The demographic questionnaire items (Questions 82–91) were identical for both groups.

	Questionnaire items for YES responders	Response options
	To what extent do you agree with the following statements?*[15]	
4	I believe that within the medical professional community, only those with English language skills can succeed.	○ Strongly agree ○ Mostly agree ○ Somewhat agree ○ Somewhat disagree ○ Mostly disagree ○ Strongly disagree
5	I believe that knowing EMP will give me more opportunities to find a suitable job.	
6	I believe I can be an excellent professional in Hungary even without foreign language skills.	
7	I think I have a good aptitude for English.	
8	I believe I can make myself understood in any everyday situation in English.	
9	I think I could make myself understood in any professional (medical) situation in English.	
10	I think it would be useful if every medical student were required to learn EMP.	
11	In my opinion, it would be enough to focus on general English skills at university; one can learn EMP later on.	
12	I believe that EMP is just Latin words that need to be pronounced in English.	
	In the following section, please indicate how characteristic or true each statement is of you personally.*	
13	I will probably continue to improve my EMP even after I graduate.	○ Completely true of me ○ Mostly true of me ○ Somewhat true of me ○ Somewhat untrue of me ○ Mostly untrue of me ○ Completely untrue of me
14	In my view, knowing EMP will be expected of me in my profession in the future.	
15	I can imagine myself communicating effortlessly with patients in English abroad.	
16	I can picture myself giving a presentation in English at a conference.	
17	I think it is likely that I will publish in English.	
18	I can see myself actively contributing to the publication of an article in English.	
19	I believe that one day I will be able to communicate fluently and without anxiety in English in a professional setting.	
20	I see myself as a confident user of EMP in the future.	
21	I can imagine myself communicating effortlessly in English with colleagues abroad.	
22	I am studying EMP because everyone says it is essential these days.	
23	I attend EMP classes because, as a student in this medical school, I am expected to know EMP.	
24	I am also studying EMP because it is the only way I can participate in the work of the scientific community.	
25	I attend EMP classes because it is easy to get a good grade.	
26	I am attending EMP classes because it was the only option I could take.	
	To what extent do you agree with the following statements?*	
27	I also enjoy EMP classes because I feel that, in addition to improving my English, I am gaining additional knowledge.	○ Strongly agree ○ Mostly agree ○ Somewhat agree ○ Somewhat disagree ○ Mostly disagree ○ Strongly disagree
27.a	*(This item was displayed only if the respondent selected a positive response to the previous question.)* Please briefly describe in what ways you have developed or what kinds of knowledge you have gained beyond improving your English for medical purposes.*	Free-text response

[15] Participants were reminded before each item set that there are no "right" or "wrong" answers and were encouraged to respond honestly.

	Questionnaire items for YES responders	Response options
	In your opinion, why is learning English for Medical Purposes important? Please indicate how characteristic or true each statement is of you personally.*	
28	For me, knowing EMP is primarily important because most of the literature I can use for my studies/research/thesis is in English.	o Completely true of me o Mostly true of me o Somewhat true of me o Somewhat untrue of me o Mostly untrue of me o Completely untrue of me
29	Learning EMP is important to me for my career.	
30	Knowing EMP is important to me because it allows me to become a part of the international professional (publishing and scientific) community.	
31	Knowing EMP is important to me because I do not want a lack of language skills to hold me back in scientific work or applying for scholarships.	
32	EMP is important to me because I do not want the lack of it to limit my future opportunities.	
33	Knowing EMP is important to me because I do not want my colleagues to look down on me in the future for not speaking English or not publishing in English.	
34	Knowing EMP is important to me because I would like to apply for a scholarship abroad (e.g., Erasmus).	
35	EMP is important to me so that I can present at conferences.	
36	EMP is important to me because I would like to work in a preclinical department, doing research and/or teaching.	
37	Knowing EMP is essential to me because I think I will need it as a practicing doctor.	
38	EMP is important to me because it is the only way to advance in the scientific field.	
39	EMP is important to me because there is a chance I will work abroad one day.	
40	EMP is important to me, although I plan to work in Hungary.	
	To what extent do you agree with the following statements?*	
41	I only study(ed) EMP because I need(ed) to take a language exam.	o Strongly agree o Mostly agree o Somewhat agree o Somewhat disagree o Mostly disagree o Strongly disagree
42	I am only studying EMP because it is required by my medical school for graduation.	
	Please indicate how characteristic or true each statement is of you personally.*	
43	If I were not studying EMP, I would feel like I am missing out on something.	o Completely true of me o Mostly true of me o Somewhat true of me o Somewhat untrue of me o Mostly untrue of me o Completely untrue of me
44	It bothers me that my classmates speak English better than I do in EMP class.	
45	I find learning EMP fairly easy.	
46	I try to take advantage of opportunities to communicate in English.	
47	I am afraid my classmates will laugh at me in the EMP class.	
48	If I had not studied EMP, I would be at a disadvantage compared to my classmates.	
49	It almost feels natural to me that learning English is necessary, and now it's time to learn EMP.	
50	EMP is very difficult for me.	
51	My peers/classmates are also studying EMP, and I do not want to be left out.	
52	Many study resources, like videos and diagrams, are in English, and I do not want to be at a disadvantage by not understanding them.	
53	After graduating, I would like to apply for a medical translator training programme.	
54	I would prefer to learn a different language.	
55	I intend to spend some time abroad to improve my EMP skills.	
56	What strategies or tools do you use when learning EMP?*	Free-text response

	Questionnaire items for YES responders	Response options
	In the following section, please indicate how characteristic or true each statement is of you personally.*	
57	I am proud of my general English skills.	o Completely true of me o Mostly true of me o Somewhat true of me o Somewhat untrue of me o Mostly untrue of me o Completely untrue of me
58	I am proud of the EMP skills I have acquired so far.	
59	I put in a lot of effort to improve my EMP skills.	
60	I am willing to make a serious effort to learn EMP.	
61	I work hard to improve my EMP skills.	
62	I believe I am doing everything I can to learn EMP.	
63	If I make an effort, I learn EMP easily.	
	The following questions refer to your EMP classes. Please answer them based on your experiences.*	
64	I enjoy(ed) being able to actively participate in EMP classes and speak a lot.	
65	I feel especially anxious in EMP classes.	
66	I especially enjoy(ed) EMP classes.	
67	I am reluctant to speak up in EMP classes.	
68	The EMP classes provide(d) a refreshing break from studying other professional subjects.	
69	I like the EMP classes because we cover topics related to the medical field.	
70	I prefer learning EMP to general English.	
71	I am worried that the EMP teacher will make fun of me in class.	
72	In EMP class, I only speak up if I'm sure the grammar is correct.	
73	In EMP class, it bothers me when I hear my pronunciation sound too Hungarian ('Hunglish').	
74	The personality of the EMP teacher is important to me.	
	What motivates you the most in learning EMP?*	
75	Please select/name the THREE most important factors. If something is missing from the list, please indicate it under "Other." □ sense of achievement □ personal interest □ teacher–student relationship □ community (expectations of peers and or institution) □ career goals □ EMP teacher's personality □ teacher's EMP knowledge □ innovative methods □ family background □ EMP teacher's discipline-related content knowledge □ other	Forced-choice, top three selection
	What discourages you the most from learning EMP?*	
76	Please select the THREE most important factors. Feel free to list additional factors under "Other" if your top concerns are not included below. □ feeling of failure □ language learning shyness/anxiety □ teacher–student relationship □ lack of engagement from fellow students □ large group size □ demanding schedule □ lack of technical equipment □ inappropriate teaching materials or textbooks □ excessive teacher strictness □ constant teacher dissatisfaction □ lack of feedback □ other	Forced-choice, top three selection
77	What expectations do you have regarding EMP teachers?*	Free-text response

	Questionnaire items for YES responders	Response options
78	If, after answering the above questions, there is any additional circumstance or detail you would like to clarify regarding the teaching or learning of EMP, or if you have any suggestions or comments you consider important, please describe them below:	Free-text response
79	If you would like to receive the results of our study, please write to me at the following address: *(contact information provided)* Alternatively, you may indicate your interest here by providing your email address.	Free-text response
80	If you are open to participating in a short follow-up interview on this topic in the near future, please contact me at the following address: *(contact information provided)* Alternatively, you may indicate your interest here by providing your email address.	Free-text response
	Questionnaire items for NO responders	**Response options**
81	We aim to explore the motivations behind students' decisions to learn EMP, and we would appreciate your input. If you have not yet taken any EMP courses, we are still interested in your perspective. Completing this part of the questionnaire takes approximately 5 minutes. What is the reason you have not taken an EMP course so far?*	o I don't consider it important o I do consider it important, but I haven't had the opportunity to take such a course o I am studying German for Medical Purposes instead o Other
81.a	*(If "I don't consider it important" was selected)* Please explain briefly why you don't consider it important.*	Free-text response
81.b	*(If "I consider it important, but haven't had the opportunity to take such a course" was selected)* Please explain briefly why this was the case.*	Free-text response
81.c	*(If "I am studying German for Medical Purposes" was selected)* Do you believe that, alongside studying medical German, you won't need EMP? Please explain your answer briefly.*	Free-text response
81.d	*(If "Other" was selected)* Please briefly explain your choice.*	Free-text response
	Demographic questionnaire items for YES and NO responders	**Response options**
82	Gender*	o Male o Female
83	Mother tongue*	Hungarian, Serbian […] or specify another language
84	First L2*	English, German or specify another language
85	Second L2*	English, German or specify another language
86	Do you have an officially recognized language exam in any language?*	o Yes o No
87	Which languages do you have a language exam in, and at what level?	Tick-box grid allowing multiple selections for reporting language exam(s) across multiple languages and proficiency levels. An "Other" category was also provided to allow for additional fields or languages not listed
88	If you selected "Other" in the table above, please specify which language(s) and what type of exam you hold.	Free-text response

	Demographic questionnaire items for YES and NO responders	Response options
89	Which university do you attend?*	o Faculty of Medicine, University of Debrecen o Medical School, University of Pécs o Semmelweis University o Albert Szent-Györgyi Medical School, University of Szeged
90	What year of study are you in?*	o first year o second year o third year o fourth year o fifth year o sixth year o other:
91	Thank you message and contact information	n/a

APPENDIX D

Hungarian version of the LSP Questionnaire

This appendix contains the original Hungarian version of the LSP questionnaire, as it appeared in the Google Forms platform used for data collection. To preserve the authenticity of the instrument, the format presented here reflects the version that was actually seen and completed by the respondents. For the English translation of the questionnaire, see Appendix E. The item numbering is consistent across the English and Hungarian versions of the questionnaire. Items marked with an asterisk (*) were mandatory and had to be completed in order to proceed with the questionnaire.

Szaknyelvtanári kérdőív

Kedves Kolléga!

Köszönöm, hogy időt szán a kérdőív kitöltésére, amely kb. 15–20 percet vesz igénybe. A Szegedi Tudományegyetem Neveléstudományi Doktori Iskolájában készülő kutatásunkban (témavezetőm Dr. Farkas Éva) a magyarországi szaknyelvtanárok motiváltsági állapotáról és motiválási gyakorlatáról szeretnénk helyzetképet kapni. Gyakorló szaknyelvtanárként, egyetemi oktatóként tisztában vagyok vele, hogy hozzám hasonlóan, a szaknyelvtanárként dolgozó kollégáim feladatai is szerteágazóak, most viszont azt szeretnénk kérni, hogy **SZAKNYELVTANÁRI** minőségében, a szaknyelvi óráit alapul véve válaszoljon a kérdésekre.
Köszönjük!

A kutatáshoz kötődő kérdéseikkel, észrevételeikkel, visszajelzésekkel kapcsolatosan az alábbi elérhetőségen állunk rendelkezésre:

Stötzer Andrea: stotzer.andrea.maria@med.u-szeged.hu

Dr. Farkas Éva: farkaseva9@gmail.com

A kérdőív kitöltésére 2024. április 11-ig van lehetőség.

1.

Hozzájárulás *

Elmúltam 18 éves, hozzájárulok, hogy az Szegedi Tudományegyetem Neveléstudományi Doktori Iskolájában történő kutatásában részt vegyek. Tudomásul vettem, hogy a kutatás az anonimitás és személyiségi jogok tiszteletben tartásával, kutatási célra használja fel adataimat. Kijelentem, hogy a kutatásban való részvételem önkéntes.

- ◯ Igen
- ◯ Nem

Hozzájárulás utáni kérdések

2.

Biológiai neme? *

- ◯ Nő
- ◯ Férfi

3.

Hány éves? *

Kiválasztás ▾

4.

Anyanyelve: *

- ◯ magyar
- ◯ Egyéb: _____

5.

Első idegen nyelve: *

- ◯ angol
- ◯ német
- ◯ francia
- ◯ olasz
- ◯ Egyéb: _____

6.

7.

Melyik szakterület specifikus nyelvét oktatja? Milyen nyelve(ke)n? Jelölje a táblázatban.

	angol	német	magyar	egyéb
agrár- és környezettudományi	☐	☐	☐	☐
diplomáciai	☐	☐	☐	☐
egyházi	☐	☐	☐	☐
gazdálkodási menedzsment	☐	☐	☐	☐
gazdasági	☐	☐	☐	☐
idegenforgalmi-vendéglátóipari	☐	☐	☐	☐
jogi és közigazgatási	☐	☐	☐	☐
katonai	☐	☐	☐	☐
közigazgatási	☐	☐	☐	☐
műszaki	☐	☐	☐	☐
orvosi/egészségtudományi	☐	☐	☐	☐
rendészeti	☐	☐	☐	☐
üzleti	☐	☐	☐	☐
egyéb	☐	☐	☐	☐

Ha a fentebbi táblázatban az „egyéb" lehetőséget választotta, kérjük, itt adja meg milyen szaknyelvet tanít és milyen nyelven. *
Ha nem az „egyéb" lehetőséget jelölte meg, csak tegyen a mezőbe egy N betűt.

Saját válasz

8.

Milyen oktatási intézmény(ek)ben tanít szaknyelvet?

- [ ] Andrássy Gyula Budapesti Német Nyelvű Egyetem
- [ ] Budapest Cirkuszművészeti és Kortárstánc Főiskola
- [ ] Budapesti Gazdasági Egyetem
- [ ] Budapesti Metropolitan Egyetem
- [ ] Budapesti Műszaki és Gazdaságtudományi Egyetem
- [ ] Debreceni Egyetem
- [ ] Dunaújvárosi Egyetem
- [ ] Edutus Egyetem
- [ ] Eötvös Loránd Tudományegyetem
- [ ] Eszterházy Károly Katolikus Egyetem
- [ ] Evangélikus Hittudományi Egyetem
- [ ] Gábor Dénes Egyetem
- [ ] Gál Ferenc Egyetem
- [ ] IBS Nemzetközi Üzleti Főiskola
- [ ] Kodolányi János Egyetem
- [ ] Magyar Agrár- és Élettudományi Egyetem
- [ ] Magyar Képzőművészeti Egyetem
- [ ] Magyar Testnevelési és Sporttudományi Egyetem
- [ ] Milton Friedman Egyetem
- [ ] Miskolci Egyetem
- [ ] Neumann János Egyetem
- [ ] Nyíregyházi Egyetem
- [ ] Óbudai Egyetem
- [ ] Pannon Egyetem
- [ ] Pázmány Péter Katolikus Egyetem

8. folyt.

- [ ] Pécsi Püspöki Hittudományi Főiskola
- [ ] Pécsi Tudományegyetem
- [ ] Semmelweis Egyetem
- [ ] Soproni Egyetem
- [ ] Széchenyi István Egyetem
- [ ] Szegedi Tudományegyetem
- [ ] Tokaj-Hegyalja Egyetem
- [ ] Tomori Pál Főiskola
- [ ] Veszprémi Érseki Főiskola
- [ ] Wekerle Sándor Üzleti Főiskola
- [ ] Wesley János Lelkészképző Főiskola
- [ ] Egyéb: _____

9.

Van pedagógus végzettsége? *

- ◯ Igen
- ◯ Nem

10.

Van szakterületi végzettsége azon a szakterületen, amelynek a szaknyelvét oktatja? *

- ◯ Igen
- ◯ Nem

11.

Igen válasz esetén

Ha „igennel" válaszolt az előző kérdésre, akkor kérjük, nevezze meg, milyen szakterületi végzettséggel rendelkezik: *

Saját válasz

További kérdések

12.

Van tudományos fokozata? *

- ◯ Igen
- ◯ Még nincs, PhD-tanulmányokat folytatok.
- ◯ Nincs

13.

Hány éve tanít szaknyelvet? *

Kiválasztás

14.

Hogyan lett szaknyelvi oktató, hogyan lépett a pályára? Saját döntése, választása alapján vagy az „élet úgy hozta" vagy „kényszerből" kezdett szaknyelvet tanítani? *

Saját válasz

15.

Milyen formális és nem formális képzés(ek)ben részesült, mi segítette abban, hogy jelenlegi, szaknyelvtanári feladatát ellássa? *

Saját válasz

16.

A **TUDÁST és KÉPESSÉGET** leíró mely **kompetenciaelemeket** tartja nélkülözhetetlennek az eredményes szaknyelvtanári munkához? *
Válasszon ki az alábbiak közül **NÉGY kompetenciaelemet**, amelyekről úgy gondolja, hogy **NÉLKÜLÖZHETETLENEK**. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az „Egyéb" válaszlehetőségnél.

- [ ] a tananyag differenciálásának képessége a hallgatók nyelvi szintének megfelelően
- [ ] a szaknyelvtanításhoz szükséges/alkalmazható kutatási módszerek alkalmazásának képessége (pl. szükségletelemzés végzése)
- [ ] digitális eszközök tanításra és ismeretszerzésre történő alkalmazásának képessége
- [ ] együttműködésre való képesség, kooperativitás
- [ ] felnőtt nyelvtanulókra jellemző tanulás ismerete
- [ ] hallgatókkal a közös hang megtalálásának képessége
- [ ] képesség arra, hogy szakmai segítséget kérjünk, és azt elfogadjuk
- [ ] problémamegoldó képesség
- [ ] tanítási/tanításmódszertani ismeretek
- [ ] stabil, folyamatosan fenntartott/fejlesztett nyelvtudás (főleg a szaknyelv és tudományos nyelv vonatkozásában)
- [ ] szakmai/szakterületi anyagok tananyaggá formálásának a képessége
- [ ] szakterületi tudás (annak a szakmának az ismerete, amelynek a szaknyelvét tanítja)
- [ ] szakterületi tudás önálló elsajátításának képessége
- [ ] visszajelzések elfogadásának képessége, reflektivitás
- [ ] Egyéb: _____

17.

Mely **ATTITŰDÖKET, SZEMÉLYISÉGJEGYEKET** tartja nélkülözhetetlennek az eredményes szaknyelvtanári munkához? *
Válasszon ki az alábbiak közül **HÁROM jellemzőt**, amelyekről úgy gondolja, hogy **NÉLKÜLÖZHETETLENEK**. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az „Egyéb" válaszlehetőségnél.

- [ ] állandó motiváció a szakterületi tudásanyag megértésére
- [ ] autonómia
- [ ] egészséges önbizalom
- [ ] hallgatói igények figyelembevétele
- [ ] nyitottság az újra/kísérletezőkedv
- [ ] reziliencia
- [ ] rugalmasság
- [ ] szakmai alázat
- [ ] szakterület iránti érdeklődés
- [ ] szorgalom, kitartás
- [ ] tolerancia
- [ ] továbbképzésre való igény
- [ ] türelem (önmagunk hiányosságainak elfogadásához és a hallgatók felé)
- [ ] Egyéb: _____

18.

Ha van összehasonlítási alapja az általános nyelv (angolosok esetében *English as a Foreign Language* vagy *English for General Purposes*) és az angol szaknyelv (English for Specific Purposes) tanítása között: mit lát a a legfontosabb különbségnek? *

Saját válasz

19.

A szaknyelvtanárok számos kihívással, nehézséggel szembesülnek. Mennyire ért egyet az alábbi táblázatban felsorolt állításokkal? *

	Teljes mértékben egyetértek.	Inkább egyetértek.	Nem tudom.	Inkább nem értek egyet.	Egyáltalán nem értek egyet.
Előfordul, hogy a hallgatók jobban ismerik a „szakmát" a szakmai hátteret, mint én.	◯	◯	◯	◯	◯
Frusztrál, ha azzal szembesülök, hogy a hallgatók jobban ismerik a „szakmát" a szakmai hátteret, mint én.	◯	◯	◯	◯	◯
A tananyagfejlesztés / kurzusfejlesztés is az én feladatom.	◯	◯	◯	◯	◯
Az adott szakterület megismerése és az ismeretek naprakészen tartása állandó önképzést kíván tőlem.	◯	◯	◯	◯	◯
Kevés formális lehetőségem van a szakterületi tudás megszerzésére.	◯	◯	◯	◯	◯
Korlátozottak a lehetőségeim a szakterületen történő „továbbképződésre".	◯	◯	◯	◯	◯

19. folyt.

Korlátozottak a lehetőségeim a nyelvi "továbbképződésre".	○	○	○	○	○
Úgy érzem, az intézményünk nem igazán támogatja a hallgatók szaknyelvtanulását.	○	○	○	○	○
Azt tapasztalom, hogy a hallgatói nyelvtudás alacsony szintje akadályozza a hatékony szaknyelvi oktatást.	○	○	○	○	○
Nincs lehetőségem a szakmai tárgyakat oktató kollégákkal együttműködni.	○	○	○	○	○
Több időre lenne szükségem a szaknyelvi órákra való felkészüléshez.	○	○	○	○	○

20.

Szaknyelvtanári munkája során mit érez a legnagyobb nehézségnek vagy kihívásnak? *

Saját válasz

21.

Mit gondol, mely tényezők segítik elő leginkább a hallgatók **szaknyelvtanulási** motiváltságát? Válassza ki/nevezze meg a **HÁROM** legfontosabbat. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az „Egyéb" válaszlehetőségnél. *

- ☐ sikerélmény
- ☐ személyes érdeklődés
- ☐ tanár–hallgató kapcsolat
- ☐ közösség (társak, intézmény felől megfogalmazott elvárások)
- ☐ hosszú távú (karrier) célok
- ☐ tanár személyisége
- ☐ tanár szaknyelvi tudása
- ☐ innovatív módszerek alkalmazása
- ☐ családi háttér
- ☐ tanár szakmai/szakterületi tudása
- ☐ Egyéb: _____

22.

Mit gondol, milyen tényezők akadályozzák leginkább a hallgatók motiváltságát? * Válassza ki/nevezze meg a **HÁROM** legfontosabbat. Ha valamit hiányol a felsorolásból, kérjük, tüntesse fel az „Egyéb" válaszlehetőségnél.

- [ ] sikertelenség érzése
- [ ] nyelvtanulói szégyenlősség/szorongás
- [ ] tanár–hallgató kapcsolat
- [ ] hallgatótársak közömbössége
- [ ] magas csoportlétszám
- [ ] leterheltség
- [ ] technikai eszközök hiánya
- [ ] tananyag, tankönyv nem megfelelő volta
- [ ] túlzó tanári szigor
- [ ] folyamatos tanári elégedetlenség
- [ ] visszajelzés hiánya
- [ ] Egyéb: _____

23.

Szaknyelvi tanárként mennyiben érzi feladatának/felelősségének a hallgatók motiválását? *

- ◯ Teljes mértékben.
- ◯ Némileg.
- ◯ Egyáltalán nem.

24.

A szaknyelvi oktató hogyan tudja motiválni a hallgatókat? Tapasztalatai alapján minek van pozitív hatása a leginkább? Válassza ki a **NÉGY legfontosabbat.** Ha a felsoroltakon kívül más tényezőknek tulajdonít jelentőséget, kérjük, nevezze meg azokat az „Egyéb" opcióban (többet is feltüntethet). *

- [ ] aktuális témák, autentikus tananyagok feldolgozása
- [ ] egyértelmű követelmények megfogalmazása
- [ ] gamifikáció alkalmazása
- [ ] hallgatói igények figyelembevétele
- [ ] hallgatói igények megismerése
- [ ] innovatív módszerek alkalmazása
- [ ] jó hangulatú órákra törekvés, humor
- [ ] jó tanár–hallgatói kapcsolatra törekvés
- [ ] jutalmazás, dicséret alkalmazása
- [ ] kihívást jelentő feladatok adása
- [ ] kis létszámú csoport kialakítása
- [ ] következetesség alkalmazása
- [ ] nyelvtanulói különbségek figyelembevétele
- [ ] nyelvtanulói szorongás csökkentésére törekvés
- [ ] tanári példamutatás
- [ ] tanár módszertani felkészültsége
- [ ] tanár szakmai/szakterületi felkészültsége
- [ ] tanár személyes érdeklődést mutat az oktatott szaknyelv/szakma iránt
- [ ] tanár személyisége
- [ ] Egyéb: _____

25.

Van-e bármilyen további megjegyzése, meglátása ezzel a kérdéssel kapcsolatban?

Saját válasz

26.

Van-e olyan körülmény, ami miatt az Ön szaknyelvi tantárgya motiváció szempontjából eltér a többi tantárgytól (akár szakterületen belül, pl. szakmai tárgyak kontra szaknyelvi angol/német stb. vagy más szaknyelvi területek angol/német stb. nyelvével összehasonlítva?) *

Saját válasz

27.

Mennyire ért egyet az állítással, miszerint a motivált hallgatók előfeltétele a kellően motivált tanár? *

- ◯ Teljes mértékben egyetértek.
- ◯ Inkább egyetértek.
- ◯ Nem tudom.
- ◯ Inkább nem értek egyet.
- ◯ Egyáltalán nem értek egyet.

28.

Önt személy szerint mi motiválja szaknyelvtanárként? *

Saját válasz

29.

Ön szaknyelvtanárként definiálja magát vagy alapvetően más élvez prioritást (pl. kutatóként, egyetemi oktatóként stb. mutatkozik be). Szaknyelvtanári identitását helyezi előtérbe? Ha nem, akkor mit? *

Saját válasz

30.

Alkalmazza a TEA (tanulási eredmény alapú, azaz hallgatóközpontú) szemléletet? *

- ◯ Igen, alkalmazom.
- ◯ Hallottam róla, de nem alkalmazom.
- ◯ Nem alkalmazom.
- ◯ Nem tudom, mi az.

31.

Mennyire érzi, hogy megbecsülik a munkáját? *

	Egyáltalán nem	Némileg	Teljes mértékben
Mennyire érzi, hogy a hallgatók megbecsülik, értékelik a munkáját?	◯	◯	◯
Mennyire érzi, hogy közvetlen munkahelyi környezete/munkatársai megbecsülik, értékelik a munkáját?	◯	◯	◯
Mennyire érzi, hogy az intézménye megbecsüli, értékeli a munkáját?	◯	◯	◯

32.

Van-e bármi, amit még hozzátenne, ami az eszébe jutott a kérdőív kitöltése során, amit még megosztana, vagy amivel még kiegészíténé a válaszait?

Saját válasz

33.

Ha beleegyezik, hogy rövid interjút készítsek Önnel a szaknyelvtanári munkájáról, kérem, adja meg az e-mail-címét.

Saját válasz

34.

Ha szeretne visszajelzést kapni a kutatás kimeneteléről, e-mail-címének megadásával itt jelezheti:

Saját válasz

35.

Köszönet

Köszönjük, hogy válaszolt a kérdésekre. Szép napot kívánunk!

A kutatáshoz kötődő kérdéseikkel, észrevételeikkel, visszajelzésekkel kapcsolatosan az alábbi elérhetőségen állunk rendelkezésre:

Stötzer Andrea: stotzer.andrea.maria@med.u-szeged.hu

APPENDIX E

Questionnaire for LSP teachers in Hungary

This is the English translation of the original Hungarian version of the questionnaire. For the original Hungarian version, see Appendix D. The item numbering is identical in both versions. Items marked with an asterisk (*) were mandatory and had to be completed in order to proceed with the questionnaire.

	Questionnaire items	Response options
	Introduction Dear Colleague, Thank you for taking the time to complete this questionnaire, which takes approximately 15–20 minutes. In our research conducted at the Doctoral School of Education of the University of Szeged (supervised by Dr. Éva Farkas), we aim to gain an overview of the motivational state and motivational practices of LSP teachers in Hungary. As a practicing LSP teacher and university lecturer, I am aware that, like myself, colleagues working as LSP teachers have diverse responsibilities. However, this time we kindly ask you to answer the questions based on your work as an LSP teacher, specifically in relation to your LSP classes. Thank you! If you have any questions, comments, or feedback regarding the research, please feel free to contact us at the following addresses: (c*ontact information of researchers)* The questionnaire can be completed until 11 April 2024.	
1	Informed consent* I am over 18 years old and I consent to participate in the research conducted at the Doctoral School of Education of the University of Szeged. I acknowledge that the research will use my data for research purposes while respecting anonymity and personal rights. I declare that my participation in the study is voluntary.	o Yes o No
2	Gender*	o Male o Female
3	Age*	Drop-down menu listing age ranges (e.g., 21–30, 31–40, ..., 71 and above)
4	Mother tongue*	Hungarian or specify another language
5	First L2*	English, German, French, Italian or specify another language
6	Field(s) of LSP*	Tick-box grid allowing multiple selections across predefined fields of LSP and languages; an “Other” category was also provided to allow for additional fields or languages not listed
7	Language(s) taught*	
8	Affiliation	Higher education institutions (HEIs) in Hungary to select or specify another HEI
9	Teacher’s degree*	o Yes o No
10	Specialty-related qualification*	o Yes o No
11		If yes, specify*
12	Academic degree*	o Yes o PhD in progress o No
13	Years of experience*	Drop down menu with numbers from 1 to 40+

Questionnaire items		Response options
14	How did you become an LSP teacher and how did you start your career? Did you start teaching LSP by choice, by assignment or due to life circumstances?*	Free-text response
15	What formal and not formal training(s) have you received, what has helped you to fulfil your current role as an LSP teacher?*	Free-text response
16	Which competencies (describing knowledge and experience) do you consider essential for effective LSP teaching? Please select FOUR elements from the list. If you are missing something from the list, indicate it in the "Other" box.* □ the ability to differentiate material according to language level □ ability to use research methods applicable to LSP (e.g., needs analyses) □ ability to use digital tools for teaching and learning □ ability to work together, cooperatively □ knowing typical learning patterns of adult language learners □ ability to find common ground with students □ ability to seek and accept professional help □ ability to solve problems □ knowledge of teaching/teaching methodology □ stable, well-maintained/developed language skills □ ability to transform specialist material into teaching material □ specialized (content/discipline) knowledge □ ability to self-teach specialized content □ ability to accept feedback, reflectiveness □ other	Forced-choice, top four selection
17	Which competencies concerning attitude and personality do you consider essential for effective LSP teaching? Please select THREE of the following characteristics. If there is something you feel is missing, please indicate it in the "Other" box.* □ constant motivation to understand the subject matter of the given discipline □ autonomy □ healthy self-confidence □ consideration of student needs □ openness readiness to experiment □ resilience □ flexibility □ professional humility □ interest in the specialized field of discipline □ diligence, perseverance □ tolerance □ desire for further training □ patience (to accept one's own shortcomings and towards students) □ other	Forced-choice, top three selection
18	If you have a basis for comparison between teaching Languages for General Purposes and Languages for Specific Purposes: what do you see as the most important difference?*	Free-text response
19	LSP teachers face many challenges and difficulties. To what extent do you agree with the statements listed below?* 19.1 Sometimes students know the content of specialty better than I do. 19.2 It frustrates me when I experience that students know the content of specialty better than I do. 19.3 Curriculum development and/or study material development is also my responsibility. 19.4 Learning about the subject area and keeping my knowledge up to date requires constant self-teaching on my part.	o Strongly agree o Agree o I don't know o Disagree o Strongly disagree

	Questionnaire items	Response options
	19.5 I have few formal opportunities to acquire knowledge in the given specialty. 19.6 I have limited opportunities for further training in the specialty. 19.7 I have limited opportunities for further training in the foreign language I teach. 19.8 I feel that our institution does not really support students' language learning. 19.9 I feel that low level of language proficiency of students is an obstacle to effective language teaching. 19.10 I do not have the opportunity to cooperate with other teachers who are teaching content subjects. 19.11 I need more time to prepare for my LSP classes.	o Strongly agree o Agree o I don't know o Disagree o Strongly disagree
20	What do you feel is the biggest difficulty or challenge in your job as an LSP teacher?*	Free-text response
21	What do you think are the factors that contribute most to students' motivation to learn LSP? Choose/name the THREE most important ones. If you miss something from the list, please indicate it under "Other".* □ sense of achievement □ personal interest □ teacher−student relationship □ community (expectations of peers and or institution) □ career goals □ EMP teacher's personality □ teacher's EMP knowledge □ innovative methods □ family background □ EMP teacher's discipline-related content knowledge □ other	Forced-choice, top three selection
22	What factors do you think are the biggest obstacles to student motivation? Select/name the THREE most important ones. If you miss something from the list, please indicate it under "Other".* □ feeling of failure □ language learning shyness/anxiety □ teacher−student relationship □ lack of engagement from fellow students □ large group size □ demanding schedule □ lack of technical equipment □ inappropriate teaching materials or textbooks □ excessive teacher strictness □ constant teacher dissatisfaction □ lack of feedback □ other	Forced-choice, top three selection
23	To what extent do you feel that your role/responsibility as an LSP teacher is to motivate students?*	o Absolutely o Somewhat o Not at all
24	How can an LSP teacher motivate students? What has the most positive impact? Please select the FOUR most important ones. If you attach importance to other factors than those listed, please indicate them in the "Other" option.* □ using up-to-date topics and authentic teaching materials □ clear communication of expectations □ applying gamification □ considering students' needs □ getting to know students' needs □ applying innovative teaching methods □ creating a positive atmosphere in class	Forced-choice, top four selection

Questionnaire items		Response options
	□ striving for good teacher–student relationships □ use of praise and rewards □ assigning challenging tasks □ forming small groups □ applying consistency □ paying attention to individual learner differences □ reducing language-related anxiety □ teacher role modelling □ methodological preparedness of the teacher □ teacher's subject-matter preparedness □ teacher's personal enthusiasm for the LSP subject or field □ teacher's personality □ other	Forced-choice, top four selection
25	Do you have any further comments or observations on this question (Q24)?	Free-text response
26	Are there any circumstances that make your LSP subject different from other subjects in terms of motivation (either within the subject area, e.g. professional (content) subjects versus LSP subjects etc. or compared to other LSP subjects)*	Free-text response
27	To what extent do you agree with the statement that a sufficiently motivated teacher is a prerequisite for motivated students?*	o Strongly agree o Agree o I don't know o Disagree o Strongly disagree
28	What motivates you personally as an LSP teacher?*	Free-text response
29	Do you define yourself as an LSP teacher or do you give priority to something else (e.g. do you introduce yourself as a researcher, university lecturer, etc.). Do you give priority to your identity as an LSP teacher? If not, what?*	Free-text response
30	Do you apply the learning outcomes (i.e. student-centered) approach?*	o Yes, I do o I have heard of it, but I don't use it o I don't use it o I don't know what it is
31	To what extent do you feel your work is valued and appreciated 31.1 by students?* 31.2 by your immediate work environment/colleagues?* 31.3 by your institution?*	o Not at all o Somewhat o Fully
32	Is there anything else you would like to add, that came to your mind when completing the questionnaire, that you would like to share or add to your answers?	Free-text response
33	If you consent to a short follow-up interview about your work as an LSP instructor, please provide your e-mail address.	Free-text response
34	If you would like to receive feedback on the results of the study, you may indicate this by providing your e-mail address here.	Free-text response
35	Thank you message and contact information	n/a

APPENDIX F

Ethical approval issued by the Doctoral School of Education

SZEGEDI TUDOMÁNYEGYETEM
NEVELÉSTUDOMÁNYI DOKTORI ISKOLA
ETIKAI BIZOTTSÁGA

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Tel.: (62) 544163, 544032; Fax: (62) 420034

Ügyiratszám: 1/2023
Tárgy: kutatás-etikai engedély igazolása

E T I K A I E N G E D É L Y

Stötzer Andrea a 2023.01.20-án „*Az angol orvosi szaknyelv tanulásának és tanításának sajátosságai a magyarországi orvos- és egészségtudományi karokon*" c. kutatás (témavezető: Dr. Farkas Éva) tárgyában benyújtott etikai kérelmet az SZTE Neveléstudományi Etikai Bizottság a kutatási terv és a kérelemhez csatolt kiegészítések áttanulmányozása alapján elbírálta, és a következő döntést hozta:

A bizottság a szakmai-etikai engedélyt **jóváhagyja**/~~nem hagyja jóvá~~.

INDOKLÁS:

A kutatás célja a magyarországi orvostan- és egészségtudományi hallgatók angol orvosi szaknyelv iránti érdeklődésének, tanulási motivációjának felmérése. Az adatgyűjtés anonim, online kérdőíves lekérdezéssel történik. Összesen kb. 4-600 hallgató vesz részt a kutatásban. A kutatásban nem vesznek részt 18 éven aluli személyek. A részvétel önkéntes, a tájékozott beleegyezés a kérdőív első oldalán megtörténik, és a következő oldalra lépni csak azt követően lehet, hogy a kitöltő elolvasta és beleegyezését adta a kitöltéshez. Személyes adatok nem kerülnek felvételre. A kutatók biztosítják, hogy a résztvevők személyiségi jogai, testi és lelki egészsége ne sérüljön. A róluk gyűjtött adatok illetéktelenek kezébe nem kerülnek, az adatok felhasználása kutatási célokat szolgál.
Mindezek alapján megállapítható, hogy a benyújtott kutatási terv a neveléstudományi és a tágabb értelemben vett társadalomtudományi humán kutatások szakmai-etikai kritériumainak megfelel.

Szeged, 2023. február 6.

Prof. Dr. Pikó Bettina
az Etikai Bizottság elnöke

APPENDIX G

Author Declaration

I hereby declare that this study-based dissertation is composed of four peer-reviewed journal articles (Study 2, Study 3, Study 4, and Study 5; see *Table D1*), all of which have been published in scholarly journals. The journals in which these articles have appeared are indexed and ranked within Q1 to Q2 categories according to the Scimago Journal Rank (SJR) system, thereby meeting the formal requirements of the Doctoral School of Education (University of Szeged) regarding the eligibility of articles to be included in a study-based dissertation:

Study 2: Stötzer, A., Farkas, E., & Bagyura, M. (2025). From theory to instrument: Developing an L2 motivational self system-inspired questionnaire. *Educational Process: International Journal, 16*, e2025252. https://doi.org/10.22521/edupij.2025.16.252

Study 3: Stötzer, A., Bagyura, M., & Farkas, É. (2026). Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes. *Educational Process: International Journal, 20*, e2026001. https://doi.org/10.22521/edupij.2026.20.1

Study 4: Stötzer, A., Bagyura, M., & Farkas, É. (2025). Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary. *English Teaching & Learning, 49*(4), 889–915. https://doi.org/10.1007/s42321-025-00207-1

Study 5: Stötzer, A., Bagyura, M., & Farkas, É. (2025). Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers. *Social Sciences & Humanities Open, 12*, 102024. https://doi.org/10.1016/j.ssaho.2025.102024

These core publications are complemented by an additional study (Study 1), a narrative literature review published in a Q3 journal:

Study 1: Stötzer, A., & Farkas, É. (2024). ContEMPorary matter: Updating our understanding of English for Medical Purposes. *Journal of Teaching English for Specific and Academic Purposes, 12*(3), 741–754. https://doi.org/10.22190/JTESAP241006055S

Each article presents the results of original research conducted within the framework of this doctoral project, under the academic supervision of my Supervisor and in collaboration with a Co-author (see Co-author's Statement in Appendix H). In all five publications, I served as the first and corresponding author. My contributions encompassed the conceptualization and design of the studies, the development of data collection instruments, data collection, data analysis and interpretation, manuscript drafting and revision, as well as communication with journal editors and reviewers throughout the peer-review process.

Date: Szeged, January 6th, 2026
Name: Andrea Stötzer

Signature: 

APPENDIX H

Co-author's Waiver Statement

I, the undersigned, as a corresponding author or co-author of the publication(s) listed below, hereby declare that the applicant (PhD candidate) played a decisive role in achieving the jointly published scientific results presented in the theses of their PhD dissertation. I further declare that I have not used, nor do I intend to use, these theses in any other qualification procedure aimed at obtaining a PhD degree.

5 January 2026	.....Bagyura Mária.....
Date	Author

Jointly published papers relevant to the applicant's theses:

Stötzer, A., Bagyura, M., & Farkas, É. (2026). Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes. *Educational Process: International Journal, 20*, e2026001. https://doi.org/10.22521/edupij.2026.20.1

Stötzer, A., Bagyura, M., & Farkas, É. (2025). Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers. *Social Sciences & Humanities Open, 12*, 102024. https://doi.org/10.1016/j.ssaho.2025.102024

Stötzer, A., Bagyura, M., & Farkas, É. (2025). Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary. *English Teaching & Learning*, *49*(4), 889–915. http://doi.org/10.1007/s42321-025-00207-1

Stötzer, A., Farkas, É., & Bagyura, M. (2025). From theory to instrument: Developing an L2 motivational self system-inspired questionnaire. *Educational Process: International Journal*, *16*(1). http://doi.org/10.22521/edupij.2025.16.252

APPENDIX I

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the author used several AI-assisted technologies to support the academic writing process. These included ChatGPT (OpenAI), QuillBot, and Writefull. These tools were employed exclusively to help the author express ideas in English more clearly and to check grammar, vocabulary, and spelling. They were not used to generate or analyze research content, interpret findings, or formulate arguments. All conceptual and analytical content is the original intellectual contribution of the author.

In addition, the Zotero reference manager was used to collect, organize, and format bibliographic references in accordance with APA citation guidelines.

Following the use of these tools, the author thoroughly reviewed and edited all content to ensure academic rigor, originality, and consistency. The author takes full responsibility for the integrity, accuracy, and scholarly content of the final version of this publication.

No part of the work was generated solely by artificial intelligence without the author's active supervision, critical engagement, and final editorial control.

Date: January 6th, 2026
Name: Andrea Stötzer

Signature: 

APPENDIX J

List of Author's publications related to the dissertation[16]

*[*Correspondent Author]*

Stötzer, A.*, Bagyura, M., & Farkas, É. (2026). Running a diagnostic on motivation: Exploring motivational dynamics underlying non-Anglophone medical students' efforts to learn English for Medical Purposes. *Educational Process: International Journal, 20*, e2026001. https://doi.org/10.22521/edupij.2026.20.1

Stötzer, A.*, Bagyura, M., & Farkas, É. (2025). Motivational drivers and barriers in learning English for Medical Purposes: Perceptions of Hungarian medical students and EMP teachers. *Social Sciences & Humanities Open, 12*, 102024. https://doi.org/10.1016/j.ssaho.2025.102024

Stötzer, A.*, Farkas, É., & Bagyura, M. (2025). From theory to instrument: Developing an L2 motivational self system-inspired questionnaire. *Educational Process: International Journal*, *16*(1). http://doi.org/10.22521/edupij.2025.16.252

Stötzer, A.*, Bagyura, M., & Farkas, É. (2025). Self-appointed and self-taught? Professional characteristics and challenges of LSP teachers in Hungary. *English Teaching & Learning*, *49*(4), 889–915. http://doi.org/10.1007/s42321-025-00207-1

Stötzer, A.*, & Farkas, É. (2024). ContEMPorary matter: Updating our understanding of English for Medical Purposes. *Journal of Teaching English for Specific and Academic Purposes, 12*(3), 741–754. http://doi.org/10.22190/JTESAP241006055S

[16] The list below presents the related publications in reverse chronological order, starting with the most recently published work.

APPENDIX K

List of Author's conference presentations related to the dissertation

Table DA.3 Author's conference presentations related to the dissertation *(listed in reverse chronological order)*

Author(s)	Date	Title of presentation	Language and type of presentation	Title of conference	Location
Stötzer, A., & Farkas, É.	2025, November 21–22	A „kompetenciás tengeren" innen és túl – szaknyelvtanárok új elvárások és kihívások között [*Navigating the "Sea of Competencies" – New Expectations and Challenges for LSP Teachers*]	Hungarian plenary talk	25th SZOKOE Annual International Conference entitled Competences, Languages for Specific Purposes, Domains: Shifting Boundaries MTMT	Miskolc (Hungary)
Stötzer, A., & Bagyura, M.	2025, November 13–15	Motiváló és demotiváló tényezők az angol orvosi szaknyelv tanulásában: magyar orvostanhallgatók és szaknyelvtanárok nézőpontjai [*Motivational and demotivational factors in learning English for Medical Purposes: Perspectives of Hungarian medical students and EMP teachers*]	Hungarian presentation and abstract	ONK2025 – 25th Conference on Educational Sciences MTMT	Szeged (Hungary)
Stötzer, A., & Bagyura, M.	2025, May 22	Az angol orvosi szaknyelv tanítását és tanulását célzó kutatás élethosszig tartó tanulás szempontjából releváns tanulságai [*Lifelong Learning Implications of an EMP Research Project*]	Hungarian presentation and abstract	A Lifelong Learning Ökoszisztéma Fejlesztésének kérdései és kihívásai/Trends and Issues of Developing Lifelong Learning Eco-systems: 21. MELLearN Lifelong Learning Konferencia Absztrakt kötet/21st Conference of MELLearN - Hungarian Universities' Lifelong Learning Network Collection of Abstracts p. 57, MTMT	Szeged (Hungary)
Stötzer, A.	2024, November 29–30	On the same page? – A Survey of Professional Pathways and Challenges of LSP Teachers in Hungary	English presentation and abstract	SZOKOE 24th Annual International Conference: Repositioning the Teaching of LSP: Technological and Structural Challenges organized by The Hungarian Association of Teachers and Researchers of Languages	Budapest (Hungary)

Author(s)	Date	Title of presentation	Language and type of presentation	Title of conference	Location
				for Specific Purposes Károli Gáspár University of the Reformed Church in Hungary Faculty of Humanities and Social Sciences Department of Foreign Languages (Book of Abstracts pp. 29–30) MTMT	
Stötzer, A.	2024, September 20–21	A questionnaire-based study of learning English for Medical Purposes among Hungarian medical students	English presentation and abstract	1st International Conference – Languages in Medicine: Teaching, Testing Practice organized by Jagiellonian University Medical College Language Center, MTMT	Krakow (Poland)
Stötzer, A.	2024, September 6–7	Exploiting Synergies in "Bilingual" Medical Communication Classes	English abstract	6th English for Healthcare Conference organized by European Association for Language Teachers for Healthcare (EALTHY), MTMT	Brighton (UK)
Stötzer, A.	2024, May 29–June 1	Self-appointed and self-taught? - A qualitative survey of LSP teachers in Hungary	English presentation and abstract	ATEE Spring Conference 2024 Teacher education research in Europe: trends, challenges, practices and perspectives: Book of abstracts, p. 40, MTMT	Bergamo (Italy)
Stötzer, A.	2024, May 24–25	Exploring the Identity and Motivation of Teachers of English for Medical Purposes	English presentation and abstract	11th Austrian UAS Language Instructors' Conference "Common Ground in ESP" organized by the University of Applied Sciences, MTMT	Wiener Neustadt (Austria)
Stötzer, A.	2024, May 24–25	Medical Students' learning strategies in learning English for Medical Purposes	English poster presentation	11th Austrian UAS Language Instructors' Conference "Common Ground in ESP" organized by the University of Applied Sciences, MTMT	Wiener Neustadt (Austria)
Stötzer, A.	2023, October 26–28	Orvostanhallgatók angol szaknyelvtanulási motivációja – egy pilotkutatás eredményei [*Medical Students' Motivation to Learn English for Medical Purposes: Results of a Pilot Study*]	Hungarian presentation	ONK2023 – 23rd Conference on Educational Sciences Book of Abstracts p. 409, MTMT	Budapest (Hungary)

Author(s)	Date	Title of presentation	Language and type of presentation	Title of conference	Location
Stötzer, A.	2023, October 26–28	Szaknyelvtanári identitás és motiváció vizsgálatának elméleti háttere [*Theoretical Background of Research on LSP Teachers' Professional Identity and Motivation*]	Hungarian presentation	ONK2023 – 23rd Conference on Educational Sciences Book of Abstracts p. 410, MTMT	Budapest (Hungary)
Stötzer, A. Asztalos-Zsembery, E., & Csenki-Bozsó, R.	2022, November 11	Konszekutív tolmácsolás órák a szaknyelvtanulás szolgálatában [*Consecutive Interpreting Classes in the Service of Language for Specific Purposes Learning*]	Hungarian presentation	SZOKOE 22nd Annual International Conference: Working Together Nationally and Internationally to Promote Learning Languages for Specific Purposes Book of Abstracts p. 30, MTMT	Szeged (Hungary)
Stötzer, A.	2022, September 16–17	Quasi-Consecutive Interpreting Classes in the Service of Language Learning	English presentation	5th English for Healthcare Conference organized by European Association for Language Teachers for Healthcare (EALTHY), MTMT	Belgrade (Serbia)
Stötzer, A.	2021, September 17	English Communication Skills Training for Medical Educators – in the virtual classroom.	English presentation	EALTHY Virtual Symposium organized by European Association for Language Teachers for Healthcare (EALTHY), MTMT	(online)
Stötzer, A.	2021, June 28–30	A bilingual course for medical students on doctor-patient communication	English presentation	19th International and Interdisciplinary Conference on Communication, Medicine, and Ethics organized by the University of Insubria MTMT	Como (Italy) (online)
Stötzer, A.	2021, May 14	Teaching Medical Interpreting Online.	English presentation	EALTHY Spring Symposium organized by the Department of Languages for Biomedical Purposes and Communication, UPMS, MTMT	Pécs (Hungary)