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# TEACHING MEDICAL ENGLISH TO STUDENTS AT CHINESE UNIVERSITIES: NEEDS-BASED APPROACH

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**РОССИЙСКИЙ УНИЕВРСИТЕТ ДРУЖБЫ НАРОДОВ ИМЕНИ ПАТРИСА ЛУМУМБЫ**

*На правах рукописи*

**ТАРУН САРКАР**

# ОБУЧЕНИЕ МЕДИЦИНСКОМУ АНГЛИЙСКОМУ ЯЗЫКУ В ВУЗАХ КИТАЯ НА ОСНОВЕ ПРОФЕССИОНАЛЬНО-ОБРАЗОВАТЕЛЬНЫХ ПОТРЕБНОСТЕЙ СТУДЕНТОВ

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## Introduction

***Research Relevance***. The present university environment highlights the importance of foreign language proficiency as the world grows more interconnected. Many fields, such as business, sciences, technology, healthcare, require professionals to collaborate with international partners and clients. Among all the languages spoken and used worldwide as foreign ones, English is one of the most coveted regarding its use for international communication, partnership collaboration, and education (Collins, 2023; Rao, 2019). The above explains a significant shift in English education worldwide from a traditional focus on General English (GE) to a more specialised approach, known as English for Specific Purposes (ESP) (Alharbi, 2022; Arnó-Macià et al, 2020), especially in non-native English-speaking countries (Benabdallah & Belmikki, 2020). In this context, researchers indicate that medical schools in East Asian countries have started offering English for Medical Purposes (EMP) courses to their students, with the goal of globalizing their campuses and enhancing students' international competitiveness (Cao, Zhang, Liu & Liping, 2022). The instruction of Medical English to students in the healthcare field has become increasingly essential in the contemporary global medical environment. The capacity to communicate proficiently in English promotes more effective interactions with both colleagues and patients from diverse cultural backgrounds. Proficiency in Medical English equips students with specialised terminology, discourse patterns, communication skills required to interpret medical data and express clinical ideas, which is essential for making accurate diagnoses and formulating effective treatment plans. The above-mentioned features confirm the current importance of the research theme that the

present dissertation explores.

While considering ***the degree of scientific advancement regarding the research problem*** in the context of China, some significant observations deserve mention. Firstly, General English (GE) is not the main focus of English Language Teaching (ELT) in Chinese universities; the focus has shifted from GE to English for Specific Purposes (ESP) teaching (Sun, 2024). That ESP teaching has become the primary focus of Chinese universities is evident from the outline of the National Medium and Long-term Professional Development Plans in China, which clearly focuses on preparing students for international-level professionals in both soft and hard skills (Cai, 2015). However, achieving this goal is demanding (Liu, Yan, & Fu, 2022; Liu, Hallinger, & Feng, 2016), and without the help of specialised ESP teachers (Cai, 2023), it remains a challenging task, with most ESP courses being taught by GE teachers at many universities (Sun, 2022).

Furthermore, English for Medical Purposes (EMP) stands out as one of the most crucial fields under ESP (Lin, 2018), with its widespread adoption evident across more than 100 medical universities or faculties, reflecting its extensive use in medical and biological fields (Li, 2019; Liu & Chu, 2022; Liu, Chu, & Wang, 2021). This underscores the growing emphasis on and significance of EMP teaching, shaping the educational landscape (Liu & Xu, 2009; Li et al., 2016) to meet the distinct linguistic needs of learners within the Chinese medical education system.

However, with numerous individual needs analysis studies that have explored Medical English and EMP teachers' perspectives globally, including in China, scholars (Cui, Kaur, 2025, Guan, Scott, 2025, Liang et al., 2025, Xu et al. 2025) underscore a

number of ***existing contradictions***, as follows:

– while practitioners acknowledge the need for developing the communicative competence in real clinical contexts, institutions sometimes adopt an exam-oriented teaching;

– while hospitals require practical profession-specific communicative skills, some institutions limit curriculum to grammar knowledge and General English skills;

– disbalance exists between centralised national curriculum and local university or hospital needs in terms of prescribed outcomes and workplace communicative requirements;

– while both students and employers expect the training within real-world medical communication contexts, there is limited use of authentic materials in some programmes;

– while the need for Medical English language training is officially recognised in Chinese Universities, and the Chinese academic context witnesses explicit advances in the Medical English conceptual and applied studies, there are few studies that examine the viewpoint of educational process key actors regarding specific training requirements within the Chinese medical context.

The aforementioned context delineates ***the research problem*** associated with teaching English at Chinese medical universities, designed around the occupational needs of healthcare specialists. The identified issue provides the foundation for formulating ***the research theme***, which focuses on *Teaching Medical English to Students at Chinese Universities: Needs-Based Approach.*

***The object of the study*** covers Medical English teaching scenarios at Chinese

medical universities.

***The subject of the study*** addresses a pedagogical technology for needs-based approach to teaching Medical English to students at Chinese universities.

***The goal of the study*** involves the scientific and methodological rationale of the developed pedagogical technology and its empirical validation through needs-based training of Medical English learners at Chinese medical universities.

***The dissertation explores the following hypothesis:*** teaching Medical English to students at Chinese Universities can be more efficient if:

– its theoretical and methodological foundations rest on the synthesis of context-sensitive philosophical perspectives, educational paradigms and learning theories, specialised language pedagogy, current curricula trends and demands shaping Chinese medical education;

– it employs the needs analysis concept as both the theoretical foundation and the basis for applied instruction;

– it is implemented through a systemic-structural pedagogical framework, which is specifically designed in line with the students' professional education needs.

To accomplish the above goal and test the above hypothesis, the following ***research objectives*** have been set:

– to outline the theoretical background of the needs-based approach to teaching Medical English at Chinese medical universities, with a view to create a pedagogical framework for the aforementioned approach;

– to develop a research methodology for empirical investigation assessing needs-focused perceptions of the target audiences engaged in learning/ teaching in the academic context under study;

– to design a pedagogical technology as an instructional framework for implementing needs- based training of Medical English in the academic context under study;

– to validate the needs-based pedagogical technology for Medical English teaching at Chinese university by designing a course that aligns with the identified needs and is tailored to the educational contexts of Medical English learners at Chinese medical universities.

To address the research objectives, various ***methods*** were used, including:

– *theoretical methods*, encompassing analysis, comparison, and synthesis of scientific research in interrelated fields of knowledge;

– *empirical methods*, incorporating observation, questionnaires, student testing, experimental training, mathematical processing of survey and training results.

– *statistical methods*, including data processing using the Statistical Package for the Social Sciences (SPSS) software with subsequent tabular presentation of the results.

*In terms of empirical investigation,* the research employs questionnaires as the main research instrument to analyse the needs. Both quantitative and qualitative approaches have been used. The quantitative aspect allowed for the collection of measurable data from students, teachers, and other stakeholders. Percentage analysis of the data helped to understand and analyse the specific needs, patterns, and obtain

generalizable findings from the stakeholders regarding the importance of the different skills of the target language. In contrast, qualitative analysis of the students' and teachers' responses, helped to elucidate the audiences' perceptions and offered in-depth insights into the specific experiences and challenges of individuals, enabling the researcher to capture the nuances regarding the language needs, the availability of teaching materials, the choice of appropriate teaching methodologies, the use of technology, and the need for collaboration with other subject teachers.

The research employs an *experimental training* as the main instrument to evaluate the efficacy of the designed pedagogical technology, based on student-reported needs and addressing faculty-reported challenges. A specialised curriculum and educational aids were developed to implement the approach under study.

*The research sample* included students, teachers, and other stakeholders from two prestigious medical universities in southwest China—Chongqing Medical University and its hospital (CMU) and Army Medical University in Chongqing (AMUC).

In terms of ***methodological background***, the research draws on a range of approaches:

– *Humanism* (C.Rogers, A.Maslow, V.A. Slastenin)

– *Student-centred, personalized learning* (M.Ross, I.A. Zimnyaya ).

– *Competency-based approach* (as introduced by UNESCO and OECD, and specified by L. Deeng to the educational context of Chinese higher education);

– *Epistemological approach* (Bonnie D. Schwartz; Yang, Chan, and Hsu; Van der Yeught M., Gershunin S.A.);

– *Context-based approach* (Dewey J., Vygotsky L., Abu-Rasheed H., Verbitsky A.A.);

– *Problem-based approach* (H.S.Barrows, M.I. Makhmutov).

The study is situated within a constellation of the following ***theoretical perspectives:***

– *Theory of Classical Hinduism* (Gita, S. B., Basham, A. L.; Choudhary M., Dilip, V., Dwivedi U.K., Govindacharya A., Larson, G. J., Prabha G.);

– *Confucianism, Daoism and Buddhism and Language teaching* (Fwu B. J., Feng Jiaqian, Moeller H.G.)

– *Foundations of major theories of education* (Hahn K., Maslow A., Piaget J., Rogers C., Skinner B.F., Vygotsky L. Watson J.B.) *and their contemporary developments* (Беспалько Н.В., Новиков АА., Сластенин В.А.);

– *Theories of Language Learning and Teaching* (Alderson, J. C., Brown, J. D., Crystal D., Hughes, A., Hutchinson, T., Martin, B., Richards, J. C., Waters, A., Вербицкий А.Н., Леонтьев А.Н., Пассов Е. И., Шаклеин В.М., Щукин А.Н.);

– *Theory of the ESP Teaching* (Dudley-Evans, T., & St John, M.; Hutchinson, T., & Waters, A.; Paltridge, B., Robinson, P.; Strevens, P.; Swales, J. M.; Атабекова А.А., Гавриленко Н.Н., Дмитренко Т.А., Игнатенко И.И., Яроцкая, Л.В.);

– *Theory of LSP in Medical Education* (Frinculescu, I. C.; Javid, C. Z.; Lodhi, M. A., Shamim, M., Robab, M., Shahzad, S., & Ashraf, A.; Masters, K.; Dourado, L., Tsisar, S., Ferreira, M. A.; Chan, K. S., Zary, N., Алексеева Л. М., Баева Т.А., Куриленко В.Б., Королева Н.Г., Мишланова С. Л., Е.В. Чернышкова).

***The research included the following stages:***

Stage One (2017 –2020) covered analytical activities regarding existing systems of standardized evaluation of four language skills and their use in Chinese academic contexts as well as first empirical attempts to design educational materials for LSP learners and theoretical foundations thereof.

Stage Two (2021 –2022) encompassed theoretical and modelling activities, which included a comprehensive review of academic literature pertaining to the dissertation topic, the identification of the theoretical and methodological foundations of the research, the search for and development of the educational content tailored to the target audience, and the development of a tentative needs-oriented pedagogical framework.

Stage Three (2021–2023) involved experimental activities, aimed at the designed pedagogical technology pilot testing, statistical data processing, and the educational content refining.

Stage Four (2024–2025) concentrated on analytical activities, assessing the outcomes of experimental training, the effectiveness of the developed methodology and designed technology; incorporated systematizing and consolidating the research findings and presenting them in the dissertation format.

*The experimental part of research* was conducted at Chinese universities. *The overall research* was conducted at the Department of Foreign Languages, Law Institute, Peoples' Friendship University of Russia named after Patrice Lumumba.

***The most significant research results*** obtained personally by the PhD degree applicant and ***their scientific novelty*** are as follows:

1.The theoretical and applied data has been renewed and enhanced regarding

current challenges concerning medical English instruction at Chinese universities, in terms of curriculum issues, teaching approaches, tools, and materials.

2.A novel theoretical foundation has been established for the needs- based approach to teaching medical English to students at Chinese universities, by integrating theories and conceptions previously treated separately, in case of need-based approach.

3. The current pedagogical landscape has been updated through nationally and locally responsive practices and perspectives, illustrated by novel contextually situated examples of English for Specific Purposes issues within Chinese medical education.

4. A comprehensive methodology to design needs- based training has been developed through integrating a theoretical analysis, empirical inquiry and experimental teaching of language for specific purposes.

5. The diagnostic instruments and their application procedures for assessing participants' needs within the educational process have been delineated with an explicit consideration of the specific educational context of Chinese medical universities.

6.The essence of the needs-based approach to teaching has been specified and outlined in terms of a respective pedagogical technology, which has been developed as an instructional framework, incorporating the conceptual, content and procedural dimensions.

7.The process-oriented essence of the needs-based pedagogical technology has been identified and outlined through a new perspective of its procedural dimension, where the implementation of training is preceded by the needs analysis, its data interpretation and a tailored course design.

8. Previously unrecognised stages of the Procedural dimension of the needs-

based pedagogical technology for teaching specialised languages have been identified and explicitly articulated, including Analysis, Identification, Development, Implementation, Improvement, and Evaluation.

***The theoretical significance of the research*** lies in the advancement in understanding the interdisciplinary nature of the needs-based pedagogical approaches to languages teaching, clarifying its analytical structure, and establishing methodological foundations for needs analysis to inform the design of pedagogical technologies in various educational contexts. The findings contribute to a theoretical conceptualization of the essence of pedagogical technology rooted in student needs and its constituent components as applied to English language instruction at medical universities. Data from an analysis of ME teachers' opinions about coordinating with subject experts, reveals benefits and challenges to combining medical knowledge with foreign language teaching. This, in turn, enhances a conceptual perspective for the coordination between two diverse disciplines crossing within the university curriculum. The study, while confirming the need for a balanced approach to the four language skills, i.e., listening, speaking, reading and writing, reveals how these skills can be prioritised and blended based on the learners' specific needs in specialised fields.

***The applied implication of this study*** resides in the author's development and implementation of a tailored pedagogical technology for teaching medical English based on the needs of students; the design, testing, and validation of the authorial course on the subject under study, and the development of recommendations for designing medical English curriculum aligned with the learners' requirements. These outcomes can inform the instruction of English to prospective medical professionals,

the creation of educational aids for teacher training in English for specific purposes at universities, and the advancement of institutional policies aimed at improving the English language learning system, accounting for the needs of stakeholders within the educational process at medical universities.

***The reliability and validity of this research*** is predicated upon an array of determinants. The study is built on a thorough review of all existing and relevant literature on LSP/ESP, and Medical English, in particular. The investigation is grounded in generally approved theories and conceptions for organising and running LSP training. The dissertation draws on a synthesis of both quantitative and qualitative methods. The research is based on the data from participants in the educational activities, and a detailed analysis of their needs of participants in the educational process, including students, teachers of English for medical purposes, and medical professionals.

The validity of the developed pedagogical technology is confirmed by the learning outcomes of students in the control and experimental groups, as well as by the similarity of such learning outcomes using the developed pedagogical technology at two different medical universities in China, in groups of students with different professional, sociocultural, and gender characteristics.

The use of the Statistical Package for the Social Sciences (SPSS) for the data processing contributes to the data correctness, as well.

***The approbation of the dissertation*** took place through the teaching practices and materials development in the course of teaching in a number of Chinese universities that have provided the positive evaluation and review from the institutions'

governing bodies; at the national conference in Guangzhou, China (2017) and the international conference in Bologna, Italy (2017), in the course of presentations at annual student conferences (with international reach) at RUDN University (Languages for Peace and Partnership, 2023-2025), and at meetings and research workshops of the RUDN Law Institute Foreign Languages department (2024-2025), as well as via publications in academic journals (2022-2024) and academic collections (2020). In total, the author has published eight academic publications within the research area under study.

***The research statements to be defended*** are as follows:

1. The needs- based approach to teaching medical English to students at Chinese universities requires an integrated theoretical framework that reconciles humanistic and competence-based paradigms of modern education, incorporates epistemological foundations of specialised language learning and postulates of classical Chinese philosophy, synthesises major learning theories (constructivism, cognitivism, behaviorism, socially oriented learning, learning through experience, connectivism), employs LSP provisions, and derives from the current state, goals and objectives of the modern system of medical education at Chinese universities.

2. The needs-based approach to training should embody a synergy of approaches with the view on learners' needs and perceptions as the top of the needs-based pedagogical framework for applied studies and activities, while incorporating a range of approaches as follows: sociolinguistic and learner-centred approaches foreground social contexts and central subject matter; strategic and systematic

approaches organise the educational process; a comprehensive, task-based model approach ensures direct teaching pathways, practices, and techniques; and means analysis, allows the concentration on data gathered from the social characteristic of the instructional environment. The integration of these approaches under the needs-centric educational umbrella can ensure a cohesive educational standpoint that addresses both general pedagogical considerations, including LSP, and the distinctive specificities intrinsic to a traditional Chinese mindset.

3. The research design and methodology to explore needs-based approach to teaching Medical English to students at Chinese universities require the integration of the empirical investigation of learners and teachers' needs within particular domain-specific educational contexts, and its coordination with subsequent experimental instruction. The empirical investigation toolkit should stand on the standardised methodology, while content is to be drafted in accordance with established practices of Chinese medical education and tailored to socio-cultural and professional national and local landscapes. The experimental instruction should rest on the systemic-structural pedagogical framework. Its design necessitates the synthesis of globally recognised pathways and perspectives, aligned with nationally relevant demands for domain-specific education, while being rooted in and expressed through traditional national educational and professional values.

4. The needs-based pedagogical framework can effectively operate through the concept of pedagogical technology, encompassing the conceptual, content and procedural dimensions. The conceptual dimension introduces a synergy of scientific paradigms, learning theories, and approaches. The content dimension comprises

learning goal and objectives, as well as institutional curriculum conditions. Compared with conventional approaches, the needs-based approach to the instruction in the area under examination does not incorporate the educational content and tools into the content dimension; these elements are identified following the needs-analysis stage of the procedural dimension.

5. The procedural dimension of the needs-based pedagogical technology should be anchored in the initiation of an empirical needs-based analysis, followed by the interpretative synthesis of its findings and subsequent deployment of customised instructional interventions. The procedural dimension incorporates a number of stages, commences with the diagnostic analysis to ascertain learners' needs, proceeds to the development of the needs-responsive content, advances to the implementation of context appropriate training, encompassing bespoke materials, tools, and teaching personnel; further transitions to assessment and improvement (iterative refinement of tools), and culminates in a summative evaluation.

***The conformity of the dissertation with the Passport of Specialty.***

The research is conducted within the designated areas of inquiry outlined in the Passport of Specialty under the index of 5.8.2:

3. The relationship between the theory, methodology, and practice of teaching and training at the general and higher education levels (by field of knowledge).

5. Methodological concepts of educational content and its design (by field of knowledge and educational level).

22. Theory, methodology, and practice of developing educational and methodological support for the educational process.

***The structure of the dissertation*** comprises an Introduction, three chapters, a Conclusion, 25 tables on the Needs Analysis data and two diagrams, References list containing 245 sources, and six appendices featuring data for empirical analysis and experimental training, letters of recommendation from universities in China where experimental instruction was conducted, a training course developed by the author.

# CHAPTER ONE.

# RESEARCH THEORETICAL BACKGROUND

The chapter aims to explore and identify scholarship that could provide substantial academic foundations for further needs-based teaching of medical English to students at Chinese universities. The investigation has been implemented through a theoretical analysis of needs-focused studies with reference to language learning in general, and language/English for specific purposes (LSP/ ESP) in particular.

## 1.1. Philosophical Foundations

While considering the philosophical foundations of the present research we consider it relevant to highlight those provisions across schools of thought that might contribute to understanding the status of language for specific purposes in general, features regarding Medical English learning in China as well as the author's philosophical background that underpins this research. By situating the inquiry within a broader intellectual context, we aim to elucidate the significance of language learning in specialised domains and its implications for pedagogical practices.

In examining the status of language for specific purposes through the lens of philosophy, we align with the perspectives of those scholars who advocate for the epistemological foundations of specialised language. As scholars underline these are drawn "from the philosophy of intentionality, highlight specialisation as a form of intentional state, and further specify the notions of specialised purpose, individual and collective specialised intentions, specialised communities, specialised domains and SLs."[ Van der Yeught, 2016, p 63]. Such a perspectives allows educators in the field of specialised language theory and practice to argue for a specialised purpose, needs,

and knowledge regarding both teachers and students' requirements that go beyond just communication *per si* [ibid] and proceed to personally relevant information construction through contextually dependant knowledge processing [Гершунин,2025]. Such an approach lays ground to further discussion on the LSP status within other Language learning/training theories.

Furthermore, research in specialised language instruction tailored to a particular target audience by a teacher could benefit from a diachronic examination of philosophical foundations of language learning in ancient thought by exploring these historical perspectives educators may gain valuable insights that inform contemporary teaching practices and enhance the effectiveness of language instruction.

Given the present research authorship and angle, we consider it relevant to consider in more detail Chinese philosophy tradition (due to the research scope) and Indian philosophy (due to the author's national affiliation as that of the LSP teacher).

The origins of the relationship between Chinese philosophy and foreign language learning can be traced to ancient influences like Confucianism, Daoism, and Buddhism. The exploration of Ancient Chinese Philosophy reveals a rich tapestry of thought that emphasises the interconnectedness of language and knowledge. Ancient Chinese philosophers provided frameworks that recognised the significance of acquiring foreign language for the purposes of communication and intellectual growth. Moreover, Chinese philosophy has attributed a critical social role to the language [Feng Jiaqian, 2005, Fwu, 2025].

Confucianism as one of the most influential philosophies in Chinese history places a great emphasis on education. Confucius' views on language focus on its

functions in Analects of Confucius [Pan Fuen, Wen Shaoxia, 1993] and identify the communicative, ethical, and political functions. According to the Confucius, language is a critical social tool to build connections, to foster mutual understanding, to rule the country and keep order in the society. In terms of individuals, language is an instrument for social development through life experience.

Daoism, another significant philosophy, views a foreign language learning as an organic process, language acquisition is more than a mechanical skill, it is an art that reflects the complexities and diverse ways of perceiving reality. In summary, the roots of foreign language learning in ancient Chinese philosophy are deeply interwined with the values upheld by key schools of thought such as Confucianism and Daoism. In addition, mindfulness practices, rooted in Buddhism, are integrated to improve students' concentration, stress management and cordiality [Moeller, 2000].

Language learning is framed not only as a cognitive exercise but as a comprehensive journey toward personal and moral development. The ancient Chinese philosophical perspectives offer valuable insights into the motivation and values that underline the pursuit of foreign language acquisition.

The philosophical foundation of this research also draws from the timeless wisdom of the Bhagavad Gita, a repository of ancient Indian insights into life's principles [Basham, 1991]. According to Gerald James Larson (2009), an Indologist and classical Hindu philosopher scholar, if there is any text that embodies the holistic view of a Hindu and encapsulates universal values [Choudhary & Dwivedi, 2023; Dwivedi, 2022; Hari Krishna & Chatterjee, 2024], it would be the Bhagavad Gita. Respected as a life science, its teachings on duty, knowledge, and wisdom serve as a

universal guiding light for perspectives on education and language learning [Bhangaokar & Kapadia, 2009]. Aligned with the core principles of developing a needs-based training system for medical English learners at a Chinese university, the Gita's emphasis on selfless work, knowledge pursuit, and wisdom application enriches the theoretical framework. The connection provides a unique perspective on learner-centred approach, cultural sensitivity, and ethical considerations crucial for impactful ESP training and development. Therefore, this section of the thesis highlights specifically four key teachings, directly connected to the research topic, laying the foundation for this thesis on ESP research. Among the various important teachings from The Bhagavad Gita, one of the most significant is the concept of 'Selfless Work' or 'Karma Yoga,' [Govindacharya, 2017; Choudhary & Prabha 2023] which specifically emphasises the performance of duties without attachment to outcomes. Although the idea might seem unmotivating or irresponsible to many, careful analysis can help us to understand the reason underneath [Dilip, 2008]. In our everyday life, excessive attachment to anything creates expectations [Roy et al., 2023] which are often unfulfilled, leading to unhappiness. And that unhappiness works as a demotivator, depriving or deviating us from performing our duties leading to disaster in life. Therefore, to avoid such situations in life, in the 18th verse of the 7th chapter, the Gita states, *"Prescribed duties should never be renounced. If one gives up his prescribed duties because of illusion, such renunciation is said to be in the mode of ignorance"* [Bhagavad Gita - SB, 2009]. In the 8th verse of the 3rd chapter, it further adds, *"Perform your prescribed duty, for doing so is better than not working. One cannot even maintain one's physical body without work"* [Bhagavad Gita - SB, 2009]. Finally,

in the 9th verse of the 3rd chapter, it explains, *"Work done without sacrifice causes bondage in this material world. Bondage comes from excessive attachment"* [Bhagavad Gita - SB, 2009]. These teachings advocate working for the sake of work, which is also applicable in the field of ESP teaching. Prescribed duties as part of the teacher's, students', and other related stakeholders' roles should not be renounced, and performing them diligently is highlighted as essential for maintaining a balanced and prosperous life. Applied to ESP teaching, this also suggests focusing on the process of language acquisition relevant to specific professional contexts, such as Medical English (ME), rather than fixating solely on immediate language proficiency outcomes.

To be successful in any field in the modern competitive world, including EFL learning, the Gita emphasises the importance of self-realization and continuous learning, which is the second teaching relevant in our context. Amidst intense activities, it is natural to feel frustrated and lose control of the mind in our everyday life [Tewari; 2022]. The 11th verse of Chapter 10 therefore, advises on this context, on dispelling darkness born of ignorance with the illuminating lamp of knowledge. And in the 39th verse of Chapter 4, it says, one attains knowledge by mastering the senses, being devoted to practice, and having faith [Prabhupada, 1972]. Thus, in simple terms, the Gita reveals our unique roles and purposes in life: to gain true knowledge through controlling our sense organs and relentless practice and self-confidence.

The pursuit of knowledge, praised by the Gita, aligns with the ethos of language acquisition in the medical field as well. The approach of seeking knowledge from a capable master mirrors the learning process in the medical field, emphasising the need for continuous self-upgradation. English for Medical Purposes (EMP) teachers,

following the Gita guidelines, therefore, can try to tailor language education to the specific needs and goals of learners within their professional domains, recognising the importance of their unique roles.

The third point that the Gita emphasises is the role of dedication and discipline in performing duties [Naragatti & Nagesh, 2023]. As we all know, positive habits are crucial for a happy and productive life. To develop positive habits and be self-disciplined, the Gita states in the 16th verse of Chapter 6, “There is no possibility of one becoming a yogi if one eats too much or eats too little, sleeps too much or does not sleep enough.” Here, ‘yogi’ refers to someone who is meditative, contemplative, and focused on their duty. This teaching resonates with the daily responsibilities of individuals involved in ME teaching and learning, emphasising the importance of dedicated and disciplined language learning. The emphasis on staying calm and performing duties on a daily basis in a selfless manner aligns with the noble opportunity ESP teachers have to contribute to medical professionals' ability to serve humanity.

The fourth and final point is the need for balancing emotions and achieving harmony in life, which is one of the most challenging endeavours in the modern world, given the countless temptations that surround us [Dabas & Singh, 2016]. The lack of balance or emotional instability often arises from our excessive attachments, fears, and anger in life. Therefore, the 10th verse of Chapter 4 of the Bhagavad Gita suggests that one can attain peace of mind by completely freeing oneself from attachment, fear, and anger. Another contributing factor to emotional imbalance is discontentment with one’s gains and achievements, coupled with envy towards others. Therefore, in the 22nd verse of Chapter 4, the Gita conveys that a selfless worker finds satisfaction in practical

gains that come naturally. This teaching holds particular relevance for English for Specific Purposes (ESP) teachers dealing with various stakeholders and medical professionals facing diverse challenges. Achieving a balanced and rational mental state is highlighted as crucial for attaining both peace and prosperity in life for success [Verma & Singh, 2014]. In ESP teaching, this could also mean striking a balance between language learning and the practical application of language skills in professional settings, ensuring harmony between theoretical knowledge and practical expertise.

Indeed, the teachings of the Bhagavad Gita are extensive, and one could devote numerous pages to its wisdom. The four philosophical doctrines specified here have served several purposes: they guide the entire process of conducting the research, and also helps to offer profound insights that are practical and applicable in the Medical English research context in China. Through the process of identifying, analysing, and addressing the practical needs of the Chinese medical English learners, this research is expected to develop an effective and practical yet comprehensive training system that would prove to be a boon for humanity. To mention, integration of humanistic principles like having a sense of duty and reasonability, purpose, dedication, harmony in the overall training session would add tremendous value in trainees' life.

Such a well-rounded, integrated and holistic approach would encourage learners not just to communicate in English but also become skilful in their specific works, mirroring the timeless wisdom of the Bhagavad Gita.

With this philosophy as our base, the next part of the chapter looks at education and language learning theories. This will help us better understand what learners need

and how they learn languages best, which will guide ESP training in Chinese medical education.

### 1.2. Paradigms and Theories of Education and Language Learning

Learning paradigms and theories are essential to understanding the intricacies of the learning process as they offer systematic blueprints on how individuals assimilate, process, and retain information [Artino & Konopasky, 2018]. Since our research involves adult learners with diverse job descriptions and individual goals, a brief overview of various learning theories deserves mention. In this section, major learning paradigms (following the approach by Azar et al. (2024) and theories (following the approaches by Seel (2012), Herni and Shamsudheen (2017)) are considered to contribute to the conceptual didactic framework for the research theme.

Before approaching a set of concrete observations, we consider it necessary to clarify that the present research shares the understanding of those scholars [Primarni A. et al. 2025] who view a paradigm as a kind of umbrella that provides a general perspective or approach, while a theory offers a more detailed explanation of specific phenomena. It is also important to keep in mind a coexistence of didactic paradigms [Yarotskaya, Voronina,2023].

The present investigation stands within the *humanistic paradigm* of education rooted in thought of Renaissance philosophers and linked with notable figures such as Carl Rogers, Abraham Maslow, and Kurt Hahn, who gained prominence in the mid-20th century. Carl Rogers, in particular, developed his ideas on humanistic education in the 1950s and 1960s. Humanism represents a learning approach that emphasises the personal and intrinsic nature of learning, aimed at unlocking the learner's full potential

(Torre et al., 2006). It builds upon the principles of self-regulated and self-directed learning, with learners actively shaping their knowledge acquisition process. In the current research context, humanism can be associated with recognising learners as active participants in their medical English learning journey. EMP teachers can adopt humanistic principles to empower learners in setting and achieving their individual language learning goals within their specialised field of research and study, thus enhancing their overall communicative competence in their professional settings. Humanism paradigm ensures the student-centred, personalized education [Ross, 2025, Зимняя, 2000].

Another paradigm refers to the competence-based paradigm that is acknowledged worldwide and gains a renewed focus in the current Chinese education [ Deng L., 2025.]. The present research follows the understanding of the competence-based education and framework as specified by the following international organisations:

– UNESCO that balances the core values and competences in terms of accountability, communication, teamwork, innovation, results focus, planning, organizing, and knowledge sharing [Bokova, 2016]

– and OECD whose approach covers knowledge, skills, values and attitudes required for operation and adaptation within diverse societal and professional context [Dillon, 2019].

While turning to learning theories we underline that they are crucial as they serve as a valuable guide in understanding the intricacies of learner needs, preferences, and the dynamics of effective language acquisition [Brown, Lee, 2025] within the Chinese

Medical English pedagogical context.

*Constructivism is* the first theory that the present research employs as the theoretical background to *focus* on self-regulated and self-directed learning. In the early 20th century, it was developed by Jean Piaget, a Swiss psychologist, and Lev Vygotsky, a Russian psychologist. Both Piaget and Vygotsky significantly contributed to the development of constructivist learning theory. While Piaget emphasised the individual construction of knowledge through active engagement and assimilation of new information into existing cognitive structures, Vygotsky highlighted the social and cultural context of learning. In both views, knowledge is constructed by the learner, shaped by prior experience and interaction with the environment [Schunk, 2016]. To mention, Piaget's work focused on cognitive development, while Vygotsky emphasised the sociocultural aspects of learning. In this particular research, constructivism can be applied to acknowledge that medical English learners can bring their pre-existing medical as well as their basic level GE knowledge and learning experiences to this specialised training sessions. This approach can also facilitate the EMP teachers to create learning environments that facilitate the construction of meaningful, domain-specific knowledge and skills, promoting effective communication within their professional contexts.

*Cognitivism,* the second theory we consider, emerged as a psychological science in the mid-20th century, focusing on the process of "learning how to learn" [Anderson et al., 2004]. It gained prominence in the 1950s and 1960s as a reaction against behaviourism. Cognitive psychology, with its focus on mental processes such as memory, problem-solving, and decision-making, became a dominant force in

psychology during that period. In contrast to behaviourism, it places the locus of learning within the cognitive abilities of the human mind rather than external environmental factors. The goal of cognitivism is to comprehend the structure and self-directed nature of learning. According to Ausubel (1968), meaningful knowledge results from integrating new information with existing knowledge. This approach emphasises internal cognitive processes over external influences [Torre et al., 2006]. Critical thinking and reflection are central to the cognitivist approach, and one practical application often used in it is concept mapping. In the context of our current research, the target learners are all adults and are perceived to have their own learning styles. Therefore, while designing tasks for them in the training system, cognitivism plays a role as it helps us to understand how learners process and integrate domain-specific knowledge, especially in their own fields like medical English in this case. Specifically, while learning medical vocabulary, understanding and sharing case studies where the comprehension and application of complex medical concepts are essential, along with the knowledge of the GE, cognitivism can facilitate meaningful learning and critical thinking.

The present research also employs *the Behaviourism theory,* which was initially proposed in the early 20th century by psychologists such as John B. Watson and B.F. Skinner, mentioning that behaviour reinforced through positive outcomes tends to persist, while behaviour subjected to punishment is likely to diminish [Rostami & Khadjooi, 2010]. Despite the emergence of newer theories, behaviourism still remains relevant in shaping student behaviour within educational settings. For example, competency-based curricula, which are known for producing consistent results,

highlight the lasting influence of behaviourism [Rostami & Khadjooi, 2010]. Pavlov and Skinner, two famous educational psychologists, also made significant contributions through classical and operant conditioning [Akpan,2020]. Operant conditioning also finds practical application in classrooms by employing positive reinforcement or withholding it, based on student performance. For example, a teacher might exempt a regularly attending student from a final exam, encouraging attendance.

While classical conditioning has a limited role in modern classrooms, it complements operant conditioning. Creating an interactive and supportive learning environment can associate positive experiences with a specific class, potentially increasing student attendance and motivation [Araiba, 2020, Schunk et al., 2012]. In our research, behaviourist principles are relevant and applicable as they can inform instructional strategies that reinforce desired language learning behaviours for the target learners. In the process of designing tasks and planning the training system, positive reinforcement techniques need to be employed to encourage consistent language practice and participation, enhancing students' language acquisition and application within their specific professional contexts.

The next theory to mention as relevant for the present study refers to *Social Learning,* which "bridges behaviourism and cognitivism and refers them …to complex societal context," "engages learners to work in group to solve problem, to carry out projects, to engage in role play and to conduct inquiry" (Rumjaun, Narod, 2025, p. 65]. Respectively, *t*his theory paves the way to organize the learning of Medical English through the domain-specific problem/inquiry/project-based assignments.

We further turn to student-centric *Experiential Learning* that implies learning by

doing, through hands-on experiences in real-world situations [Abu-Rasheed et al., 2023, Вербицкий, 2017] with learners' reflection thereon [Grant, 2025, Lehane, 2025]. This theory helps ESP learners and teachers benefit from educational content, simulations and assignments from the real-world situations of professional activities.

We also consider *Connectivism* as a vital item in the conceptual framework for our research as this theory "emphasises non-linear learning and dynamic knowledge networks [Davoodi, 2025, p.434]. Connectivism theory enables teachers to pay attention to collaborative learning networks and tasks, as well as empowers instructors to incorporate up-to-date ICT and AI-facilitated learning materials to bridge the gap in existing educational aids.

Amid a brief outline of learning theories, it deserves mention that the discussion of educational learning theories in general and language learning theories in particular remains pertinent even today, especially in fields like ESP, which is continuously undergoing a significant transformation driven by the constructivism (as the prevailing trend) and other contemporary learning theories. Understanding this shift is vital to address the evolving needs of medical English students in an era marked by rapid knowledge expansion. We should remember that any sort of ESP training system needs to be self-regulated, flexible, need-driven, relevant, collaborative, and goal-oriented. The instructional materials should be designed in such a way so that they can easily serve the needs of all the target learners with varied levels of emotional intelligence and understanding. Apart from language skills, they should also encourage character building and professionalism at the same time.

Keeping in mind the changing scenario of education needs and focus on learning

theories, now it is high time for EMP teachers, trainers and material developers to identify and embrace these changes. And for complex and rapidly changing fields like medical English teaching, such adaptation is mandatory to ensure the learning still stays effective and smoothly addresses the changing needs of learners within a stipulated timeframe. After discussing the philosophical foundations and learning theories relevant to this research, the third and next section examines the evolution and development of ESP teaching. Discussion in this section is important because it will provide an understanding of both the historical background and recent developments, understanding of which would help ESP teachers and educators respond better to changes in medical English education and learner needs.

### 1.3. ESP Teaching: Development and Current Status

Among various fields of English language teaching research, ESP is relatively new and has undergone various changes over the last forty years. Therefore, it is very difficult to incorporate all these developments within the limited scope of this thesis. But, for ease of understanding, these developments are divided into three phases covering the period from the 1960s to the present. This division will help to understand the historical background and track the recent progress in ESP teaching. Understanding this progress is important in the present context, as it would help to create the necessary foundation to discuss the role and importance of needs analysis in teaching ESP within the scope of this study.

#### *ESP Definitions and Classifications*

As has been discussed before, due to its constant development and progressive nature, it becomes very difficult to provide one single definition of ESP. However,

Robinson (1991) was the first to point out the constantly changing nature of ESP. And, over time, various researchers and scholars have endeavoured to define, or better to say, have shared their understanding of ESP in their own words, emphasizing the aspects they consider most important.

Among all, one of the most prominent and well-known definitions comes from Hutchinson and Waters (1987), who describe ESP basically as an approach in which the purpose for learning English is most important and the entire course is designed keeping those needs in mind. Next, comes Strevens (1988) who dug deeper and defined ESP through four essential features and two flexible features.

A decade later, Dudley-Evans and St John (1998) refined their concepts further, dismissing the earlier misconception that ESP is solely about teaching the language of a specific discipline, like “English for Engineering”. Rather, they provided a clearer framework by drawing a distinction between core features and variable features of ESP. They stated that ESP, (i) must be designed to meet the specific needs of the target learners; (ii) should employ teaching methods that is relevant and appropriate to fulfilling these needs; (iii) must focus on language (grammar, lexis, register), skills and genres that are relevant to the target learners’ activities.

However, regarding the variable features, they proposed that ESP can sometimes but not necessarily always (I) be limited/ restricted to a specific discipline or profession, (ii) use a distinctive methodology from General English teaching, (iii) be designed for adult learners, typically in a university or professional context. Their framework aligns with Robinson's (1991) criteria for ESP, offering a nuanced view. Although not universally applicable, this definition provides a detailed understanding of ESP,

emphasising flexibility in methodology under diverse teaching contexts and challenging the notion that ESP is inherently contrasting with General English (GE) [Gatehouse, 2001].

We take into account that ESP has been classified in various ways. Strevens (1977) initially differentiated ESP, highlighting the distinction between English for Science and Technology (EST) and other ESP in terms of occupational and educational aspects. Ten years later, in 1987, Hutchinson and Waters presented ESP as a tree (Diagram 1) with branches such as English for Science and Technology (EST), English for Business and Economics (EBE), and English for Social Studies (ESS).

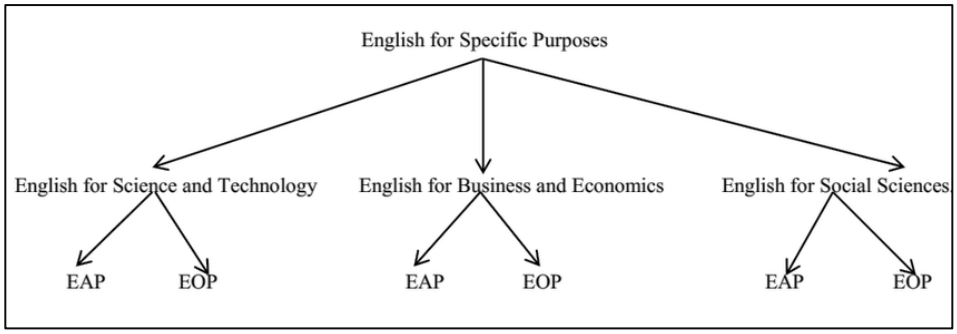



Diagram 1: Hutchinson and Waters, 1987, p. 17

These branches were further divided into English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). However, the line between EAP and EOP is not always clear. Robinson (1991) investigated detailed distinctions in an "ESP family tree," emphasising learners' experiences. In 1988, Dudley-Evans and St John provided a comprehensive classification of ESP based on professional areas, while in 2009, Belcher [Belcher, 2009] elaborated on such ESP branches like English for Academic Purposes (EAP), English for General Academic Purposes (EGAP), English for Specific Academic Purposes (ESAP), and English for Occupational Purposes (EOP). Additional sub-branches have emerged over time to cater to diverse needs in

various professional domains, aligning with the increasing global significance of ESP education. Regardless of all these divisions and subdivisions, the approach of an ESP scholar on an individual or institutional level is influenced by their perception of ESP, a concept that varies among teachers and contexts. Anyway, the above considerations justify the relevance of ESP for medical students as an area of contemporary research.

***ESP Development***

The field of English for Specific Purposes (ESP) first originated in the 1960s [Johns, 2012]. A historical overview, divided into several phases by Johns (2012) with acknowledged overlaps [Ramirez, 2015], explores ESP's development, providing new insights by incorporating modern perspectives.

The present research follows the consideration of first phase of ESP, which spans from the 1960s to the 1980s, the second phase from 1981 to the 1990s, and the third phase from 1991 to 2011 onwards; exhibiting distinct features.

In the period from 1962 to 1981, Hutchinson and Waters (1987) highlighted three pivotal factors that contributed to the initial phase of ESP development.

The first factor was the global recognition of English after World War II, driven by the economic boom in scientific, technical, and economic activities, mainly led by the United States. This growth, coupled with the arrival of Western currency and knowledge into oil-rich nations in the 1970s, increased the need for English proficiency, specifically focused on cross-cultural communication, commercial transactions, and information exchange [Teodorescu, 2010].

The second factor was the promotion of register analysis and learner-centred teaching. Linguists at that time, promoted register analysis to enhance scientific and

technical vocabulary. ESP practitioners, such as those teaching nursing students, focused on instructing specialised terms within a specific curriculum [Johns, 2012]. The rise of English for Speakers of Other Languages (ESOL) led to learner-centred teaching, emphasising needs analysis as the basis for ESP course design. This phase uncovered distinct language use variations based on whether learners emphasised writing or speaking skills [Hutchinson & Waters, 1987]. Linguists like Selinker, Swales, Ewer, Latorre, and Trimble pioneered teaching approaches that combined GE with technical vocabulary. They focused on needs analysis protocols, leading to the development of specific skill-based courses. These courses explored language learning processes, learner motivation, and strategy use alongside needs analysis.

The last major change in the development of ESP moved beyond a general focus on common English vocabulary building. Previous approaches, also known as register analysis, mainly focused on listing grammar rules and vocabulary used in specific fields like engineering, law, and medicine. It was useful but not without limitations. This approach could not explain to learners very clearly how these various elements of language work together to form clear, convincing, and coherent texts in their specific fields. This limitation gradually motivated ESP researchers to shift the focus towards discourse and rhetorical analysis—from static language forms to functional use of language, for example, how sentences can be linked to form an argument in a research paper or how the language of a manual can help the user follow instructions. This fundamental shift in ESP teaching focus led scholars like Dudley-Evans and St. John (1998) to rethink what should be included in ESP teaching materials, with greater emphasis on a communicative approach rather than mere vocabulary building.

Discourse analysis explores the communication aspects of meaningful language, expanding ESP's attention to both text and discourse analysis. ESP research maintains a strong association with contrastive rhetoric, exemplified by works such as Swales and Mustafa (1984) and Salager-Meyer's (1990) comparison of metaphors in medical research publications. The emphasis on international rhetoric, especially in ESL development, remained significant during that time [Escudero & Swales, 2011]. Bhatia et al. (2011) also contributed substantially to intercultural discourse analysis.

Therefore, the first phase of ESP development (1960 to the 1980s) shows significant changes, including global recognition, new teaching methods, and a shift to discourse analysis. The focus on cross-cultural communication and learner-centred teaching, along with the move from register to discourse analysis, reflects the dynamic nature of ESP teaching. This phase lays the groundwork for exploring how these changes shaped the field in the following phases.

From 1981 to the 1990s, ESP experienced significant global development. Research, particularly in the English for Specific Purposes Journal (ESPJ), expanded beyond the U.S. and the U.K., with key contributions from China, Central America, South America, and Hong Kong [Hewings, 2002**].** This period saw diversification in ESP topics, including English for Academic Purposes (EAP) and English for Occupational Purposes (EOP), with a shift from generic English programs to focused ESP education emphasising discourse analysis. At that time, the English for Specific Purposes Journal (ESPJ) introduced special issues addressing ESP teaching skills covering areas like teacher training, vocational ESP, interlanguage, and international teaching assistant training [Ewer, 1983; Crandall and Burkart, 1984; Selinker and

Douglas, 1987; Young, 1989]. And, regular issues focused on themes like Needs Assessment, Wide-angle vs. Narrow-angle Approach, and Genre Analysis.

This era cultivated extensive ESP discourse. Scholars examined language learning goals, assessed language requirements through interviews, and advanced research on student needs analysis. Seminal works, like Hutchinson and Waters' re-examination of ESP beliefs, emphasised a learner-centred approach, shaping ESP education with a focus on learners' needs and diverse learning styles [Jacobson, 1986; Tarantino, 1988; West, 1994; Hutchinson and Waters, 1987]. To mention, phrases that emerged at that period like "learner-centred" remain significant in the field of ESP even today.

In the 1980s and 1990s, discussions on ESP teaching methods became more complex. Two main approaches were debated: the Wide-angle Approach, teaching English across various topics, and the Narrow-angle Approach, focusing on students' specific domains [Johns, 2012]. The era highlighted a gap in theoretical work compared to practical material development [Dudley-Evans & Saint John, 1998]. The role of ESP subject specialists in providing disciplinary knowledge led to the use of "subject-specialist informants" [Tarone et al., 1981; Johns, 2012].

During the 1980s, genre analysis and rhetorical moves gained prominence in ESP, influencing research [Johns, 2012]. Understanding discourse features, as emphasised by Johns (2012) and promoted by Swales (2011), became crucial. The primary focus of research was on English for Academic Purposes (EAP), especially in the realm of English for Science and Technology (EST) at the tertiary level [Hewings, 2002]. Despite valuable insights, applying ESP research in classrooms faced challenges,

especially in translating concepts into teaching materials for writing skills. In brief, ESP in this phase globally expanded and shifted focus, emphasising learner-centred approaches and discourse analysis. While impactful terms like "learner-centred" emerged, a gap between theory and practical application became prominent, especially in teaching writing skills, highlighting ongoing hurdles that educators and researchers must address for a smoother evolution of ESP.

From 1990 to 2011, ESP experienced dynamic advancements, focusing on intercultural rhetoric, genre studies, and corpus research [Hyon, 1996; Johns et al., 2006; Tardy, 2012]. During this period, the growing prominence of two important journals—the *Journal of Second Language Writing* (JSLW) and the *Journal of English for Academic Purposes* (JEAP)—clearly showed the increasing interest in ESP research [Leki, Silva, 1992; Hamp-Lyons and Lumley, 2001]. From the perspective of progress and contribution, recent ESP studies [Dou et al., 2023] frequently rely upon Paltridge and Starfield's (2011) analysis of ESPJ publications from 2010, which identified Taiwan, China, and the United States as major contributors. However, among all their publications, an acceptance rate of only 25% clearly indicates the need for more publishing opportunities. Probably because of the changing nature and challenges of publication in the field of ESP, this period witnessed a rapid increase in genre-based research. Researchers like Swales and Swales (1990) made significant contributions to genre analysis and deserve mention. However, researchers like Crandall and Burkart (1984) and Bhatia et al. (2011) during this period focused on legal discourse. Although many scholars questioned the suitability of genre analysis,

especially for undergraduate learners, researchers like Johns (2012), through their work, tried to address these concerns and reduce existing gaps.

Innovation in genre analysis continued, with Swales (1998) exploring text-context interactions through photography. The era also saw the rise of corpus research, emphasising evaluative language in academic discourse [Hunston, Thompson, 2000]. Global ESP journals played a vital role in highlighting ESP's importance, showcasing the enduring significance of international rhetoric, genre analysis, and corpus studies in ESP research [Johns, 2012]. These scientific findings have received their reflection in applied education, which focuses not only on terminology of specialised texts but also train learners in genre types, rhetoric, and text layout in specialised discourses.

***ESP Methodology***

As we examine the three phases of ESP development, we observe a continuous evolution in teaching methods and a consistent challenge of applying theoretical advancements in real classrooms. Each phase brings unique aspects, but the noticeable gaps between theory and application, particularly in addressing writing skills, underscore the ongoing need to refine and adapt ESP teaching methods. Therefore, in this context, it is essential to understand ESP teaching. However, before inquiring about that, it deserves mention that there is a popular debate on whether ESP teaching has its own methodology at all.

When it comes to the basic question of how ESP should be taught, different experts have different views. Hutchinson and Waters (1987), for instance, believed that at its core, ESP is not a unique teaching method. They all had one common belief, that the teaching techniques used in ESP are mostly the same as those used in

General English. But they also agreed that the main difference lies in the content and purpose rather than the teaching method.

Later, Dudley-Evans and St John (1998) shared their own viewpoints on this. They acknowledged that this difference is not something very large, but they clearly emphasized that ESP has its own teaching approach. To elaborate, they said that ESP teachers should teach in ways that reflect how people from specific fields like engineering, business, or medicine think and work. This view actually signals a clear shift in the role of ESP teachers and the classroom environment. Their role shifts from that of a typical General English teacher to that of a collaborator who is expected to have some understanding of the target learners' professional background.

Strevens (1988) and Robinson (1991) support Dudley-Evans and St John, emphasising that ESP can choose its own methods and techniques as needed. Strevens mentioned that even though basic teaching activities in ESP are similar to other language teaching, ESP has the flexibility to select its own methods. Robinson (1991) proposed that while ESP may not require special language and content, it necessitates students engaging in specific activities that demonstrate their needs, especially in dealing with specialist texts. In the context of this research focusing on medical English teaching, we would not argue for a separate ESP methodology and rather underline its specificity regarding goals and objectives, educational content, training instruments and techniques, and learning outcomes, as considered from the learners' needs. Such an approach is justified as ESP methodology focuses on tailored language instruction addressing specialised skills required in specific professional context, to meet professional needs. It is crucial to underscore that the essential role of needs analysis

is strongly highlighted in recent studies [ Aguilar Sánchez et al. 2025]. Scholars also underline language-sensitive aspects regarding the training of specialised languages [Kiyko, Rubanets, 2024]. Therefore, we would not argue for a separate ESP methodology but rather align with those scholars who view ESP methodology as a specialised area of the foreign language didactics, which integrates diverse field of theoretical studies and practice [Dietrich-Grappin, Hufeisen, 2023, Rückl, Volgger-Bahensky, 2025].

Another point to be mentioned in this regard concerns the team-teaching concept and the method in ESP was introduced in the 1970s but has gained recent prominence. It involves collaboration between language and subject teachers and offers benefits such as students assessing their understanding, language teachers observing subject difficulties, and subject teachers receiving communication feedback [Hutchinson & Waters, 1987]. This method falls under "subject-language integration," with various forms. Dudley-Evans and St John (1998) detail its process, emphasising cooperation and collaboration. While challenges like heavy teaching loads exist, Robinson (1991) suggests a practical approach where one teacher handles both language and content, utilizing materials from prior collaboration. In spite of implementation difficulties, the team-teaching method holds potential and is worth considering in ESP practice.

***ESP Teacher***

Scholars have raised three central questions while debating the role of an ESP teacher.

The first question is: who exactly is an ESP teacher? Upon close observation, we can see, that most of them were former General English (GE) instructors who shifted

into teaching students with specialised professional or academic needs (Strevens, 1988). Unlike GE English teachers, ESP teachers have to be responsible for creating the curriculum, organizing, and managing the entire course (Hutchinson & Waters, 1987; Robinson, 1991). While playing all these roles, as Strevens notes, they often struggle to manage the gap between their students' expertise of the subject knowledge and their own lack of it, a task that demands significant skill.

The second question is about the necessary qualities an ESP teacher must possess. Fundamentally, they must have all the attributes of any effective educator—intelligence, sincerity, and creativity, to name a few (Sifakis, 2003). Robinson (1991) particularly stresses flexibility, describing the need and ability to switch effortlessly between being a general language instructor and a specific-purpose trainer for different groups. Mastering this skill is undoubtedly a major professional milestone which is hard to achieve. It is specifically tough for those teachers who teach English as a foreign language, and they have to juggle between their language skills and for any language teacher, this is a difficult task, if they are expected to balance their language knowledge and skills with the difficulty of teaching a specialised subject.

Finally, what does an ESP teacher actually do? In simple words, their role is both complex and varied. Dudley-Evans and St John (1998) list certain responsibilities such as teaching, designing courses, creating materials, collaborating with specialists, and conducting research. Sifakis (2003) on the other hand, expands this list adding the role of advisor and counsellor. In this regard, one critical distinction, emphasised by Hutchinson and Waters (1987), is that the ESP teacher must stop to try to be a content instructor. What they should rather do is try to think like learners in the specialised

fields they are teaching and gradually build confidence to gain insights and ask relevant, meaningful questions instead of sometimes giving subject-specific answers without fully understanding them themselves. Unlike general English teachers, ESP teachers are more flexible and play diverse roles in the classroom to create a bridge between language learning and subject knowledge. Their role becomes more prominent when the field is specialised, like medical English, where the subject knowledge is very deep, complex, and requires a special teaching approach. The reason ESP teachers are required to use this method is that it can ensure effective learning and improved communication skills in the learners.

So far in this section, we have started with the evolution of ESP, then discussed its development, and finally the current progress in ESP. Throughout, the focus remained on teaching methods, the role of ESP teachers, and many practical challenges and debates. These challenges and debates are important because, as ESP moves forward, educators and researchers will continue to face them and develop strategies that contribute effectively to the field. One point, however, deserves mention: regardless of the differences and challenges in the various phases of ESP development since the 1960s, ESP teaching has mainly been guided by needs analysis. Its importance never loses its vitality; rather, it becomes even more crucial in demanding fields like Medical English, which is the central focus of this thesis. Considering the importance of needs analysis, the next section is dedicated to its key role in designing ESP courses and its implications for teaching Medical English in the present context.

### 1.4. Needs Analysis in ESP Teaching

In the field of ESP, "needs analysis" is a popular and widely used term across different sectors, ranging from business to education. The term “needs analysis” mainly refers to the very process of identifying and assessing the specific requirements of target learners in any specialised field.

In ESP, as highlighted by Robinson (1991), needs analysis plays a very important role, evaluating learners' target and learning needs to determine their specific communicative requirements in particular fields (Brown, 1995). The gathered information guides the design of new courses or modification of existing ones. ESP, according to Ramirez (2015), is tailored to meet the specific needs of learners, and Smoak (2003) defines it as English instruction aligned with target learners' immediate needs. In ESP, needs analysis covers aspects such as English for Academic Purposes (EAP) and English for Occupational Purposes (EOP), aiming to specify the tasks students need to perform in English [Robinson, 1991]. Swales (1989) also characterizes need analysis in ESP as a formal and critical process. Unlike General English (GE), ESP learners, often at tertiary levels, are aware of their specific needs [Hutchinson & Waters, 1987].

Dudley-Evans (1987), one of the most prominent figures in ESP research, considers needs analysis an important tool that helps identify objectives and plan tasks while designing a course. ESP courses are special for their practical purposes [Mackay & Mountford, 1978], which is their main point of difference from English for General Purposes (EGP), where the focus is on general English proficiency [Crystal, 1996].

Therefore, a proper understanding of the role of needs analysis is very important for anyone who wants to create an ESP course that is effective, practical, and provides tailored solutions to individual learners' requirements while addressing their challenges.

Richards (2001) has identified six important aspects of Need Analysis:

(i) To examine the needs of the language areas

(ii) To provide an overview of the strengths and weaknesses of the entire course

(iii) To investigate any specific training program

(iv) To ensure and clarify the teachers' and learners' expectations from the course

(v) To identify the targeted abilities (Skills)

(vi) To gather relevant data related to the serious problems faced by the learner.

We also recall that concerning need- based analysis, Hutchinson and Waters (1987) emphasised learners' skills, abilities, interests, motivation, aims, knowledge, and learning style as valid components for the instruction design and implementation. Kern (2013) also highlighted the role of technology in adding creativity, motivation, and effectiveness to an ESP course.

Needs-based approach to teaching LSP assumes the focus on the teaching process and not just on final results. Consequently, the present research employs the concept of process-oriented approach to teaching [Шереметьева, Атабекова, 2025] that implies a continuous cycle of analysis, planning, implementation, and assessment that prioritises the learner's professional and communicative goals within a particular context.

Current studies explicitly also relate the concept of needs-based analysis and

approach to teaching to the personalised learning [Bernacki et al, 2021, Цветкова 2025, Юань, 2024] and underline that needs-based [approach to] training in fact means the synergy of approaches where the learners' needs and perceptions thereof top the construct. Given recent scholarly studies, it further integrates the Sociolinguistic Approach, Systematic Approach, Learner-Centred Approach, Task-Based Approach, Strategy Approach, Means Analysis, and Learning-Centred Approach [ Atabekova, 2009, Alavi et al., 2018, Saber, 2014, Шереметьева, Атабекова 2025]. Each one contributes to guiding curriculum design and instructional practices in the field of ESP.

First comes the Sociolinguistic Approach as it maps learning within societal contexts. Thus, Munby (1978) conducted research on the individual needs of learners and introduced the term "Communication Need Processor," inspiring course designers to identify learners' needs and transform them into communicative competence through course design. Jordan (2012) also found this model beneficial for identifying various tasks, activities, and language points in a course. However, Jordan criticized Munby for emphasising culture and communicative purposes while neglecting tasks and activities. West (1994) also argued that this model is intended to collect information about the learners and not from the learners.

Second is the Learner-Centred Approach as it prioritizes motivation, teaching, and learning style within an ESP course, focuses on learners, their attitudes, and feelings to express their needs and interests [Brindley, 2012]. This awareness on the part of the learner can help course developers design an effective curriculum and choose appropriate language forms and contexts for the learners [Belcher, 2009].

The next two approaches refer to the organization of teaching/learning procedure.

The Systematic Approach focuses on collecting information from learners and academic institutions. First established in 1977 by Richterich and Chancerel to investigate adults' learning needs across their learning a foreign language, this approach places importance on assessing learners' proficiency on a continuous basis. Jordan (2012) criticized this model, stating that it relies on learners' expectations and perceptions rather than their actual world, as many learners might not be aware of their needs.

The Strategy Approach also concerns the procedure of learning a foreign language, however, from the angle of the strategic goal and learning tasks in line with the skills.

The next approach is considered with reference to the learners' activities. The current study focuses on the Task-Based Approach. Developing communicative competence is the key concern of this approach, focusing on tasks and activities aligned with learners' needs in the actual world language. Researchers like Munby (1978) and Dudley Evans (1998) emphasize the four language skills, while others, such as Long (2005), focus on a comprehensive task-based approach. The present research allows a broad understanding of this approach following scholars who consider a task-focused learning as integration of varied assignments that aim to activate cognitive, inquiry, knowledge processing and reconstruction skills of learners, i.e. problem/project/case-based approaches, role-plays and simulated interactions, [ Hilola, 2025. Keo et al., 2024].

The sixth approach, Means Analysis, has been selected for the pedagogical framework of this research as it focuses on data collection based on the social features

of the teaching environment. Swales (1989) delineated various considerations, including learners' attitudes and motivation, classroom environment, teaching style, and educational policies of the language institution. These factors, as per Swales, enable course developers to create more effective, interactive, and fruitful materials.

Discussing the needs-based approach within LSP language learning theories we consider it critical to start with identifying the essence of the term. Following A. N. Shchoukin and his co-authors [Капитонова, Московкин, Щукин, 2018], J.C. Richards, T.S. Rodgers TS. [Richards, Rodgers, 2014] the current research views this approach as a general direction of learning [Щукин, Фролова, 2015], in which the relevant approach is dominant, while integrating other approaches into the learning process. Such a perspective facilitates targeted instruction that meets learners' specific communicative needs, thereby supporting the development of appropriate learning models in ESP contexts [Dudley-Evans, 1987].

In summary, the above-suggested integrated understanding of needs-based instruction allows valuable insights to curriculum and course designers, ESP teachers, and material developers in tailoring ESP courses to meet the specific needs of medical English learners. As we move to the next section on ESP course design for training and development, we will explore the practical application of these approaches to enhance communicative competence within professional contexts.

Moreover, the study of academic sources reveals that to understand learners' needs and integrated approach is required through coordinating empirical and experimental investigations that provide deeper and more comprehensive data by complementing each other, as Long (2005), Zhou and Zhang (2022), Hiver, Al-Hoorie

and Evans (2022) underscore.

### 1.5. Medical English Course Design within ESP

Waters (1994) emphasises that what sets ESP course design apart is its thorough needs analysis and specialised design of courses and materials. Martin (2012) outlines different stages, including examining learners' needs, setting goals, deciding what to teach, choosing activities, organizing materials logically, and determining assessment methods. Richards (2011) suggests a three-step process: establishing goals, explaining the importance of designing the ESP course, and selecting content. Hutchinson and Waters (1987) stress the need to choose the right topics, language areas, and goals for a successful curriculum.

The way of designing any specialised language program is difficult, likewise designing an effective Medical English course is equally or even more challenging. It is a multi-stage process that requires caution and careful planning for each and every stage. If a learner needs to assess the progress while studying in any course, this process involves a needs analysis of several interconnected stages, syllabus design, methodology, materials selection, and evaluation.

However, among all steps the first and most difficult step is to understand the specific demands of the learners and to perceive the situations in which they might use English, as mentioned by Hutchinson & Waters (1987), Dudley-Evans & St John (1998), and many others. Walker (1995) in this regard cautions that failing to clearly define this target situation can result in a poorly structured course that does not meet its objectives. On top of this, as outlined by Dudley-Evans & St John (1998) and Robinson (1991), a comprehensive needs assessment should also explore learners'

current proficiency, the specific language forms they require and the discourse and genre conventions of their medical field. In this regard, Mackay (1978) and Richards (2001) have contributed by providing practical frameworks for gathering information.

Once learner needs are identified, the next step is to construct a syllabus that fosters genuine communication. A communicative framework is widely recommended in this regard, which can be realized through situational, content-based, task-based, or text-based syllabi. Richards (1990) often suggests to blend these approaches for greater effect. As the name indicates, situational syllabus introduces language based on real-life clinical situations. Focus of the Content-based syllabus is the content and it builds lessons around medical topics, using authentic teaching materials to boost motivation of the learners. Task-based syllabus, a strong choice for second language acquisition researchers, focuses on having learners use English to complete meaningful and relevant tasks [Richards, 2001].

Therefore, it becomes clear that teaching methodology in a Medical English course should naturally align with this communicative syllabus. The approach needs to be learner-centred, where students and their specific professional activities are at the heart of the entire learning process [Hutchinson and Waters, 1987].

Moreover, in ESP testing, Alderson (1988) highlights a lack of focus and emphasises the need for more theoretical descriptions. A good ESP test should assess language ability, incorporating language knowledge and strategic competence [Bachman, 1990]. Considering ESP's focus on actual language use, Hughes (2003) suggests criterion-referenced tests (CRT) directly aligned with students' English language needs.

Finally, the creation and selection of teaching materials are crucial. ESP courses frequently depend on customised “in-house” materials which in Robinson’s (1991) opinion are locally relevant and impactful. Waters (1994) added that the study materials apart from being locally relevant should not be very complicated for both teachers and students. Teachers should feel at ease while dealing with the study materials. Therefore, the structure is very important. Following the footsteps of Walker (1995) that he demonstrated with the topic of tourism, same can also be perfectly adapted in medical field as well to guide learners in a clear and orderly manner.

In brief, all the steps mentioned earlier are equally vital for designing an effective and tailored ESP program. However, in specialised fields like medical English teaching, the stakes are higher. Understanding the significance of Medical English in ESP discourse is crucial as it addresses the specific linguistic and communicative needs of healthcare professionals, ensuring effective communication in medical settings and contributing to improved patient care and safety.

Research reveals that in recent years, English has gained immense importance in the medical field, where the majority of influential contributions are published in English [Frinculescu, 2009]. It serves as a crucial medium for transmitting information not only in American but also in international medical journals. The language's widespread use in traditional communication systems, coupled with its dominance on the internet and computer networks, has facilitated its rapid spread into various cultures [Frinculescu, 2009]. And to be more specific, over the past five years, English for Medical Purposes (EMP) has gained international prominence, solidifying its position as the primary research language in medicine, extending from Hong Kong to the United

States [Master, 2005; Swales, 2004].

Medical English stands apart from everyday language. In hospitals and clinics, doctors and health workers often have to use a specialised language that is full of technical terminology and medical jargon, where precise meaning plays more important role that so called perfect grammar. So, Medical English should not be seen as basic language instruction, but as an advanced form of communication tailored for health professionals and students in medical fields.

Therefore, the objective of an English for Medical Purposes (EMP) course is not just to re-learn foundational grammar, but to equip and enrich learners with the language skills that are needed for their social and professional interactions (Niazi, 2012). Like other specialised English courses, EMP therefore, should have to be carefully built keeping in mind the specific needs of its learners, their role, identities and objectives behind pursuing the course. The goal should be to improve their communicative competence using content-, context-, and problem-based learning styles. Barrows (1986) was one of those who indicated the relevance of integrating these pedagogical approaches to medical education in general, and to occupational communication, in particular, while Russian scholar Makhmutov [Махмутов 1975] laid theoretical grounds for such an approach.

To make classroom practice mirror real-world communication, EMP courses effectively integrate technology and a strong focus on medical terminology. While some traditional methods like teaching vocabulary lists persist (Maher, 1986), the way we determine student needs has evolved. We now carefully analyse what learners require for their academic studies (EAP) and for their future careers (EOP). As

Robinson (1991) stresses, this needs analysis is the cornerstone of EMP, using various tools to assess what learners must do with the language. The benefit of needs analysis is that, it helps to directly find and shape new courses and modify existing ones ensuring they satisfactorily fulfil the communicative demands of the specific medical fields [Brown, 1995].

However, scholars like Niazi (2012) argue that teaching Medical English demands a unique approach as with emphasis on its application rather than mastering grammar rules.

This makes the integration of authentic medical discourse with teaching skills vital. The entire course should revolve around medical language, not general English rules. A practical model, suggested by DuGas, Esson, and Ronaldson (1999), uses a two-part lesson: the first part introduces key vocabulary, and the second part applies it in context through real hospital forms, role-playing patient assessments, and discussions on treatments.

From the discussion so far, it is clearly evident that teaching Medical English requires two focuses at the same time: knowledge of grammar and specialised vocabulary, and the adoption of effective communication strategies needed in the medical field. EMP teachers as well as curriculum designers are expected to play this dual role, both as language instructors and as facilitators of students' professional development. To ensure practical and communicative competence, EMP courses should include case studies, various medical scenarios, exam preparation for the learners, inspiration for further study, and opportunities to improve communication skills for future professional development.

It would not be wrong to say that for any ESP course, the focus always remains on target learners' needs and on building their communicative competence, and English for Medical Purposes (EMP) is no different in this regard. The content of EMP being highly specialised, and the problems that the target learners face being highly distinctive, for EMP teaching, content-based and problem-based learning approaches with special emphasis on medical terminology appear to be highly effective, as they prepare learners for practical, real-life communication in the classroom.

Courses designed for health departments aim to improve learners' English skills in an ESL context, incorporating journalistic writing, reading medical literature, watching videos, and performing dramas. Bailey (2000) found this approach effective in enhancing communicative skills through discussions and group learning, focusing on appealing health issues. Textbooks for EMP cater to doctors, medical students, and those intending to work abroad, providing various skills and cross-cultural awareness. Constant updates in the medical field ensure the content remains modern in every edition [Holmstrom, 2005].

According to Shirvan (2008), there are four main reasons for medical students to learn English: to read academic papers, to participate in discussion, to explore opportunities in English- speaking countries and to use English heavily in professional career in future. Therefore, course designers while designing the courses must bear two main facts, namely, students' motivation and the viewpoint of the EMP teachers as they are the ones to use the materials in real-life classroom.

Further, it deserves mention that the worldwide skyrocketing digitalisation and rise of Artificial Intelligence (AI) is now changing higher education. This shift is also

influencing specialised fields like EMP, creating both new challenges and opportunities.

Therefore, we consider it relevant to elaborate on the mentioned phenomena from the angle of teaching English for Medical Purposes within the educational context under study.

*Digitalisation Effects on Medical English Teaching*

Current development of digital tools has a profound impact on education [Shard, Koul, 2024]. Researchers acknowledge digitalisation in language education [Dmitrenko , 2024, Jalaluddin, Ki, 2024, Premawardhena, 2025] and argue for integrating traditional e-learning tools with smart learning solutions [Basri I. Y. et al., 2025]. Scholars acknowledge the relevance of using various digital technologies in teaching Medical English [Zolfaghari et al., 2025, Dao et al., 2024], with a particular emphasis on Artificial Intelligence that has the potential to enhance education by offering personalised feedback to students and adapting to their individual learning needs and styles [Atlas, 2023]. The present research takes into account the evidence that AI applications improve learners' language skills in reading, writing, and speaking [Bailey et al., 2021; Bereczki & Kárpáti, 2021] and personalises English for Specific Purposes (ESP) learning [Klimova et al., 2023]. The release of ChatGPT by OpenAI in November 2022 is one significant development in this regard. However, the dissertation also considers challenges, related to cheating and plagiarism [Cotton et al., 2023; Gill et al., 2024], over-reliance on AI tools that can lead to a decline in students' writing and critical thinking skills [Civil, 2023]. Thus, the advances in AI-facilitated tools requires policies regulating its operation, though both international and national stakeholders acknowledge the lack of concrete regulations regarding the AI

implementation in diverse societal dimensions [Schif, 2022; OECD, 2023; Mah & Groß, 2024, UNESCO, 2021a]. Although the discussion on AI has primarily revolved around ethical considerations [Dexe & Franke, 2020, Hogenhout, 2021, UNESCO, 2021b] and responsible use [Floridi, 2021], currently the elaboration extends to the issues of literacy and skills required for efficient and safe use of AI-facilitated instruments [AI competency framework for students, 2024, Атабекова, 2024].

Regarding the present research, its experimental part was conducted in the period of 2022-2023, which did not provide much room to the study of AI integration in the respective instruction because of a combination of technological, institutional, and pedagogical constraints. Access to reliable, domain-specific AI tools and datasets were uneven across universities and hospitals, no educational policies existed allowing and structuring the AI use in the instruction. Faculty expertise in AI- instructional design was making its first steps, with instructors lacking both training and time in their busy schedule, to say nothing about institutional approval process, unclear policies about the use of third-party AI platforms, concern about data privacy and patient confidentiality [Fu et al., 2025, Zhang, Wei, 2024].

Additionally, variability in AI-facilitated infrastructure, such as classroom hardware, network bandwidth, and learning management system compatibility meant the difficulty of scalable practice. Moreover, rapid evolution of AI outpaced the research cycle, making replicable practical research challenging. Due to the above landscape, the experimental training within the present research did not incorporate the discussion of AI tools. However, it takes into account a continuous digitalisation of learning and general and educational content, in particular. When considering digital

tools for Medical English teaching / learning in Chinese context, recent publications reveal that one of the most important issues is authenticity, related to human behaviour and data in the medical context. Scholars agree that there is an increasing interest in varied digital platforms [Fu et al., 2025], mobile pedagogy [ Wang et al., 2024], as smart formats and tools for teaching and learning. Meanwhile, in terms of sources for meaningful content for targeted audiences in particular medical context, case libraries and databases, bilingual medical corpora, multimedia tools and video resources are strongly valuable [Hu et al., 2025, Zhang et al., 2024]. Given the above directions the present research considers it relevant to incorporate the issues of students preferred sources and formats for learning Medical English in the needs analysis procedure. Therefore, the research considers available digitalised instruments and sources, from the applied angles of learners and teachers' preferences and needs, as the respective data will outline.

### 1.6. Chinese Higher Educational Context and Status of ESP

China has experienced remarkable economic growth over the last four decades, with its impact evident in the education system. Given that the current research is conducted in two prestigious universities in southwest China, a detailed discussion of the Chinese higher education context and the development and status of ESP in the Chinese context is required for a better understanding of the research.

The increase in research and publications on ESP in the Asia-Pacific region, particularly in China, highlights its global significance [Basturkmen, 2022]. China, as a significant contributor, attributes its success in English language research to effective language learning policies. To grasp the ESP scenario fully, it's essential to explore the

broader context of English education in China, categorized under four main points: Project 985 and Project 211, native speakerism in English education policy, reforms in national-level English exams (CET), and textbook reforms [Lin,2018]. These perspectives lay the groundwork for further exploration of the ESP situation in China.

Beginning with Project 985 and Project 211 [Zhang, 2024; Wang & Wang, 2015; Min, 2008], the Chinese government has heavily invested in research institutions, particularly in higher education, over the past few decades to enhance academic competence and global presence. One notable initiative is Project 211, launched in 1995, aiming to elevate approximately 100 key universities and colleges across China, and Project 985, started in 1998 to establish world-class universities within China [Lin & Wang, 2021]. Currently, 39 universities are part of Project 985. Recognising the indispensability of the English language for academic research, the Chinese government has promoted English for Academic Purposes (EAP) in all Project 985 universities. It's worth noting that the two medical universities involved in this research are also part of Project 985 [ Liddicoat, 2016].

The second prevalent characteristic in Chinese English education is the historical preference for the native speakerism approach to achieve optimal outcomes Wang et al. (2020). The pursuit of perfection, particularly in English accent and pronunciation, contributes significantly to this preference. This inclination is evident in crucial policy decisions concerning the recruitment of English teachers in esteemed higher education institutions [Zhou, Y. & Ding, Y., 2020]. This approach became more operational from 2017 onward when the Ministry of Education emphasised the appointment of native language teachers from the five English-speaking countries as the fundamental

criterion [Ling, Yoon, 2024].

The third point covers China's reforms in its national-level English exams, particularly the College English Test (CET) [Zheng and Cheng, 2008]. CET assesses the English proficiency of undergraduate and postgraduate learners based on the National College English Teaching Syllabuses (NCETS). It has been in existence for 26 years, evaluating reading, writing, listening, and speaking skills. The speaking component occurs biannually, and students with scores exceeding 550 in CET 4 or 485 in CET 6 are eligible [Zhang, 2022]. Similar to the worldwide recognition of IELTS and TOEFL, the Chinese government has undertaken projects to establish the global validity and acceptance of CET tests, especially within higher education institutions worldwide. The aim is to eliminate the need for Chinese learners who qualify in CET tests to take other English language proficiency tests.

The fourth and final point highlights the Chinese government's introduction of content-based English education in elementary, middle, and high schools, as well as at the university level, as part of textbook reforms. University English textbooks now incorporate global themes related to social, economic, and political significance. Teachers are encouraged to implement Project-Based Language Learning (PBLL) to enhance engagement, interaction with content, and the development of critical thinking and problem-solving abilities [Wang, S., 2020].

However, research reveals that despite the Chinese government's efforts and years of English learning, there is a general reluctance among Chinese learners to study English [Sang, Y., & Hiver, P., 2021]. The specific reasons for this reluctance vary and are beyond the scope of the current work. However, it is intriguing that, despite this

passivity, there has been notable progress in ESP research in the last two decades. ESP in China, according to Cai Jigang (2015), developed in two phases. The first phase (1994-2004) focused on theory, and the second phase (2009 onwards) emphasised practical experimentation. With strong academic support, ESP achieved significant milestones, including the establishment of the ESP Committee in May 2011, the publication of the first ESP syllabus [Reference Framework for College English Teaching in Shanghai Universities - Trial] in April 2013, and its inclusion in the College English Teaching Guide by the Ministry of Education in China in 2017 [Xu & Fan, 2017, Xue et al 2022].

This guide promotes tailored ESP courses, further establishing ESP as a key component in college English teaching. In parallel, educational reforms in vocational majors emphasize the integration of innovative teaching technologies and practical skill development to enhance students' employability [Li, 2023].

Recent evaluations of ESP research and practice in China [Zheng Jinjing & Wu Ting, 2019; Jiang Yichao & Li Na, 2010] offer insights into the field's status and challenges. Over the last two decades, several trends have been observed, such as a notable volume of repetitive journal articles, limited depth in Chinese ESP research compared to foreign studies, and an underdeveloped ESP evaluation system leading to resource wastage [Wang Li & Wang Hua, 2019].

A growing body of research clearly shows that ESP is gaining significant importance in Chinese universities. A look through the China CNKI database reveals a steady stream of articles in top CSSCI foreign language journals, along with a growing number of MA and Ph.D. students choosing ESP topics for their theses which points to

a clear and rising academic interest.

While much of the early work was theoretical, but while undergoing the literature review, we have seen a definite shift towards empirical studies since around 2011. Chinese researchers are now focusing more on practical questions, exploring how ESP connects to and differs from College English, its role in Academic English, and how tools like language corpora and new teaching models can be effectively applied in the classroom [Cui, Kaur, 2025, Ling & Yoon, 2024].

Regarding medical English teaching in China, there is a pressing need for ample and systemic teaching materials, including textbooks and auxiliary resources, as emphasised by Hung, Dolmans, & Van Merriënboer (2019). The criteria outlined for an ideal textbook highlight the complexity of meeting diverse student needs while ensuring practicality and relevance in content delivery [Hung, Dolmans, & Van Merriënboer, 2019]. Additionally, the discussion on imbalanced curriculum offerings sheds light on the challenges faced by students in selecting suitable courses, prompting considerations for enhancing course diversity and inclusivity [Hung, Dolmans, & Van Merriënboer, 2019]. Furthermore, the preference for certain types of exercises, particularly problem-based learning (PBL), underscores evolving pedagogical approaches and the importance of student-centred learning methodologies [Stentoft, 2019]. Lastly, the emphasis on collaboration for ESP materials development highlights the interdisciplinary nature of language education and the need for concerted efforts between language and subject specialists to create authentic and effective learning materials [Jiang, Zhang, & May, 2019]. These findings inform the methodological approach adopted in this study, guiding the selection of research methods, data

collection instruments, and analysis techniques to address the identified challenges and gaps in medical English education.

To address challenges in both College English and Medical English research in China, specific courses based on thorough needs analysis are required, customized for the distinct features of universities and medical institutions [Liang, Reiss, Isaacs, 2025]. Setting standards for ESP competency and evaluation systems, along with training ESP learners and teachers, is essential, as advocated in current literature [Cai Jigang, 2015; Wang Li & Wang Hua, 2019].

Recent data from the students confirm that they "expressed a need for practical and relevant course material, with current content and textbooks falling short of preparing them for future medical communication demands. Additionally, while learning technologies were acknowledged, there was a discernible preference against their excessive application, suggesting a misalignment between student satisfaction and learning outcomes" [ Guan, Scott, 2025, p.531].

Moreover, regarding the courses in medical English for Chinese students, the empirical surveys reveal that "these courses inadequately address the 'target needs' and 'learning needs' of undergraduate medical students, failing to adequately prepare them for their future careers. Moreover, the study revealed varying perceptions on English language learning among students and physicians at different stages of their educational and professional journeys. As students advance, there is a discernible increase in their perceived importance of EMP learning, except for undergraduate students who seem to lack the willingness and motivation to actively engage in EMP learning." [Liang, 2024, p.3]. Moreover, recent research confirms the critical issues of

learners' support from teachers, and teachers' beliefs, regarding the learning process as a cognitive activity [Cao et al., 2022].

The above data supports the pedagogical relevance of the research theoretical background as introduced in the present chapter.

**Conclusion on Chapter One**

Chapter One has introduced a theoretical analysis of needs-focused studies with reference to language learning in general, and language/English for specific purposes (LSP/ ESP) in particular. The consideration of the academic literature in the chapter reveals significant progress in ESP theory and practice, issues of curriculum development. However, there is still a need to explore critical perspectives for further development. The integration of philosophical foundations, learning theories, and the evolution of ESP teaching has provided several valuable insights into the multifaceted nature of meeting learners' needs, particularly in specialised domains like Medical English in the Chinese context.

1. The study of the research theoretical background starts with the philosophical foundations. Following the investigation of academic sources, they integrate a number of areas and conceptions. First, it is epistemological foundations of specialised language that derive from the philosophy of intentionality, and its related notions: specialised purpose, individual and collective specialised intentions, specialised communities, specialised domains and specialised languages (SLs). This perspective enables educators working in the theory and practice of specialised language to justify distinct specialised goals, needs, and knowledge for both teachers and students that extend beyond mere communication. Given the research scope, which focuses on

teaching within Chinese higher education system, this study recognises the significance of exploring foreign language learning among Chinese students by drawing upon historically shaped national values rooted in the prominent Chinese major schools of philosophical thought such as Confucianism, Daoism and Buddhism. Furthermore, in acknowledgement of the author's professional development background, attention is given to the principles found in the Bhagavat Gita. The respective guidelines underscore the importance of specific duties in particular work contexts, self-realization and continuous learning, the role of dedication and discipline, the value of language skills in professional settings, and the necessity of balancing theoretical knowledge with practical expertise.

2. Regarding the relevant educational paradigms and learning theories for the theoretical background of this study, the research rests on the humanistic educational paradigm and also engages with the competence-based paradigm which is widely recognized globally and receives a renewed attention in the contemporary Chinese education. The study integrates the UNESCO and OECD frameworks of competences encompassing knowledge, skills, values and attitudes necessary for effective work and adaptability across varied social and professional contexts. This study is situated at the intersection of varied learning theories, privileging constructivist perspectives while integrating provisions of cognitivism, behaviourism, social and experiential learning, and connectivism. Although this evolution is essential for meeting learners' changing needs, it can be challenging to adapt and implement, particularly in environments where traditional educational methods are deeply rooted and resistant to change.

Such an integration of educational paradigms and learning theories respond to

the traditional historical mindset of Chinese society regarding the education values, global trends, and contemporary challenges to language issues within contemporary Chinese medical education.

3.The investigation confirms the relevance of considering ESP domain and its current status, comparing definitions and classifications. The trajectory of ESP development, marked by varying historical stages and enhancing accents on terminology, genre conventions, rhetorical strategies, and textual architecture in specialised discourses have laid robust grounds for applied training. Moreover, a brief outline of ESP teachers' diverse roles, underscore the significance of investigating teachers' profiles and needs in the scope of the present research. The consideration in ESP methodology allows the author to refrain from an ESP methodology as an isolated distinct field of theory and research and rather accentuate ESP's inherent specificity. It is determined by its unique goals and objectives, educational content, training instruments and techniques, and learning outcomes, all of which are fundamentally informed by the needs of the participants to the teaching-learning process. Such an approach holds a considerable contemporary salience as it balances with the essential role of needs analysis as strongly emphasised in recent scholarship.

The benefit of this approach is that it helps provide language instruction that is tailored and efficiently addresses the target learners' needs, and helps develop specific skills that are lacking and needed for professional development.

4. In the process of justifying the need to adopt needs-based approaches to teaching LSP, this dissertation also discusses the importance of the teaching process itself rather than the final products.

Consequently, the present research employs the concept of process-oriented approach to teaching that entails a continuous cycle of analysis, planning, implementation, and assessment, primarily aimed at cultivating learners' professional and communicative goals within a specific contextual framework. Furthermore, this investigation acknowledges contemporary scholarship that explicitly relate the concepts of needs-based analysis and personalised learning and underlines that needs-based [approach to] training fundamentally represents a synergy of approaches wherein learners' needs and perceptions thereof top the pedagogical framework for applied studies and activities. Therefore, informed by these scholarly insights, the framework presented herein, strategically synthesizes:

– sociolinguistic and learner-centred approaches emphasising societal contexts and key subjects;

– strategic and systematic approaches pertaining to the organization of educational process;

– a broad- perspective task-based approach guiding teaching pathways, methods and techniques;

– means analysis, as focusing on the data collection derived from the social features of the instructional environment.

Combining these approaches produces a unified educational perspective that addresses general teaching considerations, while reflecting cultural aspects of Chinese mindset.

5. Close examination of ESP research and practices in China gives us a clear picture of the current situation and future trends. It can't be argued that ESP research

has made tremendous progress in China, which is clearly evident in the growing number of empirical studies published in top journals by Chinese scholars. In spite of this progress, several challenges exist, such as repetitive publications, limited research depth, and underdeveloped evaluation systems. Nevertheless, these issues can be mitigated by coordinating initiatives to set ESP competency benchmarks, improved assessment techniques, and teacher customised professional development.

6. When discussing the design of an English for Medical Purposes course (EMP), recent research reveals, that despite a notable progress, Chinese medical students continue to face substantial challenges. This landscape leads the author to conclude that it is still essential to emphasise the prioritization of practical communication skills, and to integrate medical discourse with its instruction that centres on authentic clinical scenarios, thereby better preparing learners for their future professional practice.

Moreover, the design of the EMP course to teach English should take into account the traditional cultural values of the target audience; to this end, patient - centred communication aligned with Confucius' care norms, communal orientation, holistic mindset and biosocial thinking, virtue thinking and professional identity, assessment aligned with social norms, language scaffolding through real-world clinical tasks are critical for the mentioned course design. Further on, the EMP course design should incorporate digital sources that provide authentic profession-oriented contexts. In light of the developments in Artificial Intelligence, both its potential contributions and attendant concerns regarding its application to language learning warrant careful consideration. Overall, after the detailed literature review, it's fair to say that in the field of ESP, particularly EMP, significant research has been conducted over the past decade

in various areas such as needs analysis, teaching material development, teaching methods, and integration of digital tools in ESP. However, there are areas, such as the understanding of learners' and teachers' needs, materials development, needs -focused teaching process that require continuous observation and improvement.

7. The theoretical analysis of academic sources confirms the relevance of further empirical investigation of learners and teachers' needs within particular domain-specific educational contexts, and its coordination with subsequent experimental instruction. The needs-based approach to teaching Medical English to students at Chinese universities requires further specification of a construct as a pedagogical framework through which this training can be planned, organised, and implemented. Its pedagogical framework will be designed accordingly, to evaluate the validity of the author's suggested needs- based approach. The above-mentioned pedagogical construct, empirical investigation and experimental instruction are intended to be advanced in accordance with globally recognised pathways and perspectives, aligned with nationally relevant demands for domain-specific education, while being rooted in and expressed through traditional Chinese mindset.

# CHAPTER TWO.

# RESEARCH DESIGN AND METHODOLOGY

Informed by the preceding discussion in Chapter One that focused on the research theoretical background, the present chapter aims to outline the design and methodology for further research. Based on the theoretical analysis of academic sources, chapter one has proposed to integrate empirical investigation of learners and teachers' needs with the subsequent experimental instruction, through a pedagogical framework to be specified and developed to evaluate the validity of the author's suggested needs- based approach.

Therefore, the current chapter provides a brief overview of the pedagogical framework to implement a needs-based approach into training practice, specifies the educational context of the empirical and experimental research, and outlines the respective methodology. This chapter also introduces the data collection instruments, provides background information on the research participants, describes the tools employed in the study, and highlights certain limitations.

## 2.1. Pedagogical Framework for Implementing Needs-based Approach

The needs-based approach to teaching Medical English to Chinese students at Chinese medical universities requires defining a pedagogical construct through which this training will be planned, organised, and implemented. Chapter one has allowed specifying educational paradigms, learning theories, and major approaches that contribute to needs-based training of Medical English to students at Chinese universities.

The present study reveals that contemporary theory of education considers

teaching methodology, teaching, system, teaching model, and pedagogical technology are interrelated concepts in pedagogy that describe the learning process from different perspectives, as explained by Bakhanov [Баханов, 2007]. The dissertation follows this scholar while specifying the above notions:

– A teaching system is a concept with the focus of a set of interconnected elements (tools, methods, processes) that form a unified whole.

– Teaching methodology is a specific set of rules, principles, and methods for teaching a specific topic within this system.

– A model is a schematic representation of this system, reflecting its structure, with a focus on dynamic interaction of its elements in the course of their operation and functioning, as specified by Borguest [Боргест, 2024] and Jiaxin [Цзясинь, 2024].

– A pedagogical technology constitutes a model grounded in target diagnostic analysis and its outcomes, synthesising systemic and modelling dimensions with an applied and process-oriented focus of the instruction implementation, and incorporating continuous monitoring and iterative didactic refinement, as articulated by Bakhanov [Баханов, 2007] and Romanova [Романова, 2016].

The preceding specification and conceptual distinction of notions provide the practical rationale for the author's decision to employ the concept of the pedagogical technology as an operational concept in empirical and experimental investigations under the chosen thematic framework.

When examining the instruction from the perspective of pedagogical technology, scholars, i.e., Slatyonin [Сластенин, 2008], emphasise its intricate and procedural nature. They highlight specific didactical features that arise from the chosen teaching

techniques as noted by Akintayo et al. (2024), and identify specific target audiences as mentioned by Chugh et al. (2023). The considerations also elaborate on distinct levels of education and fields of training; this, in turn, highlights a specific context-dependent content as discussed by Verbitsky [Вербицкий, 2011] and Lynch et al. (2024). Additionally, Russian scholars have placed significant emphasis on differentiating the pedagogical technologies through underlining their philosophical background, specifying scientific approaches, design and implementation relative to a level of education, and their scalability, as elaborated by Bespalko [Беспалько, 1989] and Novikov [Новиков, 2013]. Furthermore, academic research also employs the terms of instructional/teaching technology as a synonym, as referenced by Erbas et al. (2025) and Stefaniak (2024).

The present study aligns with the perspective of educators who regard the pedagogical technology as a holistic process-oriented assemblage of tools for planning, designing, and implementing pedagogical activities as articulated by Bespalko [Беспалько, 1989], Slastyonin [Сластенин, 2008], Akintayo et al. (2024), Lynch et al. (2024).

The present dissertation shares the position of scholars [Кларин 1989, Селевко 2005], who specifically underline that the pedagogical technology is an ordered set of actions, operations, and procedures instrumentally ensuring the achievement of a predictable result in the changing conditions of the pedagogical process: it is a complex of pedagogical procedures that ensure the reproducibility of the pedagogical process and its results, including planning, design, implementation, and evaluation of the educational process, aimed at achieving specific educational goals, as a result of which

the final planned result is achieved, based on the professional activity of the teacher.

It is also relevant to emphasize, following Chernilevsky [Чернилевский, 2002] and Oleshkov [Олешков, 2005], that pedagogical technology is an integral (procedural) part of the learning system, directly implementing tools, materials, and organizational forms of learning into the educational process. It is this part of the learning system that answers the traditional question, “How to teach effectively?”

It is important to acknowledge that these scholars as well as numerous others, employ diverse criteria and parameters to delineate specific technologies within the contemporary pedagogical framework. It takes into account prevailing philosophical foundations and scientific paradigms of education that inform the design of a particular pedagogical technology. Furthermore, contemporary pedagogy classifies these technologies into general, domain-specific, and local (modular) categories depending on the area and scope of their application. Additionally, in alignment with existing scientific theories of learning, pedagogical technologies are categorised in line with specific theories and teaching approaches upon which they rest.

Subsequently, pedagogical technologies are differentiated by the nature of content and structure (general educational, professionally oriented). Further on, the categorisation also considers the role of the student and teacher in the educational process.

Informed by the preceding discussion, the pedagogical technology standing on needs-based approach and introduced in this study can be characterised as follows:

1. From a philosophical point of view, pedagogical technology is humanistic and competence-oriented.

2. It is mainly based on constructivism and draws references from multiple theories that we have discussed earlier in this chapter.

3. With its main focus being the needs of the learners, it gives the freedom to apply different teaching approaches, as pointed out previously in this chapter

4. In addition, the broad objective is professionally oriented, but the specific objective includes gaining specific professional competencies instead of simply following a general teaching framework.

5.Furthermore, it is domain-oriented, with a focus on content pertinent to medical students, and emphasises a student-centric approach in terms of relationship among participants in the educational process. This technology constitutes a systemic-structural entity, characterised by the conceptual, content, and procedural dimensions. However, the dissertation author understands their essence in a different way, when comparing with a traditional view, as a detailed description of the content and procedural components requires an empirical investigation of research sample needs and an experimental training aligned with both mentioned needs and elements of the conceptual component. Therefore, a preliminary description of the needs-based pedagogical framework looks, as follows:

1.The conceptual dimension encompasses educational paradigms, learning theories and approaches; such a view goes in line with the traditional understanding.

2.The content dimension includes goal and objectives, instructional conditions within the university curriculum. The needs-based approach to training does not consider the educational content and training tools at this stage as they are designed and selected on grounds of the investigation of needs of students and teachers, as

scholars preliminary suggest [Chugh R. et al., 2023].

3.The procedural dimension of the needs-based pedagogical technology should start with the diagnostic analysis to identify needs [Al-Shallakh, 2025, Ásványi, Gedeon, 2025]. It further includes the development of learning content driven by these needs; the implementation of training through tailored pedagogical conditions, including the course syllabus within the established curriculum, training materials and tools, teaching staff; and finally, assessment and evaluation. The above pedagogical framework is applied in accordance with the established principles of linguodidactics adopted in Russian school of thought [Щукин, Фролова, 2015], while although acknowledging the diversity of concepts and lists of such principles in modern international linguodidactic framework, as illustrated by Brown and Lee (2025).

The specifics of this pedagogical technology (teaching Medical English to Chinese students at Chinese medical universities) are shaped by its target audience, the needs of participants in the educational process, the professionally oriented context of learning, and its position within the national education system. However, the pedagogical technology (or a combination thereof) is part of the overall educational system for a specific target audience in specific educational settings.

Finalising the elaboration on the pedagogical technology (framework) concept, the dissertation author posits that it should align with the target audience's cultural priorities and mindset, while remaining adaptable to modern learning needs. The present research follows the general understanding of those scholars who elaborate in the mentioned issue and underline the following features for a pedagogical technology design: respect for authority and structured guidance, collectivism and classroom

harmony, emphasis of foundational knowledge, moral development, goal-directed learning [Liu et al., 2023, Yuan, 2024].

### 2.2. Research Educational Context

As mentioned before, this research was carried out in China. Therefore, to understand the setting, it is important to know a little about how college English is taught over there.

The system is generally split into two main stages. In the first stage, all students go through one year of General English (GE) study. In the first year, they study general English and prepare for the standardized university exams which is designed to give everyone practice and bring them up to a specific level in the four language skills like listening, speaking, reading, and writing.

But, in the second stage, that also lasts for a year, the focus shifts from GE to Professional English. In medical colleges, for example, in the second year, students take Medical English (ME) courses. As Wang and Wang (2011) explain, the goal of this course in the second year is to help future doctors access medical knowledge in English. The courses aim to equip the target learners with the language skills that they require to read specialised medical literature, carry out research in their fields, and take part in international conferences.

However, as seen in the last chapter, Medical English learning in China has several problems; for example, course content is too limited, teaching methods are often repetitive, there is a lack of coordination in how courses are run in different universities, and the above all the evaluation systems that fail to motivate both teachers and students.

It would not be wrong or hyperbolic to claim that if we make a conscious effort to understand the actual needs and learning goals of different stakeholders, it would be much easier to identify the most effective learning strategies and develop appropriate teaching materials. This can surely help address the currently existing issues and improve the effectiveness of Medical English teaching.

In addition, a detailed needs analysis helps clarify different views on the use of authentic teaching materials and ensures that the curriculum reflects the varied needs and preferences of stakeholders in the present research context.

### 2.3. Mixed Method Research and its Rationale

In this particular research study, we have used a mixed-method approach for both the empirical investigation and the experimental training we offered. The reasons behind choosing the mixed-method approach are manifold.

Firstly, the mixed-method approach is instrumental in providing a comprehensive understanding of the multifaceted English language needs within targeted Chinese medical universities, combining data from multiple stakeholders to provide a well-rounded perspective of the research problem.

Secondly, the quantitative analysis of the students' and teachers' questionnaire data precisely measures English proficiency and skill requisites among various medical roles.

The numbers we gather are suitable for percentage analysis and allow us to examine skill levels and specific needs in details. This approach also made it easy to identify clear patterns and requirements, and helped use to understand everyone’s proficiency and pinpoint their exact needs.

Third, the teaches' interviews helped us to gain qualitative insights that added real depth and context to the needs we identified. This information highlights the specific details, personal preferences, common challenges and other subtle but useful factors that are essential for understanding the complex language requirements for studying Medical English in China.

Furthermore, this combined method helped us to successfully connect the common challenges in learning English with the specific language needs and skill gaps across different medical jobs. The numbers from the surveys show what different groups prefer and what motivates them, while the stories and sharing from the teacher interviews give these findings a deeper, real-world meaning.

That is why this research uses a mixed-method approach, as it smoothly combines the quantitative precision with qualitative depth and helps to get a complete picture of the complex English language needs in this study.

### 2.4. Data Collection Instruments

This research utilizes a total of three data collection instruments. Specifically, questionnaires were administered to medical students and medical professionals, while interviews were conducted with faculty members from two organizations.

The questionnaire and interview questions drafting stands on the standardized methodology for the respective activities [Nirchi, 2025]. The drafting first identified those perceptions that the research intended to measure, each objective mapped the questionnaire section. The versions for teachers and students were different due to diverse experiences, practices and needs. The questionnaires used varied question types and combined close-ended items for quantification (Likert scale principles, multiple

choice, ranking) with open-ended questions for deeper qualitative insights. Closed items enable statistical analysis, open items capture nuance and local content.

The study ensured the scaling of design and response formats through suggested options for frequency, attitudes, level of importance/ satisfaction.

The drafting also considered the issues of language and cultural appropriateness

The questionnaire procedure started with the demographics and social/ professional background of the respondents, including data on age, gender, education, clinical experience.

Further on, in line with the investigation objectives, the procedure also included items on self-assessed English proficiency, exposure to Medical English, perceived importance / usefulness of the course, motivation and attitudes, perceived difficulty and challenges, teaching/learning preferences, assessment and feedback, resources, including authentic materials, teacher-specific items regarding methods, barriers, professional needs.

For this research, we created two separate questionnaires for two different groups: one for medical students, doctors, and nurses, and a different one for the ESP teachers. For quantitative data, interviews were conducted with teachers of Army Medical University in Chongqing, Chongqing Medical University, and with teachers from the School of Foreign Languages and Culture at Chongqing University with experience in teaching Medical English. The reason behind taking took this multi-step approach was to ensure that we collected data thoroughly and could cross-check our findings, to make the research results more reliable and valid. In this study we used a descriptive approach to get an accurate picture of how English for Specific Purposes

(ESP) is taught to medical students, and it focuses mainly on the information we gathered from the questionnaire responses.

***Students' Questionnaire***

The student questionnaire (Appendix I) is made up of three sections with a total of 24 questions. Each section has a distinct purpose in helping us understand the English language learning needs of different people in the medical field. We developed it using the Needs Analysis models from Hutchison & Waters and Dudley Evans & St John, though we made some modifications to fit our study.

This first part of the questionnaire focuses on collecting basic background information from the participants, such as their gender, department, English proficiency level, the primary language of communication in their faculty, and their prior experience studying English.

The questions in the second section aim to assess how important participants feel English is in the medical field. It has four questions that use a Likert scale to measure attitudes and perceptions. The first question asks how important they think English is for their medical studies right now. The second question try to find out their opinion on how important English proficiency is for achieving academic success.

The third question aims to identify their perception of the role English skills will play in their future medical careers, giving us insight into their long-term professional. Finally, the last question's goal was to understand their general attitude towards learning English, which shows us their motivation and level of commitment.

The third section of the questionnaire is subdivided into three parts: ‘Lacks,’ ‘Necessities,’ and ‘Wants.’ The goal here is to figure out the specific linguistic needs of the participants, and we used Hutchinson and Waters' model to do this.

First, through answering the questions, we wanted the participants to assess their own English proficiency across different language skills: listening, speaking, reading, and writing. And, also identify the specific language problems they face, that can range from holding a basic conversation in English to translating academic articles.

The goal of the second part was to evaluate the participants; understanding about the importance of the four language skills (writing, reading, speaking, listening) in their medical studies. They were told to justify their answers in their own words by explaining why they think a skill is necessary, based on the different situations they might encounter in a medical context in future.

Lastly, participants express their motivations for studying English, their preferred learning methods (such as pairs, small groups, or individual), the materials that facilitate their learning process, and their desired frequency for English courses. This section aims to comprehensively understand the linguistic needs, motivations, and preferences of medical students in their English language learning journey. The overall goal of the questionnaire is to gather comprehensive insights into the specific language needs and preferences of medical students at the two universities in China.

***Teachers’ Questionnaire***

The second research tool employed in this study to gather data from 51 ESP teachers is the teachers’ questionnaire (Appendix 2). The main objective of the teachers’ questionnaire is to elicit their perspectives and insights into students' English language

learning needs and effective ESP course design from the standpoint of educators.

Unlike the students' questionnaire, the teachers' questionnaire does not have separate sections; rather, it comprises a total of twenty-one questions in a mix of closed and open-ended formats. Questions One to Seven focus on gathering information about teachers' backgrounds, qualifications, teaching experiences, and ESP training. Sample questions include inquiries about their qualifications (e.g., bachelor's, master's, Ph.D., or others if applicable), teaching experience in years, and whether they have received any training in teaching ESP. Questions Eight to Twenty-One explore instructors' perceptions and views regarding students' challenging areas, existing educational aids, assessment methods, collaboration with subject teachers, and possible suggestions for further developments.

***Teachers' Interview***

A total of 20 teachers were interviewed, representing a diverse range of teaching experiences. Their responses served as a valuable research tool, offering an in-depth understanding of the perspectives and practices of educators in the field of Medical English teaching. To ensure clarity and depth in data collection, face-to-face interviews were conducted with each of the twenty teachers, and detailed notes were recorded during these sessions.

The interviews were structured into three main parts. Initially, teachers shared background details such as names (they were marked as T1, T2 etc. to respect their privacy), age groups, years of experience in English language teaching, and specific experience in teaching medical English.

The first set of questions, following initial background information, explores

content knowledge and consists of three questions. They help us to understand about the teachers' experiences with different types of students and the specific language skills they have taught in their class. This also help us to understand how teachers adjust their methods depending on their students' English levels, educational backgrounds, and personal goals. We also want to understand how a teacher's own medical knowledge affects the way they teach Medical English. By listening to their personal stories and insights, this research helps us see how teachers successfully combine medical knowledge with language teaching in their own classrooms.

The next set of questions is about teaching materials. During the interview, the teachers were asked about available Medical English teaching resources they have access to and how they choose what to use for their class. The objective here is to understand what materials they prefer most, the problems they encounter regarding selection of teaching materials and if they prefer to choose a standing Medical English textbook over creating their customised teaching materials or vice-versa.

Additionally, they explore the practical constraints faced by teachers during material development or search processes and the strategies employed to ensure the effectiveness and engagement of teaching materials. The purpose of these questions was mainly to understand how teachers combine subject knowledge with language teaching and how they choose suitable teaching materials for their Medical English classes in the present study.

### 2.5. Research Settings

The sample for this research was taken from three medical institutions, namely Chongqing Medical University, Chongqing Army Medical University, and Chongqing

University. For this research, several participants **were included**, such as medical students, doctors, nurses, and administrative staff from Chongqing Medical University and Chongqing Army Medical University. The teachers, however, were from Chongqing Army Medical University and Chongqing University. Let us have a brief introduction of these medical universities for better understanding of the context.

Chongqing Medical University (CQMU), also known as Chongqing University of Medical Sciences (CQUMS), was founded in 1956 in Chongqing, a mountain city in the southwest part of China. Although it started as a branch of the Shanghai First Medical College, it is now a well-known state key university in the region. Apart from its reputation for offering a wide range of programs in medicine, it has affiliation from the Ministry of Education to admit international students to study MBBS in English-medium mode. The World Health Organization (WHO) and the Educational Commission for Foreign Medical Graduates (ECFMG) in the United States both have recognized the course. The university is also known for its research contributions in medical technology, such as the High-intensity Focused Ultrasonic Therapy System (HIFU), recognized both in China and internationally.

The second organization, namely Army Medical University, is located in the Shapingba district of the same city Chongqing. This university is also highly reputed and is specifically affiliated with the People's Liberation Army, which is the official name of the Chinese military. It was established in 1954 by merging the then two former Sixth and Seventh Medical Universities, and it has made significant contributions. At the very beginning, the university also started as part of the Shanghai

First Medical College. Later, it grew and began offering various medical programs, from bachelor's degrees to postdoctoral study and research.

It is one of the few medical universities in China that is approved by the Ministry of Education to admit foreign students into its English-taught medical program (MBBS). This program is highly prestigious and is recognised by such an important international organisation like the World Health Organization (WHO). The university is also well-known for its advanced research and modern labs equipped with advanced medical equipment and technologies.

The second organisation, the Army Medical University, is another well-known public medical school in Chongqing under the direct control of the People's Liberation Army. It was formed in 1954 by merging two older medical universities and it has a long history in military medicine. At the very beginning, it was originally formed from several military medical schools and has changed its name a couple of times, finally becoming the "Army Medical University" in 2017. Under this university there are several important affiliated hospitals, and they also contribute to education, research, providing healthcare in that region.

The last university, Chongqing University, where the researcher himself worked and whose teachers also participated in this study, is another highly respected institution. It was founded in 1929 and it is a prominent public university which is also under the national Ministry of Education. It is famous mainly for its excellence in fields like Architecture and Engineering and it is ranked among the top 30 universities in mainland China. It has also contributed significantly in Chinese education throughout its history and was designated as a key national university in 1960. Today, it continues

to expand its academic programs and is also known for its strengths in humanities and business studies.

### 2.4. Participants

#### *Students*

A total of 156 participants in this study belong to various departments across the two medical universities (e.g., Department of Pathology, School of Medicine, Cardiovascular Department, Scientific Research, Department of Tuberculosis, Geriatrics Department, Paediatrics Department, Intensive Care Unit (ICU), Urology Department, Hepatobiliary Pancreatic Surgery, Oncology Department, Haematology Oncology Department, Radiology Department, Orthopaedics Department, Gastroenterology Department, Emergency, Respiratory Department, Neurology Department, Cardiovascular Surgery Department, Confidentiality Bureau of External Affairs Department). The selection of departments wasn't arbitrary. Firstly, both universities are highly prestigious in the southwest region of China. Secondly, gathering opinions from diverse groups across both universities provided a holistic understanding of their genuine needs in English language within the medical field.

Thirdly, the diverse group is both unique and special, as it includes different stakeholders such as doctors, nurses, and medical students from various years of their study. Therefore, their responses are very meaningful for understanding exactly how their English language needs change during their studies and years of professional training.

| **Gender** | **Frequency** | **Percentage** |
|---|---|---|
| Male | 96 | 61.54 % |
| Female | 30 | 38.46 % |
| Occupation | Frequency | Percentage |
| Student | 57 | 35.54 % |
| Doctor | 63 | 40.38 % |
| Nurse | 6 | 3.85% |
| Others | 30 | 19.23% |
| **English level** | **Frequency** | **Percentage** |
| CET 4 | 42 | 26.92% |
| CET 6 | 99 | 63.46 % |
| Beginner | 0 | 0% |
| Intermediate | 3 | 1.92% |
| Medium & Advanced | 3 | 1.92% |
| Senior | 9 | 5.77% |

Table 1: Descriptive statistics of the sample (Author's data)

As the table indicates, the total number of participants was 156, of which 96 (61.54%) were male and 60 (38.46%) were female. In terms of occupation, the group was pretty diverse. There were 57 students (35.54%), 63 doctors (40.38%), 6 nurses (3.85%), and 30 (19.23%) participants from various administrative departments. This

diverse and mixed group clearly indicates one thing: English language proficiency is important for various roles, ranging from academic to professional, in the field.

In this context, it is worth mentioning that every university graduate in China is required to pass the CET 4 test, and those with higher proficiency are expected to pass CET 6 as a mark of their English proficiency, following CEFR standards. Specifically, CET 4 indicates lower-intermediate to intermediate proficiency, while CET 6 represents upper-intermediate to advanced levels.

As we can see from the data, more than half (63.46%) of the participants had passed the CET 6 exam. Regarding proficiency levels, a small number of participants were at Medium, Advanced, or Senior levels (about 1.92% and 5.77%, respectively), but there were no participants at the beginner level. Therefore, it would not be wrong to assume that higher English skills are considered a strong and valid requirement in medical studies in China.

| **Teaching language of your institution.** | **Frequency** | **Percentage** |
|---|---|---|
| Chinese | 123 | 78.85 % |
| English | 33 | 21.15 % |
| Other language | 0 | 0 % |
| Do you learn English in your college? | Frequency | Percentage |
| Yes | 141 | 90.38 % |
| No | 15 | 9.62 % |

| Have you ever learnt English before? | Frequency | Percentage |
|---|---|---|
| Yes | 156 | 100 % |
| No | 0 | 0 % |
| How long have you learnt English? | Frequency | Percentage |
| One year | 6 | 3.85 % |
| Two years | 6 | 3.85% |
| Three years | 3 | 1.92% |
| Four years | 33 | 21.15% |
| More than five years | 108 | 69.23% |

Table 2: English learning experience of the sample (Author's data)

This table is about identifying English learning experience of the participants. Among all participants, more than one third (78.85%) participants said, they feel as ease if Chinese is their primary language for academic instructions. Only 21.15% chose English over Chinese as medium of study. This is really interesting. Among the participants we could not find any such participant who chose any other language excluding Chinese or English. When asked if they studied English in college, a huge bulk of students (90.38%) replied positive whereas only 9.62% acknowledged that they have not enrolled in the English learning course. The overall data reflects that English education is of great importance in China within the surveyed group.

From our data, we can see that all the participants who took part in this study have learned English before, and none of them are complete beginners. However, to

really understand their needs of learning English, it is important to have an idea of their previous English learning experiences in years. From their responses, it was found that most of them (69.23%) have already studied English for over five years, which undoubtedly is a significant amount of time for learning a foreign language.

Another group (21.15%) has studied English for four years. Together, this clearly indicates that the participants in our research have a strong, long-term commitment to learning English.

***Teachers***

The teachers who took part in the questionnaire survey exhibited diversity in terms of gender, qualifications, and possession of teaching certificates in the field of English language teaching.

| **Gender** | **Frequency** | **Percentage** |
|---|---|---|
| Male | 6 | 11.76 % |
| Female | 45 | 88.24 % |
| Qualification | Frequency | Percentage |
| Bachelors: | 0 | 0% |
| Masters: | 39 | 76.47% |
| PhD: | 9 | 17.65% |
| Others | 3 | 5.88% |
| Teaching Certificate | Frequency | Percentage |
| CELTA | 18 | 35.29% |

| | | |
|---|---|---|
| TESOL/ TEFL | 21 | 41.18% |
| Others | 12 | 23.53% |
| Teaching Experience | Numbers | Percentage |
| 0-10 years | 15 teachers | 29.41% |
| 11-20 years | 15 teachers | 29.41% |
| 21-30 years | 21 teachers | 41.18% |
| 31+ years | 0 teachers | 0% |

Table 3: Teachers' background (Author's data)

Among the 51 participants, 6 were males (11.76%) and 45 were females (88.24%). In terms of education, none had bachelor's degrees, 39 (76.47%) held master's degrees, 9 (17.65%) had Ph.D. qualifications, and 3 participants (5.88%) fell under the 'Other' category. Regarding teaching certificates, 18 individuals (35.29%) had CELTA certificates, 21 (41.18%) had TESOL/TEFL certifications, and 12 (23.53%) mentioned other teaching certificates. There can be other certificates offered by some Chinese institutions, for example, "Chinese Teaching English as a Foreign Language (TEFL)," although the exact names may vary from institution to institution. If a learner wants to get such a certificate, they first need to enroll in the program and complete the theoretical and practical assignments specified in the course.

As our data shows, among all teachers, 29.41% have previous experience teaching for 0–10 years, and another 29.41% for 11–20 years. Meanwhile, 41.18% of

teachers had teaching experience between 21–30 years, but none reported more than 30 years of experience.

The teachers who took part in the interviews represent a diverse range of experiences and backgrounds, as shown in the following table.

| SL No | Teachers | Gender | Age group (years) | GE Teaching Experience | ME Teaching Experience |
|---|---|---|---|---|---|
| 1 | 1,4, 39 | Female | 31 to 40 | 15 years | 15 years |
| 2 | 2, 6,41 | Female | 31 to 40 | 8 years | 8 years |
| 3 | 3, 9,37,40 | Female | above 40 | 19 years | 5 years |
| 4 | 5, 8, 43 | Female | 31 to 40 | 5 years | 3 years |
| 5 | 7, 10, 13,42 | Male | 31 to 40 | 4 years | 3 years |
| 6 | 11,14,44 | Female | Below 30 | 2 years | 0.5 years |
| 7 | 12, 16,46 | Male | Above 40 | 18 years | 18 years |
| 8 | 15, 19,47 | Female | 31 to 40 | 8 years | 8 years |
| 9 | 17, 22,45 | Female | 31 to 40 | 11 years | 11 years |
| 10 | 18,21,48 | Female | 31 to 40 | 0.5 years | 0.5 years |
| 11 | 20,22,49 | Female | Below 30 | 0.5 years | 0.5 years |
| 12 | 21, 24 | Male | 31 to 40 | 5 years | 5 years |
| 13 | 23,26,50 | Female | 31 to 40 | 13 years | 13 years |

| | | | | | |
|---|---|---|---|---|---|
| 14 | 25, 27 | Female | 31 to 40 | 11 years | 1.5 years |
| 15 | 28, 31 | Male | 31 to 40 | 14 years | 2 years |
| 16 | 29, 33 | Male | 31 to 40 | 12 years | 1 year |
| 17 | 30, 32 | Female | Above 40 | 16 years | 0.5 years |
| 18 | 33,36 | Female | 31 to 40 | 7 years | 2 years |
| 19 | 34, 38 | Male | Above 40 | 36 years | 1 year |
| 20 | 35, 51 | Male | Below 30 | 8 years | 1.5 years |

Table 4: Background of the interviewed teachers (Author's data)

According to the data, both Army Medical University and Chongqing University have a notable number of female teachers, particularly in the 31–40 age group. As the table shows, the participating teachers have a wide range of teaching experience. Some have taught English for only a few months, while others have more than thirty years of experience. However, when it comes to teaching Medical English specifically, many have comparatively less experience, often just a few years on average. The interviews were conducted to gather teachers' opinions on the textbooks available, including how suitable and accessible they are, as well as the challenges teachers face when creating their own materials from scratch.

### 2.5. Procedure

***Needs- based Analysis***

Before carrying out the main survey, the author of this thesis first tested the methods through a small pilot study.

This study involved 25 students from Army Medical University and Chongqing

Medical University. Their feedback actually helped us to improve the questionnaire's clarity through language modification and effectiveness.

After making all the necessary adjustments, the author of the dissertation distributed the final questionnaire to 200 students and received 156 complete responses that could be used for data analysis.

The author of the dissertation tried to reach students from 21 different departments of the two universities. The questionnaire was designed to find out about their current English proficiency, which language skills they found most challenging, and what they think they would want from a future Medical English course. To gather this information, the author of the dissertation mainly used Likert scales and multiple-choice questions. The respondents in the survey covers a wide range of stakeholders, such as medical students, practicing doctors, and some nurses, which helps us to get a well-rounded picture of English language needs across the medical field.

A similar procedure was followed before conducting the teachers' questionnaire. The pilot study involving 15 teachers from both Chongqing Army Medical University and Chongqing University was conducted to refine the questionnaire. After revisions, the final questionnaire was administered to 60 participants, resulting in 51 usable responses.

Relying solely on questionnaires to explore specific needs regarding ESP teaching to medical learners may not suffice and could undermine the credibility of the results. Therefore, this research incorporated detailed insights from medical English instructors. Twenty teachers, with diverse teaching experiences, were interviewed.

All of them were Chinese English teachers, with only one exception, and they came from a variety of backgrounds. Some had expertise in medicine, while others specialised in teaching Medical English. The one exception (T 18) was a native English speaker holding a bachelor's degree. Due to their diverse experience, it would not be wrong to assume that their different viewpoints are essential to understand how Medical English is taught in China, what students really need, and what the wider field requires. To make sure we understood their points clearly, we interviewed every teacher in person, one by one, and took detailed notes during each conversation.

The interviews were structured into three parts: first, teachers shared background details, for example, age groups, years of experience in English language teaching, and specific experience in teaching medical English; second, they discussed perceptions of students and emphasised teaching skills and their views on the importance of content knowledge in this specialised area; finally, they expressed their opinions on the availability of teaching materials, including textbooks and online resources. The aim of these interviews was to identify teacher preferences and challenges in medical English education within the Chinese medical educational context. Their responses are anticipated to complement the needs analysis, aiding in the development of suitable and effective teaching materials and identifying efficient teaching methods for the benefit of learners. Teachers' replies were subject to SPSS statistical processing and to computer-based thematic analysis that resulted in the formation of thematic clusters that identify the key opinions that sometimes are overlapping as some teachers produced more than one answer.

***Experimental training***

Following the findings of need-based analysis, the experimental course on medical English is to be designed. While drafting, the present study kept in mind the specifics of communication in the field [Biryukova, Kurilenko, et al., 2022] and the potential of digital instruments [Biryukova, Kurilenko, Cherkashina, Prosvirkina,2021]. The present study employed it as an operant component of the needs-based approach to implement a pedagogical technology to teach Medical English. The essential didactic features of the course refer to the orientation to the needs of both learners and teachers, implementation of team-teaching principle (collaboration of language and subject teachers). The experimental training should be supported by ongoing monitoring of the instruction with a view to prompt changes in line with learners' academic progress and feedback.

*Procedural Part of Needs-Focused Pedagogical Technology*

The above-mentioned steps and stages make it possible to identify the specific preliminary features characterising needs-based approach to teaching ESP, as reflected in the procedural part of the respective pedagogical technology.

It is expected to identify the following stages:

*Analysis Stage:* explores target learners, training contexts, specific needs.

*Identification Stage:* focuses on the following issues: requirements for instructional materials, teaching / pedagogical techniques, collaborative efforts.

*Development Stage:* focuses on designing a teaching course, comprehensively mapped in the curriculum, provided that such a course ensures needs-tailored teaching material, balanced language learning strategy, digital tools blended in the teaching

process, and collaboration with subject teachers.

*Implementation and Evaluation Stages* are to be specified in the next chapter in line with the methodology of empirical analysis of the educational process key stakeholders' perceptions and experimental training with their involvement.

### 2.6. Limitations

Before analysing the gathered data, it is important to address the main obstacles and challenges that hindered the present research, making it somewhat difficult for the researcher to obtain the required findings. Two types of limitations can be identified, notably participants and methodology.

*The participants in this study* included medical students, doctors, and nurses from various departments of the two universities, as well as ESP teachers from the other two universities. First, although the questionnaire was translated into Chinese to facilitate comprehension, some medical students, especially doctors and nurses due to their busy schedules, showed little enthusiasm and seriousness in their responses. Some did not return their questionnaires or responded irresponsibly, providing incomplete or unanswered questions. This had implications for both the data collection and subsequent analysis processes.

Second, regarding the ESP teachers who participated in the questionnaire from the two universities, numbering only fifty-one participants, efforts were made to maximize the population size without success. There were attempts to gather data from the teachers of Chongqing Medical University, whose students participated in the study; however, due to certain challenges, this could not be arranged. It is anticipated that their responses would have been beneficial in gaining a better understanding of the

teachers' perspective regarding this research problem.

Third, concerning the interviews with the teachers, it was challenging to manage time to conduct interviews with the twenty teachers who resided in different parts of Chongqing. Due to a scarcity of time and a lack of proficiency in English speaking on the part of some teachers, they could not vividly elaborate on some answers during the interview, lacking depth and interpretation. However, if the researcher could be accompanied by a Chinese native speaker during the interview, it would be more beneficial.

*The methodology of conducting interviews* posed another barrier in the present research. Despite expectations that the interviewed teachers, being highly experienced English instructors, would comprehend the interview questions well, some beginners in teaching medical English struggled to understand or interpret their replies, resulting in occasional haziness or lack of clarity in their responses.

One might argue this to be a minor issue, but it would not be wrong to say that it can still affect the findings of the study.

**Conclusion on Chapter Two**

To summarize, this chapter explains in detail the research method that has been used to study the English language needs of medical students at the university level in China.

Based on the research hypothesis, aims, and objectives of this research, which have been discussed earlier, the study mainly follows a design that includes both an empirical investigation and an experimental training component. To gain a clear and practical understanding, a mixed-method approach has been used in this research,

combining both qualitative and quantitative data analysis. All the participants were selected carefully and were from well-known institutions, namely Chongqing Medical University, Chongqing Army Medical University, and Chongqing University.

The empirical part of the study mainly focuses on the systematic collection of data related to the needs of both the target learners and Medical English teachers. This step is no doubt important, as it helps to gather reliable evidence for the study. The outcomes of the empirical investigation serve as a foundation for the development of educational resources intended to address the learners and teachers' needs. Conversely, an experiment aims to evaluate the effectiveness of the pedagogical technology (framework) that has been designed.

2. The needs-based teaching approach is implemented within specific learning conditions through a pedagogical technology conceived as a systemic-structural framework, encompassing the conceptual component as a synergy of scientific paradigms, learning theories, and approaches. The content dimension comprises learning objectives and institutional conditions. Compared with conventional approaches, the dissertation author does no incorporate the educational content and tools into the content dimension of the pedagogical technology under examination; these elements are identified following the needs-analysis stage. In this case, the specifics of the procedural dimension concern its starting point associated with the implementation of empirical needs-based analysis, and subsequent interpretation of its results that lays grounds for further instructional activities.

3.Such an approach enables the dissertation author to preliminary specify a number of components regarding the procedural dimension:

*The Analysis Stage:* explores target learners, training contexts, and specific needs.

*The Identification Stage*: addresses requirements for instructional materials, teaching / pedagogical techniques, collaborative efforts.

The research methodology identified across this chapter introduces a set of concrete instruments for *the analytical stage* which is expected to explore target learners, training contexts, specific needs. The questionnaires are to provide the data for the identification stage and shape the requirements for instructional materials, teaching / pedagogical techniques, collaborative efforts. These respective empirical findings contribute to the didactic background for the experimental course development from the angle of needs-tailored teaching.

The *Development Stage* focuses on creating a course, fully integrated into the curriculum, ensuring the materials are tailored to learners' needs, language learning strategies are well-balanced, digital tools are incorporated into instruction, and collaboration with subject teachers is maintained.

The *Implementation* and *Evaluation Stages* are to be described in the next chapter regarding the empirical investigation and experimental training of the research participants.

6. While conducting a needs-based comprehensive training, it is crucial to address limitations. It contributes to ensuring the credibility of findings. Refining methodology, enhancing participant engagement, and improving interview protocols are necessary steps for future research endeavours. The identified limitations help in-depth monitoring at the *implementation* and *evaluation* stages. The limitations to the

designed methodology for empirical investigation concern the degree of participants' experience in working with questionnaires, organizational issues (participants' schedule of work and studies), level of language mastery to provide prompt, concrete and clear replies.

7. A needs-based pedagogical technology for training the target audience under examination should be attuned to traditional Chinese educational values, is expected to harmonise disciplined teacher-guided instruction with opportunities for meaningful student engagement, contextualized content and the integration of modern tools, all aimed at cultivating both scholarly domain-specific professional competence and personal development.

# CHAPTER THREE.

# STUDENT NEEDS AND EXPERIMENTAL TRAINING IN MEDICAL ENGLISH: EMPIRICAL STUDY

The chapter contains a detailed analytical reasoning of the collected data to derive results and discussions. As mentioned earlier, this research hypothesis and goal, as reflected in its design and methodology, requires both an empirical investigation of stakeholders' needs and an experimental training based upon the needs-based analysis.

The study adopts a mixed-method approach employing various techniques.

Percentage analysis was utilised to analyse the data and achieve reliable results. Descriptive statistics were employed to accurately determine the percentages for multiple-choice questions, while qualitative analysis was used to consider the interview data based on natural language descriptions. Thus, throughout this research, the use of both quantitative and qualitative analysis helped define the data and vividly describe the intricacies, enriching the holistic understanding of research insights.

This chapter presents two segments of empirical studies. Initially, it introduces the data derived from the needs-based analysis of students' and teachers' perspectives on the Medical English instruction, along with the discussion on the relevant findings. Subsequently, the chapter outlines the experimental training developed in accordance with the needs-analysis findings reflecting the perceptions of both students and teachers.

The needs-based analysis of students' and teachers' perspectives on the Medical English instruction provides data through the use of three instruments, i.e., student's questionnaire, teachers' questionnaire, and teachers' interviews.

The students' questionnaire data reveals learners' attitude to English in Medical Studies, views of their proficiency in English, perceptions and purposes of using four language skills, motivation for learning English, students' preferred learning aids and views regarding frequency of learning.

The teachers' questionnaire data introduces teachers' professional background and LSP preferences. Their views on the Medical English Course purpose, duration, teaching methods, resources and collaboration with subject teachers, instructors' views on students' motivation, class size & assessment method, as well as the teachers' suggestions for improvement.

The teachers' interviews data provides the information on how teachers reveal the interdependence among skills taught, content knowledge and teaching materials.

The chapter further outlines the experimental training in line with the research theoretical background and methodology, introduces the course designed for the experimental instruction, highlights the course coordination with the dimensions of the pedagogical technology as a framework to teach Medical English to students at Chinese universities, specifying the features of the overall technology under examination and its procedural dimension in particular.

The validity of the findings is confirmed through the research sample body and training results obtained through standard statistical instruments (SPSSV29).

### 3.1. Students' Questionnaire Data and Its Interpretation

***Students' Attitude towards English in Medical Studies.***

The collected data clearly shows what students think about role of English in their medical studies.

| Importance of English in Medical Field | Agree | Disagree | Uncertain |
|---|---|---|---|
| English is very important in your learning | 150 (96.15%) | 3 (1.92 %) | 3 (1.92 %) |
| English is crucial for academic success | 156 (100 %) | 0 (0%) | 0 (0 %) |
| English is important for your future career | 147 (94.23 %) | 6 (3.85 %) | 3 (1.92 %) |
| Learning English is a challenge that you enjoy | 114 (73.08 %) | 27 (17.31 %) | 15 (9.62 %) |

Table 5: Students' responses about importance of English in Medical Studies

Table 5 clearly shows that almost every student believes English is very important in their field of study. Rather, every single student (100%) agreed that English is crucial for their overall academic success. A large majority (96.15%) also said it is important for their overall learning and especially for their future career (94.23%). Finally, although 73.08% of students agreed they enjoy the challenge of learning English, but, 17.31% find it to be a difficult task.

***Students' Views regarding their own Proficiency in English***

The data reveals how students view their own English skills. As the table below indicates, most students, over 94%- consider themselves as either "Good" or "Poor" at English. Although, 42.31% said English their level is "Good," but more than half (51.92%) identified themselves as "Poor." Very few students chose extreme options.

Only a small proportion, 3.85% believe they have a "Very good" level of English, and also even smaller 1.92% said that their English is "Very poor."

| Current Level of English | Agree | Disagree |
|---|---|---|
| Very poor | 3 | 1.92% |
| Poor | 81 | 51.92% |
| Good | 66 | 42.31% |
| Very good | 6 | 3.85% |

Table 6: Students' current level of English (Author's data)

What seems surprising is that not a single participant felt confident enough to rate their English level as "Excellent." This clearly suggests that most students, even those who think they are "Good," feel there is significant room for further improvement.

The reason behind such reluctance to claim higher proficiency levels demands further research, revelation of which could provide valuable insights into the participants' perceptions of their English abilities.

The next question in the questionnaire asked participants to evaluate their English skills in the specified areas and arrange them by importance.

| Areas | Very poor | Poor | Good | Very good |
|---|---|---|---|---|
| Listening | 30 (19.23%) | 75 (48.08%) | 39 (25%) | 12 (9.62%) |
| Speaking | 24 (15.38%) | 45 (57.69%) | 42 (26.92%) | 9 (5.77%) |
| Reading | 6 (3.85%) | 45 (28.85%) | 87 (55.77%) | 18 (11.54%) |

| | | | | |
|---|---|---|---|---|
| Writing | 15 (9.62%) | 78 (50%) | 54 (34.62%) | 9 (7.69%) |

Table 7: Students' English skills evaluation and prioritisation (Author's data)

The findings of the table are very interesting and manifold, which have been discussed point-wise. First of all, almost half of the participants (about 48.08%) were found to be less confident about their listening skills, and more than half (57.69%) expressed less confidence in speaking skills, which deserves attention. But surprisingly, a very good percentage of them feel confident and comfortable with their reading (80.77%) and writing skills (90.38%).

Secondly, from this table, we can infer that there is a big gap of 32.61% in the confidence level between reading and speaking, as fewer participants feel proficient in interactive skills compared to receptive and expressive skills. Thirdly, this also raises the question of why such a gap exists. A closer analysis of the data shows a clear difference (20% to 40%) between the students' self-ratings and the actual test results. If the reasons behind this gap can be identified and suitable teaching methods are accordingly improved, this can clearly support the learners. Addressing this issue will likely require a more focused and targeted teaching approach. We should reflect on our teaching methods and offer further help, particularly with the Speaking and Listening skills. Doing this probably could really help students to reduce this gap between their level of confidence and their actual skills.

The last question that was asked to students was to point out exactly where they actually struggle. The students listed a number of specific problems they face. These include struggling with learning vocabulary and grammar, not getting enough practice in writing and speaking in English, having a hard time thinking of ideas in English,

pronouncing English words correctly, and also translating from English to Chinese. We asked this question to pinpoint their exact difficulties and accordingly suggest right kind of strategies to overcome them. The table below gives a full list of what they said.

| **Problem Areas** | **Yes** | **No** |
|---|---|---|
| Holding a conversation in English? | 108(69.23%) | 48 (30.77%) |
| Framing simple questions? | 66(42.31%) | 90 (57.69%) |
| Providing responses to simple questions? | 69(44.23%) | 87 (55.77%) |
| Choosing the right word while speaking? | 111(71.15%) | 45 (28.85%) |
| Expressing ideas and thoughts clearly? | 111(71.15%) | 45 (28.85%) |
| Pronouncing medical terminology correctly? | 114(73.08%) | 42(26.92%) |
| Writing correct meaningful sentences? | 105(67.31%) | 51(32.69%) |
| Difficulties while translating articles from English to mother tongue? | 99(63.46%) | 57(36.54%) |

Table 8: Problem areas as identified by Students (Author's data)

The data in Table 8 shows that a majority of participants demonstrate confidence in conversation (69.23%), capable of choosing appropriate words when speaking (71.15%), expressing thoughts clearly (71.15%), and pronouncing medical terms correctly (73.08%). However, for some, more complex language tasks pose challenges. Framing simple questions (42.31%), providing responses (44.23%), writing accurate sentences (67.31%), and translating articles (63.46%) highlight perceived difficulties among several learners.

Analysis of the data from Tables 5 and 6 displays some agreement on areas of difficulty in English skills. While Table 5 reflects lower confidence in Listening and Speaking, Table 6 echoes challenges in holding a conversation and choosing the right word while speaking. Yet, notable discrepancies exist, such as the gap in Speaking confidence versus the reported problems in holding a conversation in English. The variations may stem from differences in the way questions were interpreted by the participants themselves, showcasing both consistent patterns and notable disparities between self-perceived English skills and identified problem areas among participants.

***Students' Perceptions and Purposes of Using Four Language skills***

The next section of the questionnaire aimed to assess the English language requirements among the participants. Its main focus was to evaluate their perceptions and purposes of using the four language skills: writing, reading, speaking, and listening. Participants were first asked to specify the exact frequency of their perceived need for each skill. Then, they were asked to provide their personal opinion about the necessity of acquiring each skill: writing, reading, listening, and speaking for their medical studies. For each skill, two questions were asked: the first question asked the participants how often they need to use that particular skill in English. The second question was why, according to them, that particular skill is necessary for medical study. The data reveals distinct patterns in participants' perceptions of the importance of various language skills.

| Writing Skills | Frequency | Percentage |
|---|---|---|
| Always | 33 | 21.15% |

| | | |
|---|---|---|
| Sometimes | 105 | 67.31% |
| Never | 18 | 11.54% |
| **Reading Skills** | **Frequency** | **Percentage** |
| Always | 72 | 46.15% |
| Sometimes | 78 | 50% |
| Never | 6 | 3.85% |
| **Listening Skills** | **Frequency** | **Percentage** |
| Always | 51 | 32.69% |
| Sometimes | 99 | 63.46% |
| Never | 6 | 3.85% |
| **Speaking Skills** | **Frequency** | **Percentage** |
| Always | 39 | 25% |
| Sometimes | 102 | 65.38% |
| Never | 15 | 9.62% |

Table 9: Students' frequency of using the four skills (Author's data)

In terms of writing skills, a noteworthy majority (67.31%) acknowledges the occasional need, while a smaller proportion (21.15%) consistently requires writing in English. Surprisingly, a minority (11.54%) claims never to require writing skills. In terms of writing skills, a noteworthy majority (67.31%) acknowledges the occasional need, while a smaller proportion (21.15%) consistently requires writing in English. Surprisingly, a minority (11.54%) claims never to require writing skills. Unlike writing skills, reading skills appear to be more important, which is clearly visible from the data.

A total of 46.15% express a constant need, while 50% say they occasionally need to read things in English. Only a very small fraction (3.85%) report that they never require it. Regarding listening skills, the data vary as well. About 33% say they always need them, 63% say sometimes, and only 4% say never. As for speaking skills, 25% say always, 65.38% say sometimes, and 9.62% say they never need them.

Therefore, one common conclusion that can be drawn from this data is that among all the skills, reading is considered the most important. Writing skills are needed occasionally; however, not everyone agrees on their importance.

However, there's general agreement on the importance of listening and speaking skills, indicating their crucial role in effective communication. Very few participants believe they never need these skills, showing a strong consensus on their significance for overall communication ability.

| **Purposes of Writing** | **Always** | **Sometimes** | **Never** |
|---|---|---|---|
| Writing research papers | 99(63.46%) | 54(34.62%) | 3(1.92%) |
| Writing medical reports | 87(55.77%) | 60(38.46%) | 9(5.77%) |
| Taking notes in lectures/conferences | 78 (50%) | 60(38.46%) | 18(11.54%) |
| Writing replies/emails to English speaking person | 87(55.77%) | 60(38.46%) | 9(5.77%) |
| Writing essays | 87(55.77%) | 60(38.46%) | 9 (5.77%) |
| Others (please specify) …… | 60 (38.46% | 81(51.92%) | 15 (9.62%) |
| **Purposes of Reading** | **Always** | **Sometimes** | **Never** |
| Reading medical journals and | 120(76.92%) | 33(21.15%) | 3 (1.92%) |

| | | | |
|---|---|---|---|
| articles | | | |
| Reading English textbooks and lecture handouts | 120(76.92%) | 36(23.08%) | 0 (0%) |
| Reading Scientific newspapers and magazines | 126(80.77%) | 30(19.23%) | 0 (0%) |
| Reading medical prescriptions | 87(55.77%) | 51(32.69%) | 18(11.54%) |
| Reading stories and novels | 85 (51.92%) | 47(36.54%) | 18(11.54%) |
| Reading graphs, charts &tables | 93 (59.62%) | 60(38.46%) | 3 (1.92%) |
| **Purpose of Listening** | **Always** | **Sometimes** | **Never** |
| Understanding discussions on medical issues | 87(55.77%) | 63(40.38%) | 6(3.85%) |
| Understanding daily conversations. | 81(51.92%) | 69(44.23%) | 6(3.85%) |
| Understanding spoken presentations in seminars / conferences. | 84 (53.85%) | 63(40.38%) | 9(5.77%) |
| Understanding English radio and TV programs. | 81 (51.92%) | 72(46.15%) | 3(1.92%) |
| Understanding visitors / guests from native speaking English countries. | 75 (48.08%) | 72(46.15%) | 9 (5.77%) |
| To understand English phone calls. | 63 (40.38%) | 75(48.08%) | 18(11.54%) |
| Others (please specify) …… | 54 (34.62%) | 90(57.69%) | 12 (7.69%) |
| **Purpose of Speaking** | **Always** | **Sometimes** | **Never** |
| Making presentations at seminars | 90 (57.69%) | 48(30.77%) | 18(11.54%) |

| | | | |
|---|---|---|---|
| and conferences | | | |
| Taking part in daily conversations | 60 (38.46%) | 72(46.15%) | 24(15.38%) |
| Presenting oral reports | 75 (48.08%) | 60(38.46%) | 21(13.46%) |
| Talking to foreign doctors / researchers | 87 (55.77%) | 54(34.63%) | 15 (9.62%) |
| Participating in negotiations | 60 (38.46%) | 54(34.63%) | 42(26.92%) |
| Attending Web-English-Talks | 69 (44.23%) | 63(40.38%) | 24(15.38%) |
| Others (please specify) …… | 54 (34.62%) | 66(42.31%) | 36(23.08%) |

Table 10: Students' purposes of using the four skills (Author's data)

This table illustrates the frequency of writing skills required for various tasks in medical research. There are several tasks that consistently require higher levels of writing skills. For example, writing research papers, medical reports, and emails meant in English for the purpose of correspondence. This number is not low; it ranges from 55.77% to 63.46%. This figure clearly indicates the high demand to improve writing skills in medical research. The necessity for reading skills aligns with writing, emphasising a constant need ('Always') for understanding technical materials, indicated by 77% to 81% of participants. However, tasks like reading prescriptions and novels show a relatively lower constant need, around 52% to 56%, possibly influenced by the EFL context.

Across medical departments, there is unanimous agreement on the importance of developing English listening skills. About 56% prioritise understanding medical discussions, while over 50% value comprehension in various contexts like

presentations and interactions with English speakers.

From the table, we can see that approximately 58% of them feel they need to improve their speaking skills for the purpose of participating in seminars and conferences where English is the lingua franca. However, 10% to 20% still exist who feel they never need to use English in day-to-day professional life. Overall, the data indicates that most of them feel effective communication in English can be an added advantage in their professional growth.

When arranged in sequence as per importance, the data shows that the highest priority goes to writing (55.77%–63.46%) and reading (46.15%–50%) in medical research. This is followed by listening (33%–63%), and the least emphasised skill is speaking (25%–65.38%). This hierarchy suggests the crucial role of writing and reading, likely influenced by academic pressures and the context of the research being conducted in China, where English is a foreign language.

***Students' Motivation for Learning English***

The final four questions in the student questionnaire were aimed at understanding the participants' motivations for studying English. They offered various options, and the results of their answers are categorized in the table below:

| **Motivation of Learning English** | **Frequency** | **Percentage** |
|---|---|---|
| For personal interest | 63 | 40.38% |
| Career development | 126 | 80.77% |
| For academic studies | 117 | 75.00% |
| No special reason | 3 | 1.92% |

| | | |
|---|---|---|
| Other reasons (specify) | 0 | 0% |

Table 11: Students' motivation for learning English (Author's data)

According to table 9, the participants' motivations for studying English are diverse. About 75% aim for academic advancement, linking English to higher education and scientific research. 81% prioritize career development, potentially seeking opportunities abroad. Nearly 40% study English out of personal interest, highlighting varied motives in this pursuit.

Regarding the medical learners' preference to take English courses: in pairs, small groups, or individually the result is as follows.

| Preferences for learning English | Frequency | Percentage |
|---|---|---|
| In pairs | 36 | 23.08% |
| In small groups | 42 | 26.92% |
| Individually | 78 | 50.00% |

Table 12: Students' preferences for learning English (Author's data)

Medical learners' learning preferences 27% favour small group collaboration for enhanced communication, while 50% lean towards individual learning. We also asked students how they like to learn English. Among the respondents, while some prefer working in pairs or small groups, the most common choice was studying alone. This preference for studying alone clearly tells us that most students might like a more personal and independent way of learning English. This is a useful finding as it can help the teachers or course designers to create lessons that fit their style.

***Students' Preferred Learning Aids***

The table below shows the learning tools that students find most helpful.

| Preferred learning Materials | Frequency | Percentage |
|---|---|---|
| Audio materials | 90 | 57.69% |
| Video materials | 129 | 82.69% |
| Handouts and/or other printed materials | 87 | 55.77% |

Table 13: Students' preferences for learning aids (Author's data)

Looking at the results from the table, we can see that video is the most popular tool by far, with 82.69% of students saying it helps them learn English most. More than half of the participants prefer audio materials (57.69%) and printed handouts (55.77%) as study materials. This shows the students' preference for a mix of different kinds of tools to study English.

The preference for audio-visual aids is likely due to the participants' tech-savvy nature, enabling them to use mobile phones or laptops or tablets and study at their convenience.

In addition, medical study involves understanding of complex concepts, diagrams, and explanations- which might be easier to understand via audio-visual aids.

***Students' Preferences regarding Frequency of Learning per Week***

As we all know, medical studies are very demanding, and they require students to devote long hours to master the knowledge of their own fields. Therefore, a very relevant question in this regard comes up: how frequently would it be preferable for the learners to spend time studying the English course?

| Frequency of learning per week | Frequency | Percentage |
|---|---|---|
| Twice a week | 96 | 61.54% |
| Thrice a week | 48 | 30.77% |
| More than thrice a week (precise) | 12 | 7.69% |

Table 14: Students' preferences for learning frequency (Author's data)

Among the options of two times, three times, and more than three times a week, 61.54% chose two times a week for their English course. However, 30.77% said they feel three times would be better, which is not a very poor figure. Only 7.69% said more than three times a week; maybe they have personal goals, which are difficult to interpret from this data. But yes, this diversity in the data is clearly based on their own learning styles, personal goals, and motivations as well.

***Interpretation of Students' Questionnaire Data***

The overall data unlocks certain key points that need to be pointed out clearly. First, in the medical field, in our research context in China, there is a significant gender gap, where males make up 61.54% compared to females, who account for only 38.46%. Second, the total number of participants with CET-6 qualification (63.46%) also shows that advanced English skills are considered important for both academic and professional success as medical professionals. Third, the number of 69.23% participants who have been studying English for more than five years clearly shows their level of commitment to mastering the language, and it indicates a feeling of the need for constant improvement among the learners.

Lastly, although within China the primary language of instruction is Chinese (78.85%), there is still a demand for English education (21.15%), probably with the hope of global integration or access to medical resources available in English worldwide.

Thus, the data represents multiple aspects of the importance of English proficiency in the medical field in the Chinese context. All participants unanimously agree on the pivotal significance of English for academic success and future professional prospects. However, self-assessment reveals a majority (94.23%) rating themselves as 'Good' or 'Poor,' with none considering their proficiency as 'Very good.' Confidence levels vary across skills, with fewer feeling proficient in interactive skills like Speaking (57.69%) compared to Reading (80.77%) and Writing (90.38%). This helps us to conclude two things. First, there is a mix of several areas where students are clearly and correctly aware of their weaknesses and certain areas where they might not be. Second, and most importantly, this means we need to use specific teaching methods that can directly target and address these problem areas.

It is also very clear that knowing English is now equally important as knowing the field of medicine itself for the target learner. However, there is a disconnect which deserve mention. Even though everyone participating in this survey agrees reading and writing are vital, but it is also true they don't get to practice them enough in a practical way.

This leads to a real puzzling situation: we already observed that many students have studied English for several years, but still a large number of them are not proficient. This shows that becoming fluent is more complicated and challenging than just spending time in a classroom learning English.

Finally, regarding the purpose, we see that different medical students have different reasons for learning and have different ways they like to study. This difference and variety in motivation and preference also shows that a single, unified teaching approach might not work for everyone in the China's medical schools.

To sum up, the above-discussed insights clearly highlight the intricate nature of the need for English in the Chinese medical context, especially from a proficiency point of view. We also noticed diverse preferences among participants, which can be addressed only if there is tailored language education with a customised approach. Also, the reason for the existing gap between speaking and listening skills needs to be identified, and accordingly, a communicative approach should be introduced to gain maximum results. Thus, a clear need for a tailored curriculum is the need of the hour, which can efficiently address all the individual needs of the learners, increase their motivation, and align well with their existing study or workload. Only then can effective outcomes be anticipated.

### 3.2. Teachers' Questionnaire Data and Its Interpretation

The second instrument used for this research is the teachers' questionnaire data. In earlier sections, we already examined the demographic details of the teachers who participated in the study in the previous chapter.

#### *Teachers' Professional Background and Preferences*

Hence, the first section discussed here provides an overview of the teachers' teaching background and preferences regarding Medical English.

| Training in ESP | Sub-Total | Proportion |
|---|---|---|
| Yes | 33 | 64.71% |
| No | 18 | 35.29% |
| **Necessity of Medical English** | **Sub-Total** | **Proportion** |
| Yes | 51 | 100% |
| No | 0 | 0% |
| Valid Participants | 51 | |
| **Why Medical English is important? (Reasons)** | | **No of teachers** |
| 1. Academic exchange and sharing of achievements | | 4 teachers |
| 2. Cutting-edge scientific information is almost entirely in English | | 6 teachers |
| 3. Writing a paper | | 3 teachers |
| 4. Reading literature and materials, academic exchange, or foreign-related medical needs | | 7 teachers |
| 5. Career development needs | | 3 teachers |
| 6. Reading professional literature | | 4 teachers |
| 7. English is a reading and writing tool for medical students | | 2 teachers |
| 8. English is an important medium for academic and professional communications in the medical field | | 5 teachers |
| 9. Reading original academic journals | | 3 teachers |

| | |
|---|---|
| 10. International exchange and cutting-edge information search | 4 teachers |
| 11. Literature; seminar | 1 teacher |
| 12. Academic reading and communication | 4 teachers |
| 13. Communication needs | 2 teachers |
| 14. Why not? | 1 teacher |
| 15. Course learning, literature reading, and professional exchange | 2 teachers |

Table 15: Teachers' professional background and preferences: ESP training and Medical English necessity (Author's data)

The data indicates that 64.71% of surveyed participants have received training in teaching English for Specific Purposes (ESP), while 35.29% have not undergone formal training in this specialised domain. All 51 valid participants unanimously agree (100%) that learning English is necessary for medical students. The data also reveals various reasons, showcasing the essential role of English in the medical field. Teachers emphasize its significance for accessing scientific data, academic exchange, career advancement, paper writing, and professional communication.

Teachers and students, both see English as a key that opens the door to international communication. They also pointed out that it is essential for the students to read and understand original research and academic texts to learn English better. While a handful of teachers had some doubts, the vast majority agree on one thing: English is not just helpful, it is absolutely essential and non-negotiable for the student's academic progress, their future professional growth and opportunities, and for staying

up to date with latest updates in their field.

***Teachers' Views on the Medical English Course: Purpose, Length, and Teamwork***

To get a better overall understanding regarding the teachers' opinions about issues they face in their day-to-day life, we asked them several practical questions. For example, how long do they think the Medical English course should continue? Which language skills among the four, as per them, are most important and should students focus on? Lastly, do they feel they should work in close collaboration with teachers with specialization in medical subjects? We felt their responses in this regard are very important, as they can help us decide the duration, set tasks according to priority, and find opportunities for collaboration.

In this way, it can help make the tailored course more effective and maintain a perfect balance between linguistic skills and medical knowledge in a very comfortable yet effective learning environment.

| **Course Duration** | **Sub-Total** | **Proportion** |
|---|---|---|
| 1 year | 12 | 23.53% |
| 2 years | 30 | 58.82% |
| 3 years | 6 | 11.76% |
| Over 3 years | 3 | 5.88% |
| **Importance of Medical English from skill's perspective** | **Sub-Total** | **Proportion** |
| Understand medical lectures in English | 51 | 100% |

| | | |
|---|---|---|
| Take part in oral English discussion | 42 | 82.35% |
| Read medical textbooks in English | 46 | 94.12% |
| Write medical reports or publications in English | 51 | 100% |
| **Collaboration needed** | **Sub-Total** | **Proportion** |
| Yes | 18 | 35.29% |
| No | 33 | 64.71% |

Table 16: Teachers' perception on course duration, skill's perspective & collaboration (Author's data)

In ESP courses, the students are different. They are adults, they have their own learning styles, preferences, and their goals for learning English are also diverse and different from each other. EMP teachers, as they encounter the students in class, understand these factors along with their weaknesses and priorities, and this is very important to understand for effective course design. This understanding can instantly reduce many challenges discussed before and maintain focus on essential areas of improvement. Table 16 provides the following data.

| Areas of Weakness | Sub-Total | Proportion |
|---|---|---|
| Vocabulary | 33 | 64.71% |
| Grammar | 15 | 29.41% |
| Spelling | 12 | 23.53% |
| Speaking | 33 | 64.71% |
| Reading | 9 | 17.65% |

| | | | | |
|---|---|---|---|---|
| Writing | | | 36 | 70.59% |
| Listening to natives | | | 12 | 23.53% |
| **Skills** | **1st Preference** | **2nd Preference** | **3rd Preference** | **4th Preference** |
| Reading | 30 (58.82%) | 6 (11.76%) | 8 (15.69%) | 7 (13.73%) |
| Writing | 11 (21.57%) | 8 (15.69%) | 15 (29.41%) | 17 (33.33%) |
| Listening | 8 (15.69%) | 11 (21.57%) | 11 (21.57%) | 21 (41.18%) |
| Speaking | 2 (3.92%) | 26 (50.98%) | 16 (31.37%) | 7 (13.73%) |

Table 17: Areas of weakness and English Skills ranking in teaching ME (Author's data)

From this table above, we can find that the teachers have identified medical English vocabulary, speaking skills, and writing skills to be the most significant areas of weakness among their students, and that number is above 60%. Comparatively, grammar and listening are found to be of less importance. While marking as per preferences among skills, the majority emphasized reading (58.82%) to be most important, followed by writing (21.57%), listening (15.69%), and speaking (3.92%). Therefore, based on teacher preferences, the hierarchy of importance, from most to least significant, is Reading, Writing, Listening, and Speaking.

***Teachers' Views on Teaching Methods and Resources***

Teachers' views on teaching materials, translation methods, and audio-visual aids is crucial for effective course design. It helps assess resource adequacy, measure the perceived effectiveness of materials, and understand the rationale behind certain teaching methods. Tailoring approaches to align with teachers' preferences enhances the overall effectiveness and relevance of the Medical English curriculum.

The following table provided teachers' views on teaching materials and use of translation methods.

| **Availability of Teaching materials** | **Sub-Total** | **Proportion** |
|---|---|---|
| Yes | 30 | 58.82% |
| No | 21 | 41.18% |
| **Teaching materials cover the needs** | **Sub-Total** | **Proportion** |
| Yes | 18 | 35.29% |
| No | 22 | 64.71% |
| Use translation while teaching | Sub-Total | Proportion |
| Yes | 42 | 82.35% |
| No | 9 | 17.65% |
| **Options about purpose of using translation** | **Sub-Total** | **Proportion** |
| Giving clues if necessary | 9 | 21.43% |

| | | |
|---|---|---|
| Translation of important concepts | 33 | 78.57% |
| Full translation into Chinese | 0 | 0% |
| **Use Audio Visual Aids in class** | **Sub-Total** | **Proportion** |
| Yes | 45 | 88.24% |
| No | 6 | 11.76% |

Table 18: Teachers' view on materials and use of translation methods (Author's data)

The data shows that 59% of teachers can easily access teaching materials, but 41% face challenges. Also, 65% express dissatisfaction with the adequacy of materials, indicating a significant shortage. This can significantly influence the overall depth and understanding of the educational content. Again, the difference we can see from this table between the required materials for teaching and the materials that are available can influence teaching to a great extent. Therefore, we need a very careful review of what additional materials are available so that the teachers can ensure a satisfying teaching experience is provided.

We also found that 82% of the teachers prefer to use the translation method to explain critical ideas during teaching, and this can save learners' time to a great extent in certain situations.

***Teachers' Views on Students' Motivation, Class Size & Assessment Method***

This aspect is also very important. We should understand that for preparing an effective ESP course, we need to consider the critical observation points of the teachers in their classroom. In this research, we gathered their insights regarding students' motivation,

appropriate class size, and their preferred assessment methods. As they are the ones who follow and implement the curriculum in the classroom, their firsthand experience is very important to understand for the overall success of the course design.

This input guides instructors in maintaining student interest and participation. Understanding the class sizes, they prefer and assessment formats they use enables us to design a more supportive learning setting. Consequently, instructional approaches can align with both medical students' learning requirements and teachers' strengths. The table below presents teachers' responses on these matters.

| **Interested in Learning ME** | **Sub-Total** | **Proportion** |
|---|---|---|
| Most of them | 33 | 64.71% |
| Some of them | 18 | 35.29% |
| Few of them | 0 | |
| **No of students in ESP class/ group** | **Sub-Total** | **Proportion** |
| 10 students | 31 | 41.18% |
| 20 students | 27 | 52.94% |
| More (30 to 40) | 3 | 5.88% |
| **Students' assessment method** | **Sub-Total** | **Proportion** |
| Oral test | 0 | 0% |
| Written test | 30 | 58.82% |
| Both | 21 | 41.18 |

Table 19: Teachers' view on students' motivation, class size & assessment method (Author's data)

The table indicates that a significant number of teachers believe most medical students are enthusiastic about learning English, with 64.71% perceiving strong interest and 35.29% observing some interest. This suggests widespread eagerness among medical students to excel in English acquisition. Regarding class size preferences for English for Specific Purposes (ESP), teachers show diverse opinions. About 52.94% prefer a class size of 20 students, 41.18% lean towards smaller groups of 10 students, and 5.88% consider larger classes of 30 to 40 students. In terms of assessment methods for English proficiency in medical contexts, teachers adopt a balanced approach. A majority (58.82%) prefer written tests, emphasising the importance of assessing written language skills. Additionally, 41.18% favour a combination of oral and written tests, recognising the need to evaluate both verbal and written language proficiencies in medical students.

***Teachers' Suggestions for Improvement***

The final question in the questionnaire was open-ended, where the teachers were asked to share their ideas on how to enhance the effectiveness and usefulness of the medical English course in their given context. Their responses have been categorized as the following.

| Replies | Number | Percentage |
|---|---|---|
| Currently unavailable | 5 | 9.80% |
| I hope you can organise medical English teaching in Chongqing | 5 | 9.80% |
| Adequate analysis of learning situation; | 12 | 23.53% |

| | | |
|---|---|---|
| Make students aware of the instrumental and professional nature of medical English. Efficient flipped classroom in blended learning. | | |
| Enhancing interest and self-awareness in learning can be achieved by introducing students to afterschool learning apps or micro courses, allowing then to exert their subjective initiative and make good use of their after-school time for learning. | 15 | 29.41% |
| Directly using direct materials | 5 | 9.80% |
| Lack of experience | 9 | 17.65% |

Table 20: Teachers' response to make medical English course effective (Author's data)

The teachers' feedback shows a range of different opinions. Using learning apps and online micro-courses was suggested by 29.41% of all teachers. All of them believe that as Chinese students are busy, but they all love technology and spend time on computers, iPads, and mobile phones, these tools can help students take charge of their own learning after school.

Another big group, 23.53%, recommended a blended learning method with a flipped classroom. Nonetheless, to be specific, not all feedback from the teachers was positive. 17.65% of teachers, although not a large number, but they openly acknowledged that they lack the experience to teach effectively.

This mix of all their answers helps us to come to a clear conclusion: there is a

real desire, or better to say preference, to use technology and new teaching models. But to make that happen, we must also provide strong support and training for the teachers who are expected to use them

***Interpretation of Teachers' Questionnaire Data***

This survey helps us understand the medical English teachers themselves.

By looking at their backgrounds, what they prefer, the challenges they face, and their suggestions, we get a full picture of how English is taught in Chinese medical schools today. Putting all their answers together gives us valuable ideas for how to make this education better.

*Categorisation of Findings*

The findings are categorised into five main areas: (i) demographic insights; (ii) necessity of English courses and preferences; (iii) challenges and weaknesses of students; (iv) issues regarding teaching materials; (v) suggestions for improvements; and a conclusion.

*Demographic Insights.* According to the sample, it's found that there are more female participants than males, and many had master's degrees. Most teachers also had varied teaching experiences; however, there were no participants with over 30 years of expertise. Many teachers had training in ESP, but some didn't, which might indicate potential gaps in pedagogical preparation.

*English Necessity and Course Preferences.* Regarding the necessity of English, the preference for a two-year ESP course by most teachers reflects the perceived complexity of medical language needs in their teaching context and the need for in-depth language immersion as well.

*Challenges and Student Weaknesses.* Students' weakness in such areas as writing, speaking, and vocabulary underscore the need for customised learning/teaching, with a consistent focus on the respective fields, due to a period required for the mentioned skills training. This again proves the requirement of an interdisciplinary approach and a very balanced focus on the four skills as per the needs of the target learners.

*Resource Challenges and Teaching Methodologies.* Apart from other issues, availability of appropriate ready-made teaching materials in the market is a significant concern among many teachers. Probably medical English is comparatively complex and demanding; therefore, there is a prevalent reliance on the translation method among teachers while teaching. The concern regarding whether target language acquisition would be maximized while using the communicative approach in the current scenario is another issue that cannot be ignored, especially in developing speaking and listening skills. Regarding the use of audio-visual materials in the classroom, although audio-visual aids are preferred, the absence of oral tests during assessment raises questions about evaluating learners' language competencies. It is true that this scarcity of resources and over-reliance on translation methods can interfere with effective language learning and assessment, but in all situations, the requirement for an effective tailor-made curriculum that can provide room for innovative teaching approaches for passionate teachers through immersive methods still exists.

*Suggestions for Improvement and Acknowledged Importance of English.* As for suggestions for improvement, technology integration and blended learning approaches can solve several issues to a great extent. But this would require teachers to be innovative and take up the responsibility to identify what works best in their own

teaching context. Again, it is difficult to ensure in practical situations if all teachers are skilled, passionate, and professional enough to integrate digital tools in their classrooms. Only if teachers are efficient, eligible, and willing can learners also understand the importance of English in medical education in different forms, such as attending and giving lectures, writing and reading medical reports, participating in discussions, and reading literature—skills that are mandatory for their career development and contribute in a global context.

Thus, there is a clear need for teacher training. This is just as important as the push to use new teaching methods. It would not be wrong to claim that English is considered to be vital, not just for school education but also for the medical professional's career development and exchanging knowledge worldwide

*Interpretations and Conclusions*

Based on the comprehensive analysis of the data collected from medical English teachers, several key conclusions and critical interpretations emerge.

Interpreting the overall data collected from the teachers, in this study, we can draw several conclusions.

First, every teacher agreed that English is essential for medical students. This itself indicates, that specifically designed English Language training or in other words, tailored English Language training is of immense important in the field of medicine.

Second, many teachers, who participated in our research clearly reveals their dissatisfaction with the ready-made teaching materials available in the market. This lack of good resources is a major problem. It can make it harder to teach a good Medical English course and needs to be fixed.

Third, teachers often use Chinese translation to help students understand. But this might be holding students back in speaking and listening. We should try to use a more balanced style that gets students practicing real communication.

Fourth, teachers pointed out that students are particularly weak in learning and memorising Medical English vocabulary, speaking and writing in English as well. This tells us we need to target these areas with specific lessons. Also, since the courses focus so much on reading, we should probably adjust the teaching to give more attention to the other skills.

Fifth, teachers suggested using technology and blended learning approach (like flipped classrooms). From this, we can say that they believe, new methods could make the courses better. However, many also worry they don't have enough experience with these digital tools. This means that for new methods to work, teachers must receive proper training and support.

Finally, Medical English teachers and medical subject teachers do not work together much. This lack of teamwork makes it difficult to connect language learning with medical learning.

Only if a strong partnership is built, then developing and implementing a unified and effective program would not remain difficult anymore.

So, to summarize, although there are many identified problems, there exist several possibilities. To make the medical English courses much better in China, what is required is: find better resources, update the teaching methods as per the situational needs, encourage collaboration among English and subject teachers, and sincerely work on medical English teacher training.

### 3.3. Teachers' Interviews Data and Its Interpretation

From the previous chapter, we now already know about the background of the interviewed teachers. Therefore, in this section, we tried to analyse the findings and interpret their responses to get a better understanding of the different aspects regarding medical English in China.

***Students Taught and Teachers' Perceptions about Content knowledge***

The table on the next page lists the students the teachers had taught and what the teachers think about how important it is for the students to really know their subject as future professionals. Appendix 3 provides the questions used. The replies were subject to computer-based thematic analysis that resulted in the formation of thematic clusters that identify the key opinions that sometimes are overlapping as some teachers produced more than one answer. The clusters reveal the connection between the type of target teaching audiences and key areas of learners' demands that respectively require a specific focus from teachers. The data is introduced in the table below.

| Cluster | Target Teaching Audiences/Students | Areas of Students' Demands/ Teachers' Focus |
|---|---|---|
| Cluster 1. | **Medical staff (doctors, nurses, administrators) with varying English proficiency** | |
| | Focuses on integrated English ability | value in textbooks but focus on developing own materials. |
| | general medical English;<br>reading, translation, writing focus | Content knowledge aids in understanding; medical terminology |
| | listening and speaking skills | Balanced content knowledge and general English; prefers own materials tailored to specific student research field. |
| | | Focus on listening and speaking; content knowledge aids in communication. |
| | reading, writing, and cross-cultural communication | Focus on medical vocabulary; content knowledge considered less crucial. |
| | Band-4 to Band-6 level; focused on expanding medical vocabulary | Focus word-building technique; content knowledge aids in memorization. |
| **Cluster 2. Staff of varied roles** | | |
| | daily English in a medical context | Focus on General English improvement; on developing own materials despite challenges in content and level matching. |
| **Cluster 3.** | **Postgraduates; Doctor candidates** | |
| | Mainly medicine majors; emphasised both general English skills and specialised Medical English | Vital for specialised Medical English skills, integrates teaching methods with content knowledge for more effective instruction. |

| | | |
|---|---|---|
| | skills | |
| | Nursing English to 2nd-grade nursing majors; focused on nursing vocabularies and linguistic knowledge | Crucial for effective teaching; focuses on nursing vocabularies and linguistic knowledge, despite not emphasising nursing profession extensively. |
| | Medical students and English majors; proficiency in English and specialised knowledge crucial | Proficiency in English and specialised knowledge are crucial; prioritizes self-guided textbooks and professionalism in material selection. |
| | Postgraduates aiming to publish in SCI journals; genre knowledge vital for writing | Genre knowledge vital for writing; challenges in material development due to proficiency and richness. |
| | Medical postgraduates in Academic English for Medicine; focused on reading and writing research articles | Vital for teaching; demands a clear understanding; recognizes value in both textbooks and teacher-compiled materials. |
| | 8 yrs program students;<br>Postgraduates;<br>Doctor candidates | Understanding core biomedical knowledge is essential for teaching English for medical purposes and biomedical research paper writing. |
| | Postgraduates<br>Doctoral students of clinical medicine for research paper writing skills | Writing skills focus does not heavily rely on content knowledge; more emphasis on biomedical research paper writing skills without deep research focus understanding. |
| **Cluster 4. Majors** | | |

| | | |
|---|---|---|
| | Second-year college students majoring in medicine; emphasised PBL, lecture, and student-centred teaching | Crucial for better comprehension, linking English teaching with subject learning, emphasising Problem-Based Learning (PBL), lecture, and student-centred teaching. |
| **Cluster 5. Freshmen and sophomores in undergraduate studies** | | |
| | Freshmen and sophomores in undergraduate studies, including medical students | Critical for language correctness; emphasises creating own teaching materials, fostering an international perspective, and innovative thinking. |
| | Sophomore students in clinical, dental, anaesthesia, imaging, and related fields | Medical background aids in setting clear objectives; content knowledge is vital in authoring suitable teaching materials for syllabus. |
| | Junior students in clinical medicine; postgraduates and doctoral candidates in biomedical medicine | Vital for expanding medical vocabulary, important in research paper writing; prefers own materials due to limitations in available textbooks. |
| | Above-undergraduate students focused on writing and publishing SCI papers | Crucial for effective teaching, understanding the logic of papers; prefers a mix of textbooks and self-developed materials. |
| **Cluster 6. Teachers** | | |
| | Medical English with a focus on teaching word formation; Band-4 or Band-6 level students | Emphasises English level's impact on learning outcomes; content knowledge aids in word formation techniques. |

Table 21. Clusters on teachers' perception about content knowledge in Medical English teaching (Author's data)

From Table 21, we can see that the teachers whom we interviewed have faced a very diverse group of students, which includes graduates, undergraduates and postgraduates, medical students, doctors, and nursing staff. Not only that, they also have different levels of English language proficiency, needs, and purposes for learning English.

Teachers are also experienced with different types of students. For example, T1, T2, and T3 are experienced with college-level medical students. They focused on teaching how to write research papers and mainly followed a problem-based teaching (PBL) approach and a student-centered approach. But, contrary to them, T4 and T6 had experience teaching general English and medical English to undergraduate students. T9, T11, and T13 had experience with postgraduate students who have advanced-level requirements, such as academic reading and writing for publication purposes in SCI journals. Thus, the data collected and used in this research not only demonstrates the diverse needs of students across multiple levels and requirements but also presents the necessity of blending general English proficiency with medical English (terminologies, etc.) as well.

When analyzing the responses regarding "crucial English skills," we can see that the teachers' teaching also focuses on developing several critical English language skills of the medical students. To be more specific, some teachers (T1, T2, and T11) emphasized understanding the content of biomedical research papers for reading and writing, whereas some teachers aimed at prioritizing improving English proficiency across all four skill areas. Teachers like T3, T4, and T18 felt content knowledge is very important for specialised fields like medical English, and linking language skills with

subject knowledge is a must. In this way, the overall perceptions, if covered thoroughly, show that their combined views provide a nuanced yet holistic approach toward teaching medical English.

Apart from the above-mentioned teachers, some other teachers like T1, T3, and T11 stressed the importance of subject knowledge as well. Therefore, it would not be wrong to say that content knowledge plays a pivotal role in effective medical English teaching. Along with content knowledge, balancing specialised and general English skills is equally important, and this becomes more evident from the responses of T6 and T20. In addition to all the above-mentioned points, we can also find that teachers showed their own preferences regarding existing and personally developed teaching materials according to the needs of the target learners.

Moreover, the results reveal that there is a perspective for some coordinating guidelines for medical English education. Teachers like T13 advocate for a standardized didactic framework to enhance consistency and efficacy in instruction, ensuring that students receive comprehensive and standardized language training aligned with their academic and professional objectives.

Along with content knowledge, the quality of teaching materials plays a crucial role in shaping teaching methods, style, and their impact on learners. This next few question (question number iv, v, vi of Appendix 3 of the interview therefore, explores teachers' views on the credibility and availability of textbooks, along with the challenges they face in developing materials. Key points from teachers' responses on the availability and effectiveness of existing teaching materials, as well as challenges in material development for teaching Medical English, are summarised in Table 22 that

aligns the teachers' responses about the type of teaching materials with the student body types, and the focused areas of learning/ teaching. The data reveals a number of issues as follows. In terms of the potential specifics there is no strong and consistent correlation between the specific categories of students as the target audiences and the specific/diverse ways of materials development. The data reveals that there is no strong correlation between preferences for existing textbooks or teacher-developed materials and the target learning audiences. The data mostly reveals positive and challenging issues regarding the material development for specific target audiences. As the teachers- respondents often work with several categories of learners the replies refer to several target groups of students and might overlap.

| Cluster | Teachers' Views on Teaching Materials Selection |
|---|---|
| **Cluster 1. Medical staff (doctors, nurses, administrators) with varying English proficiency,** | - **Criteria considered**: suitability, usability, timing, and authenticity of materials.<br>*Preference for own materials*<br>- Prefers own materials over textbooks for Medical English teaching.<br>- Own materials readily available but require adaptation for diverse student groups.<br>- Authentic material vs. teacher-modified material debate.<br>- Potential advantages of own materials: showcasing cultural diversity, addressing cultural values impacting health outcomes.<br>- Material development is enjoyable yet challenging and time-consuming.<br>*Use of Internet*<br>Relies on the internet for video/audio/text resources, aiding familiarity with Medical English.<br>*Preference for textbooks*<br>- Preference for textbooks due to suitability, ease of adaptation, and perceived learner preference in the Chinese context.<br>- Believes textbooks are essential due to limited medical expertise.<br>- Recognizes textbooks aid in understanding medical content and structuring teaching effectively.<br>- Unfamiliarity with the medical field and inadequate information on students' proficiency and needs before class<br>- Importance of combining textbooks with supplementary materials. |

| | |
|---|---|
| | - Time-consuming process of developing own materials.<br>*Challenges*<br>- Difficulties encountered while developing own materials due to varied learner abilities/ English proficiency levels.<br>- Co-created syllabi potentially motivating but not feasible due to the diversity of specializations.<br>- Concerned about personal bias affecting material selection based on preferences and teaching experiences.<br>- Challenges faced regarding text accessibility using OCR scanners<br>**- Values control over content and pacing in teaching.** |
| **Cluster 2. Staff of varied roles** | - Prefers established textbooks created by professionals and widely used.<br>- Recognizes limitations in personal capacity to create a textbook but supplements with related videos and articles<br>- Both textbooks and teacher-developed materials aid in medical English learning (due to varying needs. |
| **Cluster 3. Postgraduates; Doctor candidates** | - Limited personal background in medicine affects material development.<br>- Time-consuming nature of searching for materials is a drawback.<br>- Existence of good quality textbooks that are readily available.<br>- Extensive research and consultation with medical experts are often required. |

| | |
|---|---|
| | - Consider developing custom materials due to inadequacy of existing textbooks.<br>- Challenges entail sourcing suitable materials through extensive search and expert consultation. |
| **Cluster 4. Majors** | - Both textbooks and teacher-developed materials aid in medical English learning.<br>- Difficulty in finding suitable textbooks necessitates material development.<br>- Challenges in finding or developing materials due to varying needs and lack of standards.<br>- Prefers established textbooks created by professionals and widely used.<br>- Recognizes limitations in personal capacity to create a textbook but supplements with related videos and articles.<br>- Faces challenges in sourcing appropriate supplementary materials.<br>- Prefers creating own teaching materials due to varied quality in existing textbooks.<br>- Sees benefits in alignment with the curriculum outline and enhanced flexibility by developing personalised materials.<br>- Notes issues in quality even in recognized textbooks, prompting the need for custom materials.<br>Recognizes the excellence of the textbook. |

| | |
|---|---|
| | - Believes a self-guided textbook would be an improvement.<br>- Sees potential for enhanced learning and autonomy with a self-guided format. |
| **Cluster 5. Freshmen and sophomores in undergraduate studies** | - Prefers creating own teaching materials due to varied quality in existing textbooks.<br>- Sees benefits in alignment with the curriculum outline and enhanced flexibility by developing personalised materials.<br>- Notes issues in quality even in recognized textbooks, prompting the need for custom materials.<br>- Authored and published teaching materials tailored to the course syllabus and goals.<br>- Challenges encountered during material selection: professionalism level, difficulty, length, and categorization of writing styles.<br>- The writing style covers a wide range of choices, for example popular scientific articles, various medical records, case studies of patients, research articles of relevance, and international conference reports.<br>- Development of customised and user-friendly study materials was considered to address the issue of inadequate textbooks in the market.<br>- Searching for suitable study materials from various sources also proved to be challenging and requires |

| | |
|---|---|
| | expert consultation.<br>- Designing suitable student-centred classroom exercises that can be both effective and engaging also proved to be another challenge. |
| **Cluster 6. Teachers** | - Preference for tailor-made materials aligned with student needs.<br>- Acknowledgment of the usefulness of the Language of Medicine in teaching.<br>- Difficulties were faced due to the limited availability of textbooks in the market and the time required to develop suitable teaching materials. |

Table 22. Teachers' perception about teaching materials (Author's data)

The insights that the teachers provided clearly reveal their struggle while selecting appropriate teaching materials for their learners, and also the strategies adopted by them in developing their own materials in some situations.

Throughout the entire analysis, one theme remains common, and that is everyone unanimously acknowledges that there is a tremendous need for tailored teaching materials if we want to fulfil the specific needs of our target learners. Now let us see the responses for better understanding. T1 said it is necessary to develop a customised curriculum to make it effective and user-friendly for both learners and teachers. T2 actually said the same and also added the point about the lack of effective textbooks and how they have to rely on study materials gathered by the teachers' group. Therefore, it would not be wrong to say that both the inadequacy of existing teaching resources and reliance on collaborative efforts and personalised study material development remain prevalent in their responses.

But one should understand that the process of study material development has various challenges. T3 and T4, regarding this, pointed out the scarcity of time, as searching for ready-made materials and developing personalised materials are both time-consuming and challenging. T3 even added the point of personal limitation regarding material search due to lack of knowledge of the field. T5 and T6 also face difficulties in this regard, but from their responses, one more aspect comes to light, and that is the lack of supplementary materials and challenges in preparing class presentations. These responses clearly indicate that there is a need for extensive research and consultation with medical experts regarding the availability of resources, as well as the selection and development of study materials in the current research context.

However, in our teachers' group, we can also find T7 and T8, who appear to be very proactive, as they took the initiative to write and publish teaching materials tailored specifically to the needs of the course goals and syllabus. T7, in this regard, added the privilege of enjoying enhanced flexibility in teaching style that is aligned with the curriculum given by the institutions. On the other hand, teachers who prefer existing textbooks, such as T5, pointed out the limitations of these books and the need to supplement them with related videos and articles to meet students' needs. But the challenges regarding material development are not limited to availability only. T9 and T10 also pointed out that it is really time-consuming to develop good-quality study materials, textbooks, or to identify exactly suitable materials to satisfy the needs of many students with different proficiency levels and personal limitations.

This underscores the need for innovative approaches to material development that address these challenges while ensuring the quality and relevance of the resources used in medical English instruction.

In sum, the questionnaires and interviews' data and its interpretation realise *the Analysis* (understanding learner needs) and *Identification* (determining material requirements) stages of the Procedural Dimension of the needs- based pedagogical technology to teach Medical English to the target audience under examination and lay grounds to further stages of the mentioned dimension.

### 3. 4. Recommendations

A careful and in-depth analysis of the entire data reveals five key themes that deserves mention in the context of Medical English education in China.

The first theme revolves around the *Importance of Tailored Teaching Materials.*

It's evident that there's unanimous agreement among teachers regarding the necessity of English proficiency for medical students, highlighting its indispensable role in academic and professional contexts. The teachers pointed out a major issue: they are dissatisfied with the teaching materials they have been given or they have access to. They feel that there are simply are not enough good resources available in hand, which makes it even more hard to teach the Medical English course properly. Therefore, our most important task is to focus on creating effective and useful new materials that are especially designed for the language needs of medical students.

The second main finding of our research is about the challenges in creating such teaching materials. Using Chinese translation, no doubt helps students understand better, but there is also a concern that it might prevent them from learning to use English naturally in a spontaneous manner. This tells us that we need to find a more balanced way of teaching. We also identified that most students have troubles with vocabulary learning, speaking, and writing skills. This means that our lesson plans need to specifically target these weak areas of the students. So, to solve these problems, we need to be creative and make new materials that are of high-quality, relevant to students of medicine, and easy for ESP teachers to use in their respective classrooms.

The third finding is that we need a better balance between the skills in our teaching. Currently, teachers put a lot more emphasis on reading than on other skills like speaking and listening. We need to change this and should make sure all skills get the right amount of attention based on the target students' need. This finally leads to the conclusion that we should implement teaching methods that focus on communication, which will help students build all their language skills, especially the

difficult ones like speaking and listening.

The fourth finding is about using technology and new teaching methods. Many teachers suggested that using technology and blended learning, which mixes online and in-person classes could make the courses much better. However, a lot of teachers also said they do not feel ready or confident using digital tools. This means that if we want to use these new methods, we have to provide teachers with continuous training and support.

The fifth and final finding is about the need for teachers to work together. There is very little collaboration between the Medical English teachers and the medical subject teachers. This lack of teamwork makes it difficult to connect language learning with medical knowledge. So, what really stands out from the research is we need better collaboration between the English and medical subject teachers. Creating a strong partnership between them will lead to a more holistic teaching approach. This, in turn, is what will fully support the students' language development.

To address these challenges, what we can do is to develop a new Medical English course using the following below mentioned ideas.

First, in the course we should connect language learning directly with the goals of medical education. This is to ensure that the English skills medical students learn are the ones they will practically need in their future medical careers.

Second, we should integrate activities that replicates real-world scenarios. For example, in our classrooms, we can use role-plays of doctor- patient interviews, listening and taking notes of patients’ case studies, and simulated patient interactions. This can give students practical experience to use English in situations they will face

as doctors in future.

Third, the course should incorporate authentic materials. By authentic materials, we mean using real medical journal articles, research papers, and sample patient records as inputs. Using real materials can help students get used to the needed language and terminologies they will encounter in their profession.

Fourth, we can take up a blended learning approach. This approach involves along with classroom teaching, also using online resources, videos, and interactive platforms to give students more ways to learn outside of the classroom. This autonomy and exposure can make learning more interesting and help students study on their own.

Fifth, we should create projects that require both the English teachers and the medical teachers to work together as a team. Such collaboration can help students see how English and medical knowledge are interconnected and this would prepare them for their studies and their future careers.

Finally, EMP teachers need ongoing support and training from time to time. Since both English teaching and medicine change so quickly, teachers need ongoing training to keep their skills and knowledge updated. Without training, it is impossible to provide and continue the kind of high-quality lessons that Medical English students truly need.

By following these strategies, we think, we can create more effective Medical English courses. Our ultimate goal is to equip students with the right skills to succeed in healthcare.

### 3.5. Experimental Validation of Need-Based Approach to Training

Based on the findings from the needs analysis in Sections 3.1, 3.2, and 3.3, a Medical English training course was developed. The course was designed to address key deficiencies that were identified in the research, such as: the critical lack of suitable teaching materials; an over-reliance on translation methods during teaching and learning; the challenges faced by students in learning medical vocabulary and using it in speaking and writing; a lack of balanced focus on the four language skills; and limited integration of technology in classroom practice.

Further on, the section elaborates on the course coordination with structural dimensions of Needs-Based Pedagogical Technology, provides the data on experimental training and the discussion thereon. For practical reasons of experiment description, the consideration starts with the content and proceeds to the procedural dimension, and extends to the conceptual dimension as part of the findings discussion.

***Course Coordination with Structural Dimensions of Needs-Based Pedagogical Technology***

*Course in the Curriculum*

The course was designed for a 16-week schedule, comprising 16 sessions held once per week. Each session lasted three hours (6:00–9:00 PM), including a 15-minute break, resulting in a total of 48 contact hours. The primary objective of the course was to enhance integrated reading, writing, listening, and speaking skills for medical purposes through a communicative, task-based learning approach. The aim was also to minimise translation methods, promote English as the medium of instruction, and

improve learners' overall professional skills and confidence in clinical and academic settings.

*Course Content*

The course covers seven medical topics as identified in line with the hospital program:

1. Therapy
2. Infectious Diseases,
3. Traumatology,
4. Surgery,
5. Nervous System,
6. Morbid Anatomy and Forensic Medicine
7. Obstetrics and Gynaecology.

These topics were selected based on the diversity of the learners' departments and needs identified by the hospital program in charge. Each topic integrates all four language skills through authentic materials and scenarios. The listening and speaking components range from intermediate to upper-intermediate CEFR level, while the reading and writing tasks are designed at the upper-intermediate to advanced level to address specific skill gaps identified in the study.

The respective manual was designed to address key problems identified in this study through the following features:

In the Reading Section, each topic includes two authentic texts (e.g., excerpts from Richard Gordon's *Doctor in the House* and A. Hailey's *In Hotel* for the first topic). These are accompanied by 12 to 13 diverse task types that practice essential reading

subskills such as skimming, scanning, vocabulary building, and IELTS-style exercises including identifying information (True/False/Not Given), matching headings, and diagram label completion. These tasks are designed to combat over-reliance on translation and provide tailored, relevant materials.

In the Listening Section, 3–4 authentic YouTube videos per topic (e.g., "Techniques of Physical Assessment" and "Communication Skills: A Patient-Centred Approach") were selected. Tasks include multiple-choice questions, form completion, and summary writing. This approach effectively integrates technology and provides authentic input to strengthen listening, an area often identified as weak.

The Writing Section employs semi-controlled tasks that simulate real-world scenarios, such as drafting patient emails, formulating medical history questions, creating advice lists, and writing formal notices. This practical focus aims directly at addressing significant weaknesses in professional writing skills.

Although the Speaking Section contains fewer formal tasks, the manual encourages continuous communication through activities such as doctor-patient role-plays, procedural demonstrations, and video-based discussions. These tasks are designed to ensure a balanced focus on all four language skills, moving beyond the traditional emphasis on reading and directly addressing weaknesses in speaking.

It deserves mention that the materials and assignments for learning activities are both internationally oriented and follow the traditional mindset encompassing respect for authority, collectivism, and patient-centred communication aligned with historically developed care norms. The course assumes that the instruction is implemented under an ongoing teacher-structured guidance. Moreover, the learning

materials do not limit themselves to purely language and terminology issues, but are selected to develop and foster students' commitment to professional values and personality traits of physicians.

***Procedural Dimension***

This course translates insights from the *Analysis* (understanding learner needs) and *Identification* (determining material requirements) stages into a tangible pedagogical tool. The course itself embodies the *Implementation* phase of the procedural dimension. Furthermore, its structure initiates the *Improvement* and *Evaluation* stages; through the use of authentic, vetted materials and a task-based assignments, it is designed to generate immediate learner feedback, enabling continuous refinement and closing the loop of the continuous improvement cycle. Thus, the course serves as both a practical solution to the outlined problems and a functional validation of the author's proposed approach.

*Experimental Training: Participants, Groups, and Procedure*

To evaluate the practical effectiveness of the course, a comparative study was conducted on grounds of two teaching learning cycles, each on including a sample of 60 participants selected from the broader study, ensuring representation of the diverse medical fields and roles (doctors, nurses, students) identified in the initial demographic analysis. Participants were selected based on their CET exam proficiency level to ensure a homogeneous starting competency.

The participants of each cycle of the experiment were divided into two groups for a 16-week period:

The Experimental Group (n=30): This group received instruction through the structured 16-week course based entirely on the new training manual. The researcher served as the instructor, implementing the manual's communicative, task-based methodology.

The Control Group (n=30): This group continued their usual self-study routines without any structured intervention, representing the standard learning approach identified in the needs analysis.

The evaluation procedure was designed to measure comparative progress:

Diagnostic Assessment. In the first week, both groups completed an identical integrated skills assessment (See Appendix 3 for the instrument). This 100-mark, two-hour assessment was designed to reflect real-world medical tasks and comprehensively evaluate all four language skills. It comprised:

Listening (20 points): Tasks based on medical audio and video excerpts, including ordering information, sentence completion, and identifying true/false statements.

Reading (40 points): Comprehension of two authentic medical texts (one narrative, one research-based), assessed through true/false questions, short answers in full sentences, and personal reflection.

Vocabulary (10 points): Matching medical terminologies with their definitions and completing sentences with appropriate suffix partnerships.

Translation (10 points): Translating a passage from English to Chinese.

Writing (20 points): A choice between drafting a formal motivational letter for a medical conference or writing a short opinion essay on a given medical topic.

A short, ungraded speaking interview was also conducted to gauge initial fluency. Each section was scored individually based on accuracy, task completion, and language fluency; these were then combined for a total percentage score.

Intervention: The Experimental Group underwent the 48-hour training program using the manual.

Post-Assessment: In the final week, both groups completed a post-assessment identical in format and difficulty to the pre-assessment.

*Training Results: Comparing Effectiveness*

The pre- and post-assessment scores were analysed using a percentage-based system to determine the comparative improvement for each group. The total score for each test was calculated as a percentage of the maximum possible score.

The results demonstrated a significant disparity in learning outcomes between the two groups as the data from two cycles of experimental training with a total of 120 participants reveals, see table 23:

| Group | Average Score | | Percentage Improvement |
|---|---|---|---|
| | Diagnostic Assessment | Summative Assessment | |
| Experimental | 64% | 87% | + 23% |
| Control | 63% | 69 % | +6 % |

Table 23. Data on students' academic progress (Author's data)

The data indicates that the Experimental Group showed a substantial 23% improvement in overall medical English proficiency. The Control Group, however,

showed only a marginal 6% improvement, which can be attributed to general exposure over time rather than targeted instruction.

The results from the pre- and post-assessments were analysed on a section-by-section basis. The total possible marks for each section (Writing: 20, Speaking: 20, Reading: 40, Listening: 20, Vocabulary: 10, Translation: 10) were converted into a percentage score for each participant. The average percentage improvement for each skill section was then calculated for the entire Experimental Group.

A detailed analysis of the individual test sections for the Experimental Group reveals comprehensive progress, directly aligning with the course objectives:

| Skills Section | Average Percentage Improvement |
|---|---|
| Writing | + 26% |
| Speaking | + 24% |
| Reading | + 22% |
| Listening | + 21% |
| Vocabulary | + 20% |
| Translation | + 19% |

Table 24. Experimental group's skill-specific improvement (author’s data)

The 26% improvement in the Writing task shows an enhanced ability in structured, professional communication, directly addressing the "difficulties in writing accurate sentences" identified in student data.

The 24% improvement in the Speaking task demonstrates greater fluency and confidence in oral production, countering the "identified gaps in speaking skills" from both student and teacher data.

The strong improvements in Reading (+22%) and Listening (+21%) confirm the manual's balanced approach to strengthening both receptive and productive skills.

The consistency of improvement across all skill areas provides clear, quantitative evidence of the manual's effectiveness in addressing the specific weaknesses identified in the needs analysis.

***Discussion on Experimental Training***

The results from our experiment clearly show strong evidence that the new, need-based training manual is fruitful. The Experimental group improved their overall scores by 17 percentage points more than the Control group, within one semester timeline. This clear difference proves that the course is effective. It shows that the course is more than just a mere set of exercises; it is a practical solution that fixes real problems in Medical English teaching that we identified earlier.

The instructional impact reveals its direct correlation with its structural formulation in mitigating the exact challenges revealed through the requisite diagnostic analysis.

***Addressing Resources Quality:*** The course that has been provided basically has ready-to-use teaching content that teachers previously felt was missing. By offering complete materials with real texts and practical tasks, the purpose here is to address teachers' challenges and dissatisfaction regarding both the quality and availability of teaching resources.

***Bridging Skill Gaps:*** From the data, we can see clear improvement in writing (26%) and speaking (24%) skills, which proves that the manual was effective and helped learners improve beyond their earlier focus on reading. At the same time, it directly addresses teachers' concerns regarding students' weaknesses in vocabulary building, speaking, and writing skills. The practical and situation-based tasks incorporated in the manual encourage students to actively use English in their own professional contexts instead of relying on translation.

***Promoting Communicative Practice:*** In this way, by reducing dependence on translation and increasingly focusing on real-life tasks, the manual promotes a more communicative approach to teaching, which was another important goal pointed out earlier. The use of a communicative approach automatically helps students use English for actual communication instead of simply translating texts. This focus on improving productive skills is undoubtedly a noticeable improvement on the part of the learners.

***Integrating Technology and Authentic Materials:*** In the manual, several YouTube videos and digital tasks were incorporated, which helped teachers and students bring technology into the classroom in a simple yet effective manner to serve their purposes. This also highlights the need for more innovative teaching methods while keeping the structure of the course clear and manageable, especially for teachers who are interested in using digital tools in their classrooms.

*Meeting Diverse Needs:* The gains across all participant types (doctors, nurses, students) demonstrate the manual's effectiveness in meeting the evolving English language requirements at various phases of academic and professional journey

identified in the participant description. Its task-based approach allowed learners from different specializations to engage with clinically relevant content.

In sum, the experimental instruction reveals features that make the course internationally relevant, while attuning it to the Chinese educational traditions and values. The course design rests on teacher-centred scaffolding and structured progression that still leaves room for student agency in motivated locally relevant task-based activities. Among other relevant features, the course realises the following practices that are relevant in national socio-professional contexts:

– embeds collaborative tasks that reinforce group cohesion while fostering critical thinking and problem -solving;

– aligns learning objectives with culturally resonant context and examples, ensuring the content is meaningful within students' social world;

– incorporates reflective practices and assessment strategies that balance rigorous mastery with moral and character-oriented goals;

– leverages technology to support traditional strength (i.e., digital libraries) to deepen foundational knowledge, or multimedia case studies that illustrate culturally relevant scenarios.

In sum, this experiment confirms that the course operationalises the comprehensive needs-based approach to teaching Medical English, demonstrating its practical application in significantly enhancing medical English education. Thus, the course serves as both a direct answer to the identified challenges and a replicable model for developing context-specific ESP training programs. The experimental training

confirmed that the course corresponds to the conceptual dimension of the needs-based training.

*Course Coordination with Conceptual Dimension of Needs- Based Pedagogical Technology*

The course rests on the philosophical foundations, specifically the epistemological foundations, and reflects historically shaped national values rooted in the Chinese philosophical traditions, as well as principles embedded in the Bhagavat Gita.

The course adopts a humanistic paradigm focusing on learners' values and perceptions in the educational process. The course also aligns with the competence-based paradigm, aiming to enhance language-facilitated professional competence of future medical staff, and to develop domain-specific communicative competence through an integrated training of four speech skills. The course is intended to be consistent with the learning theories, outlined within the theoretical foundations of the research. The course affords the opportunity to build and adapt content to varied learning environments and personal needs, thereby applying constructivist principles. The focus on cognitive activities and behavioural patterns reflects elements of cognitivism, behaviourism, respectively. The selection of authentic (quasi-authentic) materials supports social and experiential learning, while internet-related tasks contribute to skills in digital connectivism.

The course also seeks to enact the approaches aligned within the needs-based framework.

It centres on the societal contexts and key subjects of the educational program in the domain under examination.

It adopts a learners-centred approach grounded in their needs analysis.

It employs strategic and systematic approaches pertaining to the organization of educational process.

The bulk of varied assignments realizes a broad- perspective task-based approach.

The course stands on the means analysis that yields data derived from the social features of the instructional environment.

Table 25 provides detailed examples on the coordination of students' needs, problem-based learning activities, and theoretical foundations specified for the development of needs-based training .

| Identified Needs (Table Numbers in the Dissertation Text) | Course Book Items / Tasks / Materials Mirroring the Need | Educational Theories Implementation |
|---|---|---|
| **1. Need for Authentic, Profession-Specific Listening Practice** *(Table 7, Table 10)* | • All **Listening Tasks (L-Tasks)**: Comprehension exercises based on curated YouTube videos (e.g., "Techniques of Physical Assessment," "Surgical Safety Checklist"). • **L-Task 4 & 5 (Therapy)**: Simulated clinical note-taking from a video consultation. | • **Experiential Learning & Connectivism:** - Videos provide *"learning by doing"* through simulated real-world scenarios. - Digital videos represent dynamic knowledge networks, bridging the gap between the classroom and the global medical community. |
| **2. Need for Structured Speaking & Interaction** | • **Speaking Task 1 & 2 (All Topics)**: Structured role-plays (doctor-patient, clinical team debates) | • **Social Learning Theory & Communicative Language Teaching** |

| | | |
|---|---|---|
| **Practice**<br><br>*(Table 7, Table 8, Table 17)* | and individual speeches on medical topics.<br>• **R-Task 9 (Traumatology)**: Problem-solving discussion on hospital emergency response. | **(CLT):**<br>- Role-plays and group discussions *"bridge behaviourism and cognitivism"* in a complex societal context, engaging learners to solve problems collaboratively.<br>- The focus is on fluency and successful communication, not just grammatical accuracy. |
| **3. Need for a Strategic Approach to Medical Vocabulary Acquisition**<br>*(Table 8, Table 17)* | • **R-Task 10, 11, 12 (All Topics)**: Exercises on pronunciation, prefixes/suffixes (morphology), and matching terms to definitions.<br>**Texts A & B:** Authentic reading texts were taken from medical literatures.( for example works by Gordon and Hailey). | • **Cognitivism & The Lexical Approach:**<br>- Focuses on internal cognitive processes for *"learning how to learn"* vocabulary (e.g., through word-building). - Treats vocabulary not as individual item but as key *"chunks"* of language essential for |

| | | |
|---|---|---|
| | | fluency in a specialised domain. |
| 4. **Need of Step-by-Step Writing Practice tasks for Professional Genres** *(as shown in Table 8, Table 10, and Table 17)* | • **Writing Task 1 (**from the section titled **Infectious Disease)**: The task to draft a formal hospital notice.<br>• **Writing Task 2** (from the sections on **Therapy/Surgery)**: The task of writing patient emails and creating questions to collect patients' medical history. | • **Genre Analysis (from ESP Development) & Constructivism:** Tasks are based on the discourse and genre conventions of the medical field. Learners actively "*construct*" meaning and texts by engaging with and producing specific professional genres, building on their existing knowledge. |
| 5. **Need for Good-Quality, Relevant, and Ready-to-Use Teaching Materials** *(check Table 18)* | • The **whole manual** is designed in such a way that it serves as a ready-to-use resource that can cover all 16 weeks and is enriched with authentic texts and real-world tasks. | • **Means Analysis & Process-Oriented Approach:**<br>- The material itself is the outcome of a needs analysis focused on the social and |

| | | |
|---|---|---|
| | | institutional features of the Chinese medical education environment.<br>- It provides the "*tools*" for the procedural dimension of the pedagogical technology. |
| *6.* **Need to shift and move further from Translation-Based Pedagogy**<br>*(check Table 18)* | • **Semi-controlled writing and speaking tasks** in this manual encouraged learners to improve original production in English.<br>• The course design forcefully promoted **English as the primary medium of instruction** during the training period. | • **Behaviourism (Positive Reinforcement) & CLT:**<br>- The course design reinforces desired language behaviours (using English directly) through engaging, communicative tasks.<br>- It shifts the focus from form-based translation to meaning-based communication. |

| | | |
|---|---|---|
| *7.* **Need to keep balance between all the four language skills.** *(check Table 9, Table 17)* | • Each chapter is organized as modules that incorporate reading, writing, listening, and speaking skills around the specific central medical topic (of the chapter).<br>• The final exam tests all four skills in a comprehensive and practical way. | • **Competence-Based Paradigm (UNESCO/OECD) & Integrated Approach:**<br>- Aims to develop the holistic *"knowledge, skills, values and attitudes"* required for a medical professional.<br>- The needs-based approach integrates a synergy of methods to ensure balanced skill development. |
| **8. Need for Integration of Technology and Blended Learning** *(Table 13, Table 20)* | • Core use of **YouTube videos in listening sections**.<br>• The structure allows for **flipped classroom models** using the book's pre-class exercises. | **• Connectivism & Blended Learning:**<br>- Acknowledges *"non-linear learning and dynamic knowledge networks.*"<br>- The use of digital tools prepares students for a connected world and allows for |

| | | |
|---|---|---|
| | | flexible, student-centred learning paths. |
| **9. Need for Interdisciplinary Collaboration (Team-Teaching)** *(Table 16)* | • The **medically accurate content** facilitates collaboration for material validation.<br>• **Structured role-plays** create observable outcomes for joint assessment by language and subject experts. | • **Team-Teaching Concept (from ESP Methodology) & Community of Practice:** Directly implements the ESP method of collaboration between language and subject teachers, creating a professional community that bridges disciplinary gaps for a more unified educational program. |
| **10. Need for Culturally and Contextually Grounded Content** | • **Translation Tasks (e.g., R-Task 12)**: Bridge concepts between English and Chinese.<br>• **Culturally-Grounded Tasks**: e.g., Writing a notice for "Chongqing University Cancer | • **Chinese Philosophical Traditions (Confucianism) & Culturally Responsive Pedagogy:** The teacher-structured guidance and clear framework |

| | | |
|---|---|---|
| | Hospital". | respect the value placed on authority and order. Tasks that emphasise community (e.g., group discussions) and socially relevant scenarios align with the collectivist and harmonious mindset. |

Table 25. Coordination of students' needs, learning tasks, and their theoretical foundations (Author's data).

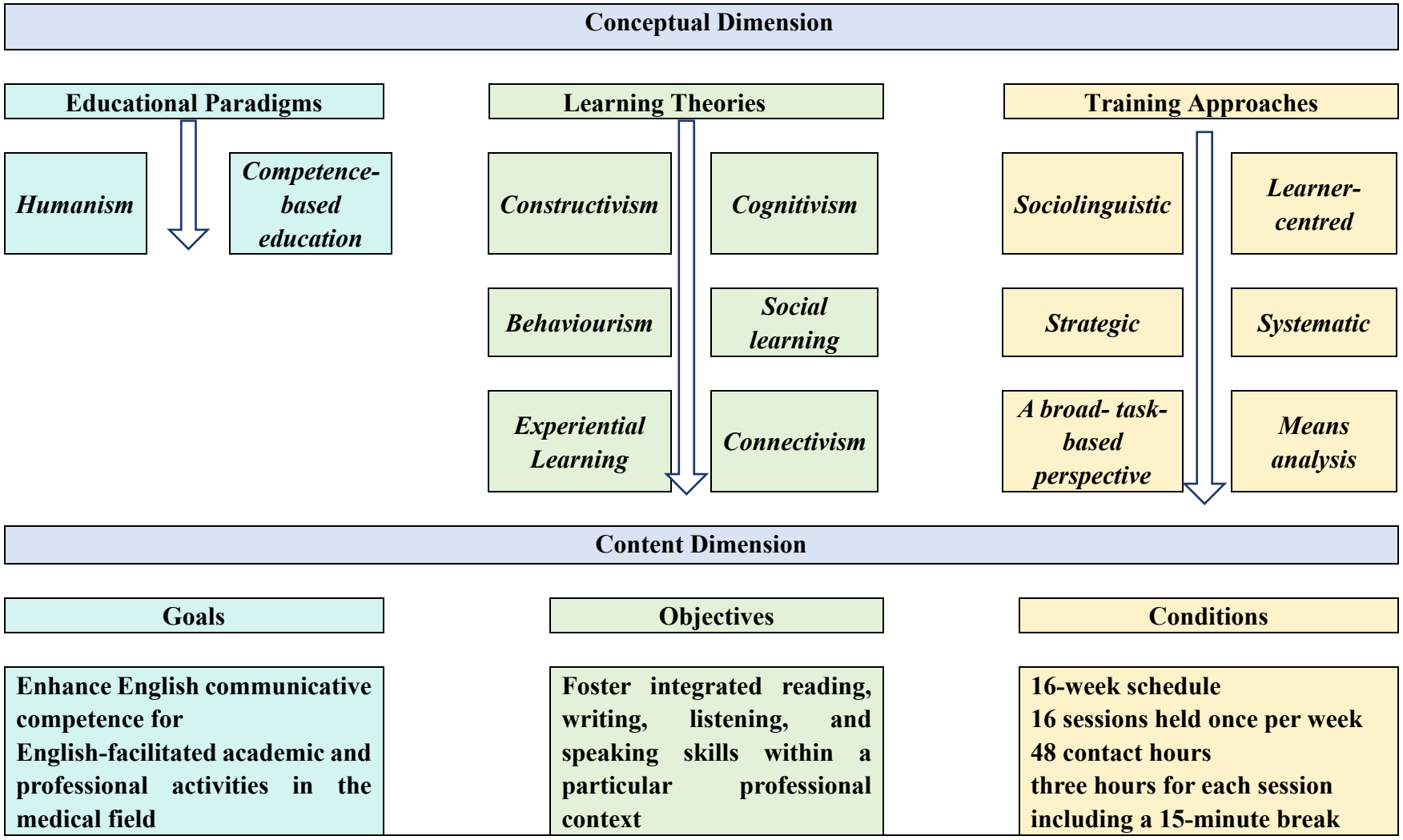
***Pedagogical Technology Framework for Needs-based Approach to Teaching Medical English to students at Chinese universities***

The overall experimental training lays grounds to adopt the pedagogical technology framework to implement the needs-based approach to teaching medical English to students at Chinese universities, as introduced in Diagram two.

This framework incorporates the Conceptual, Content, and Procedural dimensions.

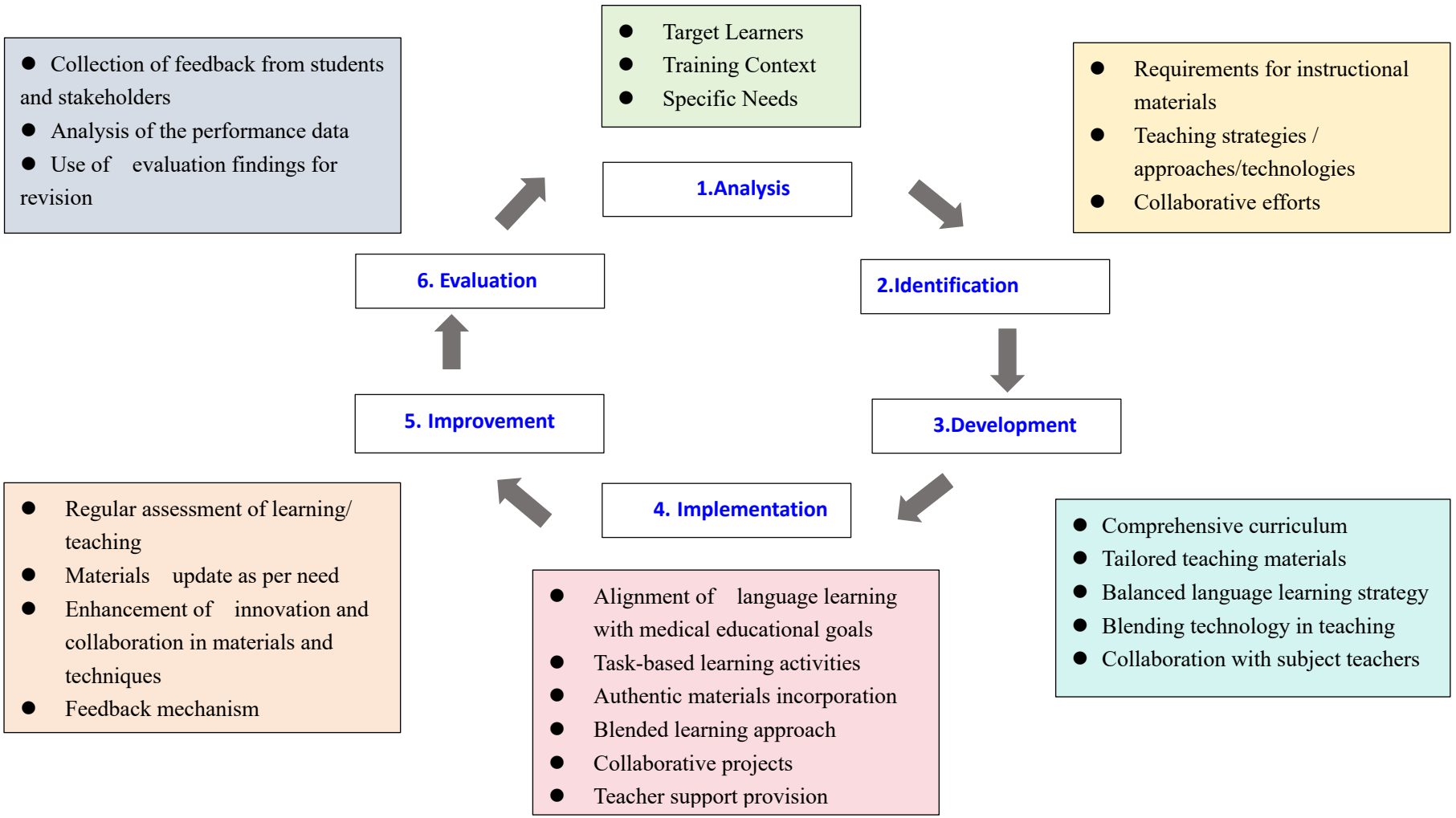
The conceptual dimension identifies the theoretical background for applied activities, as outlined in Chapter One. The content dimension outlines the learning-teaching goal, and objectives, as well as the organisational issues regarding the course in the curriculum. The procedural dimension core feature is specified as harmonised teacher-guided instruction with meaningful student engagement, contextualized content and modern tools integration, all aimed at cultivating both scholarly domain-specific professional competence and personal development. It commences with the diagnostic analysis to ascertain learners' needs, proceeds to the development of the needs-responsive content, advances to implementation of context appropriate training, encompassing bespoke materials, tools, and teaching personnel, further transitions to assessment and improvement (iterative refinement of tools), and culminates in a summative evaluation.

Diagram 2: Pedagogical Technology Framework for Needs-based Approach to Teaching Medical English to students at Chinese universities (Author's data)


Conceptual Dimension
Educational Paradigms
Learning Theories
Training Approaches
Humanism
Competence-based education
Constructivism
Cognitivism
Behaviourism
Social learning
Experiential Learning
Connectivism
Sociolinguistic
Learner-centred
Strategic
Systematic
A broad- task-based perspective
Means analysis
Content Dimension
Goals
Objectives
Conditions
Enhance English communicative competence for English-facilitated academic and professional activities in the medical field
Foster integrated reading, writing, listening, and speaking skills within a particular professional context
16-week schedule
16 sessions held once per week
48 contact hours
three hours for each session including a 15-minute break

**Procedural Dimension:**

***harmonised teacher-guided instruction with meaningful student engagement, contextualized content and modern tools integration, all aimed at cultivating both scholarly domain-specific professional competence and personal development***



*Experiment Validity Issues*

The conceptualisation and subsequent empirical evaluation of a pedagogical intervention fundamentally entail a comprehensive discourse regarding its validation. The notion of pedagogical validity itself constitutes a burgeoning domain within contemporary educational scholarship [Zhang., Aryadoust, 2022]. A critical distinction should be drawn between the internal and external validity intrinsic to research endeavours, necessitating a thorough examination of validity's conceptual, criterion - referenced, and quantitative dimensions. These dimensions, as elucidated by Kane and Bridgeman (2021) and Cahit (2015) demand consideration from both theoretical and empirical standpoints. Pertaining to the validity of the educational technology advanced herein, this study identifies the progress in knowledge acquisition and skills' development as the key evaluative metrics. The soundness of this stance is corroborated by the overarching trajectory of the historical evolution of pedagogical assessment [Lee, 2012]. Within the experimental training the validity of the designed pedagogical technology was substantiated through a comprehensive system for evaluating students' academic performance, alongside the summative outcomes of course mastery in both control and experimental cohorts. The higher level of language proficiency observed in the experimental group, relative to control group, substantiates both the adequacy and efficacy of the developed pedagogical technology and evidences the coherent alignment of its conceptual, substantive and procedural components. These findings accord with the principles articulated in contemporary theories of pedagogical validity [Vu,2021].

In designing and implementing the experimental training, we explicitly accounted

for the long standing broader evaluative practices (employed internationally) that assess the external validity of instructional frameworks by incorporating a spectrum of determinants (individual, organisational, social, and others). [Bracht, Glass, 1968, Trafimow, 2023].

The pedagogical technology advanced in this study was empirically piloted at two distinct medical universities in China across cohorts differentiated by professional and social backgrounds, and gender composition, as well. The consistency of outcomes across these heterogeneous contexts substantiates the external validity of the proposed pedagogical technology. As the extant scholarship emphasises the conceptual imperative of addressing the external validity , specifically the alignment between the correspondence between the systemic relations embodied in the pedagogical conception/ model/ technology and the values prevailing in the society, the outcomes of the pedagogical technology experimental evaluation permit the conclusion that the interlevel systemic relations and constituent elements of the technology are congruent with and effectively serve the objectives of cultivating specialised communicative competence in medical practitioners.

**Conclusion on Chapter Three**

1.The empirical study helped obtain data on students' attitude to English in Medical Studies, learners' views of their proficiency in English, their perceptions and purposes of using four language skills, their motivation for learning English (for career and academic studies), students' ' preferred learning aids (video and audio), frequency of learning per week. The questionnaires' content, structure and wording stood on the standardised

methodology, while drafting the content in accordance with established practices of Chinese medical education and tailoring the toolkit to national and local landscapes.

2.The empirical investigation reveals a number of issues that turned out to be relevant for experimental training design. Firstly, there's a noticeable gender gap in the medical field, with a higher representation of males. Student majority achieving CET 6 level proficiency underscores the demand for advanced English skills, potentially imposing academic and professional pressures on medical professionals. Thirdly, a significant proportion of learners studying English for over five years acknowledges the need for ongoing improvement. Lastly, although Chinese serves as the primary instructional language, the preference for English-medium instruction suggests a considerable demand due to the professional globalization or dominating medical resources in English.

The data further reveals that a majority of students rates themselves as those with moderate proficiency; respondents rate their speaking skills lower (57.69%) as compared to reading (80.77%) and writing (90.38%) skills. Identified challenges include difficulties in writing accurate sentences (67.31%) and translating articles (63.46%). These findings underscore both consistent patterns and discrepancies between self-perceived English skills and identified challenges, emphasising the areas for tailored teaching to address the respective gaps.

Moreover, the data also reveals a gap exists between perceived importance and practical usage. Varied motivations and preferences among medical learners highlight the importance of developing customized learning-teaching styles in China's medical

education landscape.

3. Regarding the empirical data on teachers' replies, the following issues emerge.

Demographic data show that most participants were female with master's degrees and have varied teaching experiences, which actually shows potential gaps in pedagogical preparation. When asked about students' necessity of learning English and duration of the course, teachers preferred a two-year ESP course, due to the complexity of medical language needs and the importance of in-depth language acquisition.

There is limited collaboration with subject teachers according to the research responses. And regarding the students' weaknesses, there are unanimous responses regarding weaknesses in vocabulary, speaking, and writing, which indicates the need for targeted teaching plans.

Availability of teaching materials and a prevalent dependence on translation can also be observed analysing the interview data.

Although there is a score for integrating technology and blended learning, concerns exist regarding teachers' readiness to adopt digital tools effectively.

4.The experimental validation of the need-based approach to training confirmed the suitability of the research design and mix-method methodology employed for the empirical investigation and experimental training.

The experiment demonstrates the course alignment with systemic-structural dimensions of needs-based pedagogical technology. Within this framework, the content dimension is defined to include teaching goal and objectives, and the organisational conditions related to the course placement within the established educational curriculum,

course workload and thematic structure.

The Procedural Dimension is outlined with emphasis on the experimental training, detailing participants, group formation, and instructional activities, learning outcomes and their discussion. The research enables a detailed articulation of the Procedural dimension stages.

The Analysis Stage explores target learners, training contexts, and specific needs.

The Identification Stage addresses requirements for instructional materials, teaching / pedagogical techniques, collaborative efforts.

The Development Stage aims to design a teaching course, comprehensively mapped in the curriculum, provided that such a course ensures needs-tailored teaching material, balanced language learning strategy, digital tools blended in the teaching process, and collaboration with subject teachers.

The Implementation Stage encompasses alignment of language learning with medical educational goals, incorporate a broad perspective of task-based learning activities, incorporates authentic materials, employs blended learning, focus on collaborative projects, ensures teacher support.

The Improvement Stage focuses on the regular assessment of teaching materials and update as per need, ensures the enhancement of innovation and collaboration in materials, organizes feedback mechanism through the training implementation.

The Evaluation Stage integrates the collection of feedback from students and stakeholders, implements the analysis of the performance data, and ensures the use of evaluation findings for revision.

A core feature of this procedural dimension is the harmonious integration of disciplined, teacher-guided instruction with consistent, meaningful student engagement, contextualized content, and the strategic integration of modern tools, all collectively aimed at cultivating both scholarly domain-specific professional competence and holistic personal development.

The experimental instruction has added a stage, namely *Assessment and Improvement* that deals specifically with the teaching materials and tools, as their ingoing update has turned out to be relevant.

The experiment also confirms the course coordination with the conceptual dimension of needs- based pedagogical technology and culminated in a comprehensive framework for this technology as applied to teaching medical English to students at Chinese universities. A central feature of its procedural dimension is the meaningful student engagement in teacher-guided instruction in discipline-specific LSP through the use of contextualised problem-based content, and modern tools, all aimed at cultivating both scholarly domain-specific professional competence and personal development.

## CONCLUSION

This doctoral research culminates in the development of a comprehensive needs-based approach to teaching medical English to students at Chinese university contexts. The research findings validate the pertinence of the theoretical background, articulated throughout the dissertation study.

The research adds new data on current didactic gaps regarding current medical English instruction at Chinese universities, in terms of curriculum issues, teaching approaches, tools, and materials.

The study establishes a novel theoretical foundation for the needs- based approach to teaching medical English to students at Chinese universities, by integrating conceptual contributions that address factors previous treated separately. The empirical and experimental investigations confirm that such an approach is firmly grounded in a synthesis of general educational theory, specialised language pedagogy development, and the contemporary framework of Chinese medical education. Its theoretical background integrates key paradigms, including humanism and competence-based education, the epistemological underpinnings of specialised language, and mindset derived from Chinese philosophy. Further enriching this theoretical core is a strategic amalgamation of learning theories encompassing constructivism, cognitivism, behaviourism, social and experiential learning, and connectivism. The research enriches current pedagogical landscape by integrating globally recognised theories and practices with nationally and locally responsive perspectives, illustrated through novel contextually situated examples.

The investigation extends existing theories of specialised language instruction to

the context of medical English teaching in Chinese university settings by developing and empirically validating a needs-based pedagogical framework. Both theoretical and empirical studies within the dissertation justify, that at its essence, this needs-based pedagogical framework benefits from embodying a deliberate synergy of approaches wherein learner needs and perceptions are accorded paramount significance within the overarching structure for applied studies and activities. The proposed framework strategically incorporates sociolinguistic and learner-centred perspectives thereby prioritizing social contexts and central subject matter. It further leverages strategic and systematic approaches to educational process organization, a comprehensive task-based perspective for teaching trajectories and practices, and a meticulous means analysis to concentrate on data driven from socio-cultural and professional characteristics of instructional environment. The integration of these approaches under the needs-centric educational umbrella establishes a cohesive educational standpoint that addresses universal pedagogical considerations while concurrently honouring distinctive specificities intrinsic to the traditional Chinese mindset.

The research specifies the essence of a comprehensive methodology to design needs- based teaching. The methodological rigor employed to investigate this needs-based approach involved the integration of the empirical investigation into learner and teacher needs within domain-specific educational contexts subsequently coordinated with experimental instruction. The study confirms the relevance of the empirical investigation toolkit, while its content was meticulously drafted in accordance with established practices of Chinese medical education and tailored to resonate with national and local

socio-cultural and professional contexts. The experiment instruction confirmed the importance of the systemic-structural pedagogical framework, designed to synthesise globally recognised pathways and perspectives with nationally relevant demands for domain-specific education. Critically, this design is rooted in and expressed through the traditional mindset, which encompasses respect for authority and teacher-structured guidance, collectivism and classroom harmony, emphasis of foundational knowledge, moral development, goal-directed learning. This commitment extends to the integration of patient -centred communication aligned with Confucius care norms, communal orientation, biosocial thinking, virtue thinking and professional identity, assessment aligned with prevailing social norms.

Operationally, this needs-based pedagogical framework is realised through the concept of pedagogical technology, the validity of which has been empirically verified though the experimental instruction. This pedagogical technology comprises the conceptual, content and procedural dimensions. The conceptual dimension explicates the aforementioned synergy of scientific paradigms, learning theories, and approaches. The content dimension encompasses learning goals and objectives, alongside institutional curriculum conditions. Unlike previous studies, this research focuses on the process-oriented concept of the needs-based pedagogical framework and introduces a new perspective of the procedural domain where the implementation of training is preceded by the needs analysis, its data interpretation and a tailored course design.

Notably, in contrast to traditional perspective, the educational content and tools within this needs-based approach are not pre-incorporated into the content dimension;

rather these elements are dynamically identified and developed subsequent to the needs analysis stage of the procedural dimension.

The research explicitly articulates previous unrecognised stages of the Procedural dimension of the needs-based pedagogical technology for teaching specialised languages.

The Analysis Stage focuses on understanding the target learners, the training context, and their specific needs. By understanding who the learners are, what environment they are learning in, and what particular skills or knowledge they require, ESP teachers, trainers, and material developers lay a foundation for designing effective training programs.

The Identification Stage is important as it helps the teachers to understand and decide the very specific requirement of study materials and also decide appropriate teaching methods accordingly. In this stage, if the teachers collaborate with the stakeholders and consult with other subject teachers, then that will help them to better decide the appropriate and more comprehensive teaching strategy that matches the needs of the learners.

The Development Stage, as the name indicates, is mainly related to the development of the actual training course. This involves developing tailored teaching materials that can efficiently address the particular needs of the target learners. Here, if technology can be incorporated, then it will ensure a balanced language learning strategy. In this stage too, collaboration with subject teachers can prove to be effective to ensure the chosen content is relevant and perfectly aligns with the medical education goals of the learners.

As the name indicates, the Implementation Stage is the practical stage where the teachers and material developers use their thoroughly and carefully developed teaching materials in practice among the target learners.

They can assess whether the developed course content smoothly aligns with the medical educational goals and whether the assigned tasks and the incorporation of authentic materials proved beneficial for the learners. A blended learning approach can be highly effective, combining traditional and digital methods. Collaborative projects can be introduced, and continuous teacher support needs to be provided to facilitate effective teaching and learning.

The Improvement Stage focuses on the regular assessment of teaching materials and update as per need through the training implementation. The foundation of this stage starts from the moment teachers use the teaching materials in their classrooms. Their regular assessment of the effectiveness of the teaching materials can help them identify if the materials and teaching methods are interesting, promote learner motivation, and are engaging for students. Accordingly, teachers can make notes on how to update the materials, what new information can be integrated, or note any other requirements. At this stage, while selecting online materials, designing tasks, or making any kind of new changes, innovation and collaboration are highly encouraged. Teachers can also employ a feedback mechanism to gather input from both other teachers and learners for continuous improvement.

The Evaluation Stage integrates the collection of feedback from students and stakeholders, implements the analysis of the performance data.

The findings from these evaluations are useful as they can be used to make revisions and improvements, closing the loop of the continuous improvement cycle and ensuring that the training remains effective and responsive to learners' needs.

The research findings reveal consistent evidence supporting the efficacy of a comprehensive approach to teaching foreign languages for occupational purposes at universities, based on an analysis of students' educational needs from the perspective of philosophy and learning theory, to inform curriculum design and classroom practice. Further research should continue to refine implementation of the designed pedagogical technology and assess its long-term outcomes across diverse educational contexts.

Further research should continue to refine implementation of the designed pedagogical technology models and assess long-term outcomes across diverse educational contexts.

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## APPENDIX I. STUDENTS' QUESTIONNAIRE
## TO SURVEY NEED ANALYSIS in MEDICAL ENGLISH TEACHING

Dear Students,

I am presently carrying out a research on The Need for Teaching Effective ESP Courses for medical Students in China. I will be grateful if you kindly contribute in this study by completing the attached questionnaire. I can assure you that the information you give will be kept confidential and used for this project work only.

Your reply would be a great help to carry out this research. Thanks for your valuable time and support.

Thanks and regards,

Tarun Sarkar

**Part one: Background information**

Name: ……..

Age: …….

Gender……..

Name of your Department:

Level: ……..

**Tick in the right box**

**1-** What is the medium of instruction (language) in your faculty?

Chinese □ English □ Russian □ other language □

**2-** Do you learn English in your faculty?

Yes □ No □

**3-** Have you learnt English before?

Yes □ No □

**4-** How long have you learnt English

One year □ two years □ three years □ four years □ five years or more ( specify)

**Part two: Importance of Using English in the Medical Field**

**Circle the number you think it is appropriate**

**5-** English is important in your study.

(1) disagree (2) agree (3) not sure

**6-** English is important to succeed in academic studies.

(1) disagree (2) agree (3) not sure

**7-** English is important for your future professional career.

(1) disagree (2) agree (3) not sure

**8-** Learning English is a challenge that you enjoy.

(1) disagree (2) agree (3) not sure

**Part three: The Medical students' Linguistic Needs**

**A- Lacks**

**9-** You feel your current overall level of English is …

(1) Very poor (2) poor (3) good (4) very good

**10-** How would you rate your English proficiency in the following skills?

Listening ----------

Speaking ----------

Reading ----------

Writing ----------

(1) Very poor (2) poor (3) good (4) very good

**Tick in the right box**

**11-** Do you have a problem in:

**(a)** Holding a conversation in English? Yes □ No□

**(b)** Framing simple questions? Yes □ No□

**(c)** Providing responses to simple questions? Yes □ No□

**(d)** Choosing the right word while speaking? Yes □ No□

**(e)** Expressing ideas and thoughts clearly? Yes □ No□

**(f)** Pronouncing medical terminology correctly? Yes □ No□

**(g)** Writing correct meaningful sentences? Yes □ No□

**(h)** Encountering difficulties while translating articles from English to mother tongue?

Yes □ No□

C- **Necessities**

**12**- How often do you think you need the English writing skill?

a) always b) sometimes c) never

**13**- Why is learning the writing skill necessary for medical studies?

(Please use the scale below to circle the appropriate answer)

a) always b) sometimes c) never

| | | | |
|---|---|---|---|
| Writing research papers | **a** | **b** | **c** |
| Writing medical reports | **a** | **b** | **c** |
| Taking notes in lectures/conferences | **a** | **b** | **c** |
| Writing replies/emails to English speaking person | **a** | **b** | **c** |
| Writing essays | **a** | **b** | **c** |
| Others ( please specify)……. | **a** | **b** | **c** |

**14-** How often do you think you need the English reading skill?

a) always b) sometimes c) never

**15-** Why is learning the reading skill necessary for medical studies?

a) always b) sometimes c) never

| | | | |
|---|---|---|---|
| **i.** Reading medical journals and articles | **a** | **b** | **c** |
| **ii.** Reading English textbooks and lecture handouts | **a** | **b** | **c** |
| **iii.** Reading Scientific newspapers and magazines | **a** | **b** | **c** |
| **iv.** Reading medical prescriptions | **a** | **b** | **c** |
| **v.** Reading stories and novels | **a** | **b** | **c** |
| **vi.** Reading graphs, charts and tables | **a** | **b** | **c** |
| vii. Others ( please specify)…….. | **a** | **b** | **c** |

**16-** How often do you think you need the English speaking skill?

a) always b) sometimes c) never

**17-** Why is learning the speaking skill necessary for medical studies?

a) always b) sometimes c) never

| | | | |
|---|---|---|---|
| Making presentations at seminars and conferences | **a** | **b** | **c** |
| Taking part in daily conversations | **a** | **b** | **c** |
| Presenting oral reports | **a** | **b** | **c** |
| Talking to foreign doctors / researchers | **a** | **b** | **c** |
| Participating in negotiations | **a** | **b** | **c** |

| | | | |
|---|---|---|---|
| Attending Web-English-Talks | **a** | **b** | **c** |
| Others ( please specify)…….. | **a** | **b** | **c** |

**18-** How often do you think you need the English listening skill?

b) always b) sometimes c) never

**19-** Why is learning the listening skill necessary for your medical studies?

c) always b) sometimes c) never

| | | | |
|---|---|---|---|
| Understanding discussions on medical issues | **a** | **b** | **c** |
| Understanding daily conversations. | **a** | **b** | **c** |
| Understanding spoken presentations in seminars / conferences. | **a** | **b** | **c** |
| Understanding English radio and TV programs. | **a** | **b** | **c** |
| Understanding visitors / guests from native speaking English countries. | **a** | **b** | **c** |
| To understand English phone calls. | **a** | **b** | **c** |
| Others ( please specify)…….. | **a** | **b** | **c** |

**20-** The medical English course should emphasize more

____ medical conversation (listening / speaking)

____ medical reading

___ medical writing

Please put them in order of importance assigning number 1 to the most important, number 3 to the least important ( 1 2 3).

**B- Wants**

**21-** Why do you want to study English? (Circle the appropriate letters)

a. For personal interest

b. For future work

c. For academic studies

d. For no special reason

e. Other reasons (specify)

**22-** How do you prefer to learn English? (Circle the appropriate letters)

a. In pairs

b. In small groups

c. Individually

**23-** Which of the following make(s) the learning process easier for you?

(Circle the appropriate letters)

a. Audio materials.

b. Video materials.

c. Handouts and/ or other printed materials.

**24–** How often would you like the course to be held? (Circle the appropriate letters)

a. Twice a week

b. Thrice a week

c. More than thrice a week ( precise)

**********

**Appendix 1.1:** 学生问卷，调查医学英语教学的需求分析

亲爱的学生们，

我目前正在进行一项关于中国医学生教授有效的 ESP 课程的研究。如果您能完成附上的问卷调查，我将不胜感激。我保证您提供的信息将被保密，并仅用于此项目工作。

您的回复将对我进行这项研究提供巨大帮助。感谢您宝贵的时间和支持。

谢谢和问候，

Tarun Sarkar

**第一部分：背景信息**

年龄： ……。

性别……..

您所在部门的名称：

英语水平：CET 4/ CET 6/ Beginner/ Intermediate/ Upper intermediate/ Advanced

你是学生/医生/护士/其他：

指定：

**在右边的方框里打勾**

1- 您所在学院的教学语言是什么？

中文□ 英文□ 俄文□ 其他语言□

2- 您在您的学院学习英语吗？

是□ 否□

3-您以前学过英语吗？

是□ 否□

4- 您学英语多久了？

一年□ 两年□ 三年□ 四年□ 五年以上（请注明）

**第二部分：在医学领域使用英语的重要性，圈出您认为合适的数字**

5- 英语在您的学习中很重要。

(1) 不同意 (2) 同意 (3) 不确定

6- 英语对于学业成功很重要。

(1) 不同意 (2) 同意 (3) 不确定

7- 英语对您未来的职业生涯很重要。

(1) 不同意 (2) 同意 (3) 不确定

8- 学习英语是您喜欢的挑战。

(1) 不同意 (2) 同意 (3) 不确定

**第三部分：医学生的语言需求**

A-缺乏

9- 您觉得您目前的整体英语水平是……

(1) 很差　　(2) 差　(3) 好　(4) 很好

10- 您如何评价您在以下技能方面的英语熟练程度？

听力----------

口语　-

阅读　-

写作　-

(1) 很差　　(2) 差　(3) 好　(4) 很好

在右边的方框里打勾

11- 您是否在以下方面面临问题：

(a) 用英语进行对话？　　是□　　否□

(b) 设计简单的问题？　　是□　　否□

(c) 提供对简单问题的回答？　是□　　否 ☑

(d) 说话时选择正确的词？　　是□　　否□

(e) 清楚地表达观点和想法？　是□　　否□

(f) 医学术语的正确发音？　　是□　　否□

(g) 写出正确且达意的句子？　是□　　否□

(h) 在将文章从英文翻译成母语时遇到困难？　是□　　否□

C-必要性

12- 您认为您多久需要一次英语写作技能？

a) 总是　　b) 有时　　c) 从不

13- 在以下方面，学习写作技能对于医学研究的必要程度？

（请用下面的量表圈出合适的答案）

a) 总是　　b) 有时　　c) 从不

| | | | |
|---|---|---|---|
| I.　撰写研究论文 | **a** | **b** | **c** |
| II.　撰写医疗报告 | **a** | **b** | **c** |
| III.　在讲座/会议中做笔记 | **a** | **b** | **c** |

| | | | |
|---|---|---|---|
| IV. 给英语使用者写/回复电子邮件 | **a** | **b** | **c** |
| V. 写文章 | **a** | **b** | **c** |
| VI. 其他，请注明）…… | **a** | **b** | **c** |

14- 您认为您多久需要一次英语阅读技能？

a) 总是 b) 有时 c) 从不

15- 在以下方面，学习阅读技能对于医学研究的必要程度？

a) 总是 b) 有时 c) 从不

| | | | |
|---|---|---|---|
| viii. i.阅读医学期刊和文章 | **a** | **b** | **c** |
| ix. ii.阅读英文课本和讲义 | **a** | **b** | **c** |
| x. iii.阅读科学报刊杂志 | **a** | **b** | **c** |
| xi. iv. 看医方 | **a** | **b** | **c** |
| xii. v.阅读故事和小说 | **a** | **b** | **c** |
| xiii. vi.阅读图形、图表和表格 | **a** | **b** | **c** |
| xiv. vii.其他（请注明）…….. | **a** | **b** | **c** |

16- 您认为您多久需要一次英语口语技能？

a) 总是 b) 有时 c) 从不

17-在以下方面，学习口语技能对于医学研究的必要程度？

a) 总是 b) 有时 c) 从不

| | | | |
|---|---|---|---|
| 在研讨会和会议上发表演讲 | **a** | **b** | **c** |
| 参与日常对话 | **a** | **b** | **c** |
| 进行口头报告 | **a** | **b** | **c** |
| 与外国医生/研究人员交谈 | **a** | **b** | **c** |
| 参与谈判 | **a** | **b** | **c** |
| 参加网络英语讲座 | **a** | **b** | **c** |
| 其他，请注明）…….. | **a** | **b** | **c** |

18- 您认为您多久需要一次英语听力技能？

a) 总是 b) 有时 c) 从不

19- 在以下方面，学习听力技能对于医学研究的必要程度？

b) 总是 b) 有时 c) 从不

| | | | |
|---|---|---|---|
| 了解医疗问题的讨论 | **a** | **b** | **c** |
| 了解日常对话。 | **a** | **b** | **c** |
| 理解研讨会/会议中的口头陈述。 | **a** | **b** | **c** |
| 了解英语广播和电视节目。 | **a** | **b** | **c** |
| 了解来自以英语为母语的国家/地区的访客/客人。 | **a** | **b** | **c** |
| 听懂英文电话。 | **a** | **b** | **c** |
| 其他，请注明）…….. | **a** | **b** | **c** |

20- 医学英语课程更应该强调

____ 医学对话（听/说）

____ 医学阅读

___ 医学写作

请将它们按重要性进行排序，1 为最重要，3 为最不重要。

B-需求

21- 你为什么想学英语？ （圈出合适的字母）

A。个人兴趣

b.为了以后的工作

C。用于学术研究

d.无特殊原因

e.其他原因（请注明）

22- 你喜欢怎样学英语？ （圈出合适的字母）

A。双人成对学习

b.在小组中学习

C。独立学习

23- 以下哪一项使您的学习过程更轻松？

（圈出合适的字母）

A. 音频素材。

b.视频资料。

C。讲义和/或其他印刷材料

24– 您希望课程多久举办一次？ （圈出合适的字母）

A。每周两次

b.每周三次

C。每周三次以上（请注明）

## APPENDIX II. TEACHER'S QUESTIONNAIRE
## TO SURVEY NEED ANALYSIS in MEDICAL ENGLISH TEACHING

Dear Teachers,

I am presently carrying out a research on The Need for Teaching Effective ESP Courses for medical Students in China. I will be grateful if you kindly contribute in this study by completing the attached questionnaire. I can assure you that the information you give will be kept confidential and used for this project work only.

Your reply would be a great help to carry out this research. Thanks for your valuable time and support.

Thanks and regards,

Tarun Sarkar

**Direction:** Please tick (√) in the appropriate space (es) that you consider best express your opinion.

**1. Sex:**

Male

Female

**2. Qualifications:**

Bachelors:

Masters:

Phd:

Others: (if others please mention)

**3. If you have any teaching certificate?**

CELTA

TESOL/ TEFL

Others(if others please mention)

4. Your experience in teaching English in years. _____ **years.**

**5. Did you have any training in teaching ESP?**

Yes

No

**6. Is it necessary for medical students to learn English?**

Yes

No

**7. If yes, what are the reasons according to you?**

(i)

(ii)

(iii)

(iv)

(you can add more)

**8. In your opinion how long should an ESP course for the medical students last?**

1 Year (….)

2 years (…….)

3 years (……)

More than 3 years (…….)

specify (…..)

**9. Do you think that students require English to :**

- Understand medical lectures in English ( )

- Take part in oral English discussion ( )
- Read medical textbooks in English ( )
- Write medical reports or publications in English ( )

**10. Do you work in collaboration with the subject teachers?**

Yes

No

**11. In which aspects of English do you think medical students are usually weak in your context? (you can mark more than one)**

Vocabulary ( )

Grammar ( )

Spelling ( )

Speaking ( )

Reading ( )

Writing ( )

Listening to natives ( )

**12. By means of number (1- most important, to 4- least important) Which of the following skills do you emphasize when teaching English to medical students?**

Reading skills ( )

Writing skills ( )

Listening skills ( )

Speaking skills ( )

**13. Is it easy for you to obtain the necessary teaching materials needed for teaching?**

Yes ( )

No ( )

**14. Do the provided materials cover the needs of the entire course?**

Yes ( )

No ( )

**15. Do you resort to translation to Chinese when teaching?**

_____

**16. To what extent do you think translation into Chinese is useful?**

- Giving clues if necessary (….)

-Translation of important concepts (……)

- Full translation into Chinese (……)

Yes ( )

No ( )

**17. Do you use audio-visual aids in your teaching?**

Yes ( )

No ( )

**18. How much do you think Medical students are interested in learning English?**

- Most of them (….)
- Some of them ( ….)
- Very few of them (….)

**19. In your opinion, how many students should an ESP class/group consist of ?**

10 students (…….)

20 students (…….)
More (……)
specify (……..)

**20. How do you assess your students?**

- Oral test (…..)
- Written test (…..)
- Both (…….)

**21. What can you suggest to make English medical courses more effective and useful ? Please provide your brief suggestions.**

_____

_____

**********

**Appendix 2.1:** 教师问卷调查医学英语教学中的需求分析

亲爱的老师：

我目前正在开展一项关于为中国医学生教授有效的 ESP 课程的必要性的研究。如果您可以完成随附的调查问卷为本研究做出贡献，我将不胜感激。我可以向您保证，您提供的信息将被保密并仅用于此项目工作。

您的回复将对本研究的开展有很大的帮助。感谢您的宝贵时间和支持。

**Direction:** Please tick (√) in the appropriate space (es) that you consider best express your opinion.

方向：请在您认为最能表达您意见的位置打勾(√)。

**1.性别：**

男性

女性

**2. 任职资格：**

学士：

硕士：

博士：

其他：（如有其他请注明）

**3.您是否有教师资格证？**

CELTA

TESOL/TEFL

其他（如有请注明）

**4.您多年的英语教学经验。 _____ 年。**

**5.您是否接受过 ESP 教学方面的培训？**

是

否

**6.您认为医学生有必要学英语吗？**

是

否

**7.如果是，您认为是什么原因？**

（1）

（2）

（3）

（4）

（您可以添加更多）

**8.您认为医学生的 ESP 课程应该持续多长时间？**

1 年 （……）

2 年 （……）

3 年 （……）

超过 3 年 (…….)

具体年限（…..）

**9.您认为学生需要用英语来：**

- 听懂英文医学讲座 ( )
- 参加口语讨论 ( )
- 阅读英文医学教科书 ( )
- 用英文撰写医学报告或出版物 ( )

**10.您是否与该学科老师一起工作？**

是

否

**11. 你认为在你的语境中，医学生通常在英语的哪些方面比较薄弱？ （可以标**记多个）

词汇 （ ）

语法 （ ）

拼写 （ ）

口语 （ ）

阅读 （ ）

写作 （ ）

听当地人的语言（ ）

**12.请用数字的方式表示（1-最重要，4-最不重要），您在教医学生学习英语时强调以下哪些技能？**

阅读能力 （ ）

写作能力 （ ）

听力能力 （ ）

口语能力 （ ）

**13.您是否容易获得教学所需的必要教材？**

是（ ）

否（ ）

**14.提供的教材是否覆盖了整个课程的需要？**

是（ ）

否（ ）

**15.您在教学的时候是否用中文翻译？**

---

**16.您认为翻译成中文是否有帮助？如果是，翻译到何种程度？**

是（ ）

否（ ）

- 必要时提供线索（……）
- 重要概念的翻译（……）
- 全部翻译成中文（……）

**17.您在教学中是否使用视听辅助教具？**

是（ ）

否（ ）

**18.您认为医学生对学习英语的兴趣有多大？**

- 大多数人（……）
- 一部分人 （……）
- 很少的人（.....）

**19.在您看来，一个 ESP 班/小组应该有多少学生？**

10 名学生 (…….)

20 名学生 (…….)

更多的 （……）

具体人数（……..）

**20.您如何评价你的学生？**

- 口试 （…..）
- 笔试 （…..）
- 以上两者 （……）

**21. 您有什么建议可以使英语医学课程更加有效且对学生更有帮助？请简要提供您的建议。**

## APPENDIX III. INTERVIEW QUESTIONS FOR MEDICAL ENGLISH TEACHERS

**Background and teaching experience related basic questions.**

1. Can you tell me about your experience teaching English? How long have you been teaching English?
2. What motivated you to start teaching Medical English specifically? How long have you been teaching Medical English?

**1. Content Knowledge:**

(i) What type of students have you taught in the past, and what specific skills or areas were you responsible for teaching them? (e.g., English proficiency level, educational background, learning goals)
(ii) In your experience, how much does content knowledge (subject knowledge) influence your approach to teaching Medical English?
(iii) Can you share any personal experiences or insights regarding the impact of content knowledge on Medical English instruction?

**2. Teaching Materials:**

(iv) Do you prefer using textbooks or developing your own materials for teaching Medical English? What are the reasons behind your preference?
(v) What challenges do you typically encounter when developing or searching for materials for your Medical English classes?
(vi) How do you address these challenges, and what strategies do you employ to ensure that your teaching materials are effective and engaging for your students?

## Appendix 3.1：医学英语教师的访谈问题

**与背景和教学经验相关的基本问题。**

1. 您能告诉我您的英语教学经验吗？您从事英语教学多长时间了？

2. 什么促使您开始专门从事医学英语教学？您从事医学英语教学多长时间了？

**1. 内容知识：**

（i）您过去教过哪些类型的学生，您负责教授他们的具体技能或领域是什么？（例如，英语水平，教育背景，学习目标）

（ii）根据您的经验，内容知识（学科知识）对您的医学英语教学方法有多大影响？

（iii）您能分享一些关于内容知识对医学英语教学的影响的个人经验或见解吗？

**2. 教学材料：**

（iv）您更喜欢使用教科书还是自行开发材料来进行医学英语教学？您的偏好背后的原因是什么？

（v）在开发或寻找医学英语课程材料时，您通常会遇到哪些挑战？

（vi）您是如何应对这些挑战的，您采用什么策略来确保您的教材对学生是有效和吸引的？

# APENDIX IY. MEDICAL ENGLISH FINAL EXAM

**Level 2**

**Name:** _____ **Work Id No:** _____

**Dept:** _____ **Date:** _____

**Full marks: 100** **Duration: 2 hours**

## Section A: Listening [20 points]

### Listening- 1- Audio

**1. Check your understanding: ordering (5×1= 5 points)**

**Write a number (1–5) to put these topics in the order that they are mentioned in the talk.**

_____ paramedics

_____ anesthetic

_____ World War I

_____ X-rays

_____ blood transfusions

**2. Complete the sentences with one, two or three words from the listening audio**

**(5×1= 5 points)**

1. The speaker says that the First World War caused many deaths and injuries but also had some _____.
2. She goes on to say that X-rays were used widely and helped doctors detect fragments of _____ buried in tissue.
3. Stretchers were used to carry _____ out of the battlefield.
4. Paramedics, who are able to _____ in the field, were first employed in the First World War.
5. One of the greatest medical breakthroughs was _____, allowing many lives to be saved at the end of the war.

### Listening- 2- Video

**Task 1 (5×1= 5 points)**

**Read the following statements and based on the video, write True (T) or False (F) beside them.**

1. An apple contains about half as much sugar as a can of fizzy drink. _____
2. Fructose is better than glucose for providing our body with energy. _____
3. The sugar in fruit is a little different from the sugar in fizzy drinks. _____
4. Some types of sugar don't cause people to gain weight. _____
5. A banana generally contains more sugar than a kiwi fruit. _____

**Task 2 (5×1= 5 points)**

**Write a word to complete the sentences.**

1. A regular-sized soft drink contains about seven to eight …… of sugar.
2. These are chemically identical to the sugars you get in …… food.
3. Sugar is sugar. And you're going to gain …… if you eat too much of it.
4. The …… the fruit, the more sugar it contains.
5. You should eat most of your fruit …… .

## Section B: Reading (40 points)

### Passage 1

1. I admitted her from the emergency room last week with tense ascites1 and the suspicion of an ovarian2 mass. She tells me. 'Suspicion of an ovarian mass' has become a diagnosis of ovarian cancer that has become confirmation of

widespread metastases3, and very likely she has only a few months left. When I saw her in the ER, despite my obvious suspicions, I didn't say the word ‘cancer’-I was taught that if you say that word even very implicitly, that's all a patient remembers. Doesn't matter what else you do, if you speak the C-word just once and basically got yourself into the loudspeaker, screaming nothing but "Cancer cancer cancer cancer cancer" to the patients’ ears. And not that you'd ever want any patient to have cancer of course, but I really, really didn't want her to have it. She was friendly, funny, chatty-despite the fluid in her abdomen holding her breathing-we were like two long-lost old friends finding themselves right standing next to each other at a bus stop and catching up on all our years apart. Her son has a place at med school; her daughter is at the same school my sister went to; she recognized my socks were Duchamp. I stuck in a suction pipe to take off the fluid and admitted her to the ward for my colleagues to further investigate.

2. And now she's telling me what they found. She bursts into tears, and out come all the will-nevers. Her son will graduate from medical school-she won't be there. Her daughter will get married-she won't be able to help with the table plan or throwing bridal bouquet4. She'll never meet her grandchildren. Her husband will never get over it. "He doesn't even know how to work the microwave!" She laughs, so I laugh. I really don't know what to say. I want to lie and tell her everything's going to be fine, but we both know that it won't. I hug her. I've never hugged a patient before-in fact, I think I've hugged a total of only five people in my life, and one of my parents isn't even on that list-but I don't know what else to do

3. We talk about boring, practical things, rational concerns, irrational concerns, and I can see from her eyes it's helping her. It suddenly strikes me that I'm almost certainly the first person she's opened up to about all her heart, the only one she's been totally honest with. It's a strange privilege, an honour I didn't ask for.

4. The other thing I realize is that none of her many, many, many concerns are about herself; it's all about the kids, her husband, her sister, her friends. Maybe that's the definition of a ‘good person’.

5. We had a patient in obstetrics a couple of months ago who was diagnosed with metastatic breast cancer during pregnancy and was advised to deliver her baby at thirty-two weeks so she could start treatment but waited until thirty-seven weeks to give her baby the absolute best possible delivery. She died after a fortnight spent with her baby-who knows whether starting treatment a month sooner would have made any difference.

6. And now I'm sitting with a woman who's asking me if she should have her ashes scattered on the Sicily5. It's her favourite spot, but she doesn't want it to be a sad place for her family once she's gone, such a pure selflessness of someone fully aware of what her absence will do to those she leaves behind. My bleeper goes off-it's the morning call asking for shift handover. I've spent two hours in this room, the longest I've ever spent with a patient who wasn't under anaesthesia. On the way home I phone my mum to tell her I love her.

**Notes:**

1. ascites: accumulation of thick fluid in cavity, like plasma or phlegm
2. ovarian: in or relating to the ovaries, two organs in her body that produce eggs
3. metastases (singular metastasis): the spreading of a disease
4. bridal bouquet: a collection of flowers held by the bride as she walks down the weeding aisle
5. Sicily: a beautiful tourist island of Italy

**Task 1: Check if the statements are True (T) or False (F) (5×2= 10 points)**

1. At the very beginning, I was just aware of that she was very likely to have cancer. _____
2. I feel so sorry to tell her what my colleagues find from her morbidity, which brought her into tears. _____
3. We had such a pleasant conversation even she was constantly feeling abdominal pain because of her ovarian cancer. _____
4. Extremely rarely in life do I hug anyone else, not even my parents. _____
5. I've never stayed two hours in this room with any patient. _____

**Task 2: Answer the following question in FULL SENTENCE (3×2= 6 points)**

1. What would be the major work for the bride’s mother in a wedding ceremony?

_____

_____

2. Why did the mother of Paragraph 5 deny the professional advice to start her treatment earlier?

_____

_____

3. Why doesn't the patient want to scatter her ash to her favourite island?

_____

_____

**Task 3: Answer the following question in OWN WORDS. (4 points)**

In the last line, the author said, *'On the way home I phone my mum to tell her I love her.'* Do you have such a sentimental moment in your professional career as a doctor? Share your story in brief.

_____

_____

**Passage 2**

**Effects of Aspirin on Risk and Severity of Early Recurrent Stroke After Transient Ischaemic Attack and Ischaemic Stroke**

1. Antithrombotic treatment is important in the immediate management of most acute ischaemic vascular events. Since aspirin is available in many households, public education materials recommend self-administration by patients who develop acute chest pain, in addition to seeking immediate medical attention. Pre-hospital self-administration of aspirin is discouraged after stroke because of concerns about possible intracerebral haemorrhage. However, haemorrhage is a rare cause of TIA (transient ischaemic attack) symptoms and it accounts for less than 5% of minor strokes. Although public education should continue to persuade people with transient neurological symptoms to seek medical attention immediately, where this is possible, self-administration of aspirin after transient unfamiliar symptoms might also be appropriate, particularly in rural settings or in less developed countries where access to medical services will be delayed.

2. The risk of recurrent stroke is up to 10% in the week after a TIA or minor stroke. Urgent medical treatment seems to reduce that risk by as much as 80%, but many patients delay seeking medical attention, often for several days or weeks, even when they make a correct self-diagnosis. Public education campaigns, such as the FAST test television campaign, have decreased delays to presentation after major stroke, but there has been little improvement in presentation rates after TIA or minor stroke. In a recent population-based study in the UK, half of recurrent strokes in the days after a TIA occurred prior to medical attention being sought for the initial event, and the situation is likely to be worse in many parts of the developing world in which access to emergency services is poor.

3. There are, however, few published data from randomised trials for the effect of aspirin on risk of early recurrent stroke after TIA or minor stroke, and no data for its effect on severity; evidence of apparently major benefits of urgent medical treatment generally comes only from observational studies. Randomised trials of aspirin versus placebo in longer-term secondary prevention showed only a 13% relative reduction in risk of recurrent stroke with aspirin. Trials of short-term treatment of hospitalised acute stroke also reported a 13% reduction in the 4 week risk of recurrent stroke or intracerebral haemorrhage, but the effect of aspirin on risk or severity of recurrence after more minor stroke was not reported. Yet, observational studies suggest potentially substantial early benefits of aspirin after TIA or minor stroke. In the EXPRESS study, urgent treatment with antiplatelet drugs, blood pressure-lowering drugs, and statins reduced the early risk of stroke by 80%; much of this decrease was hypothesised to have been due to aspirin. Severity of recurrent cerebral events was also reduced in EXPRESS, which might also have been due to aspirin.

4. In the absence of published randomised evidence of the effect of aspirin on risk and severity of early recurrent stroke after TIA or minor stroke, we reanalysed individual patient data and reviewed original paper records on early outcomes from all available trials of aspirin versus placebo in secondary prevention after TIA or ischaemic stroke. To inform on

possible mechanisms of action, we also aimed to study the time course of the interaction between effects of aspirin and dipyridamole in secondary prevention of stroke. Aiming to more reliably estimate the very early time course of onset of effects of aspirin, we also studied risk of recurrent ischaemic stroke in trials of aspirin in treatment of acute stroke, stratified by severity of the pre-randomisation neurological deficit.

5. Pooling the individual patient data from all randomised trials of aspirin versus control in secondary prevention after TIA or ischaemic stroke, we studied the effects of aspirin on the risk and severity of recurrent stroke, stratified by the following time periods: less than 6 weeks, 6-12 weeks, and more than 12 weeks after randomisation.We compared the severity of early recurrent strokes between treatment groups with shift analysis of modified Rankin Scale (mRS) score. To understand possible mechanisms of action, we also studied the time course of the interaction between effects of aspirin and dipyridamole in secondary prevention of stroke. In a further analysis we pooled data from trials of aspirin versus control in which patients were randomised less than 48h after major acute stroke, stratified by severity of baseline neurological deficit, to establish the very early time course of the effect of aspirin on risk of recurrent ischaemie stroke and how this differs by severity at baseline.

6. We pooled data for 15,778 participants from 12 trials of aspirin versus control in secondary prevention. Aspirin reduced the 6 week risk of recurrent ischaemic stroke by about 60% and disabling or fatal ischaemic stroke by about 70%, with greatest benefit noted in patients presenting with TIA or minor stroke. The effect of aspirin on early recurrent ischaemic stroke was due partly to a substantial reduction in severity. These effects were independent of dose, patient characteristics, or aetiology of TIA or stroke. Some further reduction in risk of ischaemic stroke accrued for aspirin only versus control from 6-12 weeks, but there was no benefit after 12 weeks. By contrast, dipyridamole plus aspirin versus aspirin alone had no effect on risk or severity of recurrent ischaemic stroke within 12 weeks, but dipyridamole did reduce risk thereafter (0.76, 0.63-0.92, p=0.005), particularly of disabling or fatal ischaemic. We pooled data for 40,531 participants from three trials of aspirin versus control in major acute stroke. The reduction in risk of recurrent ischaemic stroke at 14 days was most evident in patients with less severe baseline deficits, and was substantial by the second day after starting treatment.

7. Our analyses of data from trials of aspirin in secondary prevention after TIA or ischaemic stroke show that the effect of aspirin on risk of early recurrent events has been underestimated. We show substantial reductions in the early risk of all stroke, ischaemic stroke, and acute myocardial infarction. We also found that a major part of the early benefit of aspirin was due to a previously unrecognised reduction in severity of early recurrent ischaemic stroke, resulting in 80%~90% reductions in the early risk of disabling or fatal recurrent ischaemic stroke after TIA or minor stroke. Although these trials recruited few patients in first few days after TIA or stroke, we found similar reductions in risk of recurrent ischaemic stroke with aspirin in trials of acute ischaemic stroke.

8. Our findings confirm that medical treatment substantially reduces the risk of early recurrent stroke after TIA or minor stroke and identify aspirin as the key intervention. Medical services should give aspirin as soon as possible and public education should be aimed at self-administration after unfamiliar transient neurological symptoms suggestive of threatened stroke. The considerable early benefit from aspirin warrants public education about self-administration after possible TIA. The previously unrecognised effect of aspirin on severity of early recurrent stroke, the diminishing benefit with longer-term use, and the contrasting time course of effects of dipyridamole have implications for understanding mechanisms of action.

**Questions 1-8** **(8×1= 8 points)**

**Choose the correct heading for paragraphs 1-8 from the list of headings from A to J below.**

1. Paragraph 1 _____
2. Paragraph 2 _____
3. Paragraph 3 _____
4. Paragraph 4 _____
5. Paragraph 5 _____

6. Paragraph 6 _____
7. Paragraph 7 _____
8. Paragraph 8 _____

A. Aspirin identified as the key intervention of recurrent stroke after TIA or minor stroke
B. Findings of our research
C. Original data used to study time course of drug interaction and risk of recurrent ischaemic stroke
D. Different trials and observational studies of aspirin
E. Effects of aspirin on risk of early recurrent stroke underestimated
F. Short-term and long-term studies
G. Effects of aspirin on the risk and severity of recurrent stroke
H. Pre-hospital self-administration of aspirin encouraged after transient unfamiliar symptoms
I. Effects of aspirin on the prevention of recurrent stroke
J. Seeking medical attention after TIA or minor stroke delayed

**Questions 9-14** **(12×1= 12 points)**

**Complete the summary of the passage using words from the list in the box.**

| | | |
|---|---|---|
| A. self-administration | B. absorption | C. overestimated |
| D. recurrent | E. fatal | F. underestimated |
| G. acute | H. reduction | I. secondary |
| J. primary | K. early | L. increase |

Aspirin is recommended for (9) _____ prevention after transient ischaemic attack (TIA) or minor stroke. However, the risk of major stroke is very high for only the first few days afterwards, and observational studies show substantially greater benefits of (10) _____ medical treatment with aspirin in the acute phase. The randomized trials show a relative (11) _____ in risk of recurrent stroke with aspirin. The authors hypothesised that the short-term benefits of early aspirin have been (12) _____. So the time course of the interaction between effects of aspirin and dipyridamole in preventing stroke was also studied. They conclude that medical treatment can greatly reduce the risk of early (13) _____ stroke and stress the importance of (14) _____ of aspirin. The considerable early benefit from aspirin can help public get the knowledge and apply aspirin by themselves after possible TIA.

## Section C: Vocabulary [10 points]

**Task 1** **(10×0.5= 5 points)**

**Match the terminologies with their meaning**

| Terminology | Meaning |
|---|---|
| 1. Pathogen ( ___ )<br>2. Host ( ___ )<br>3. Exit ( ___ )<br>4. Transmission ( ___ )<br>5. Environment ( ___ ) | a. infected person or animal carrying the pathogen<br>b. how the pathogen is transferred from host to susceptible person or animal<br>c. the method the pathogen uses to enter the body of the susceptible person/animal<br>d. the action of listening to sounds from the heart, lungs, or other organs, typically with a stethoscope, as a part of medical diagnosis.<br>e. Examination by pressing on the surface of the body to feel the organs or tissues underneath.<br>f. the organism causing the infection |

| | |
|---|---|
| 6. Entry ( ___ )<br>7. Susceptible ( ___ )<br>8. Auscultation ( ___ )<br>9. Percussion ( ___ )<br>10. Palpation ( ___ ) | g. the method the pathogen uses to leave the body of the host<br>h. the place where the transmission of the pathogen takes place<br>i. person/things: the potential future host who is receptive to the pathogen<br>j. the striking of one solid object with or against another with some degree of force. |

**Task 2** **(10×0.5= 5 points)**

**Complete these sentences using the partnerships from Exercise 1. You may have to make some changes to fit the grammar of the sentences.**

| Meaning | Suffix with example |
|---|---|
| 1. surgical puncture ( ___ ) | A. **CENTESIS** (Ex: Arthrocentesis) |
| 2. crushing or breaking up ( ___ ) | B. **DESIS** (Ex: Arthrodesis) |
| 3. binding or surgical fusion ( ___ ) | C. **-IZE** (Ex: Sterilize) |
| 4. surgical removal ( ___ ) | D. **OPSY** (Ex: Autopsy) |
| 5. to treat or combine with ( ___ ) | E. **PLASTY** (Ex: Rhinoplasty) |
| 6. destruction or detachment ( ___ ) | F. **RRHAPHY** (Ex: Nephrorrhaphy) |
| 7. process of viewing ( ___ ) | G. **CLASIS** (Ex: Osteoclasis) |
| 8. surgical fixation ( ___ ) | H. **ECTOMY** (Ex: Mastectomy) |
| 9. surgical repair ( ___ ) | I. **LYSIS** (Ex: Paralysis) |
| 10. Suturing ( ___ ) | J. **PEXY** (Ex: Colpopexy) |

**Section D: Translation** **[10 points]**

**Translate the following passage into Chinese.**

I chose obstetrics and gynaecology (or obs and gynae, as people call it), mostly because I liked that in obstetrics you ended up with twice the number of patients you started with. I also remembered being told by one of the registrars(主治医生) during my student days that he'd chosen obs and gynae because it was easy. "Labour ward is just four things: caesareans, forceps, vacuum extractions, and sewing up the mess you've made."

Another reason for my decision is that, being constantly told by the guys from the upper classes that I shouldn't really be majoring in either medicine or surgery, I finally chose obs and gynae, a blend of both medicine and surgery. It would give me a chance to work in infertility clinics and labour wards—what could be a better, more rewarding use of my training than delivering babies and helping couples who couldn't otherwise have them?

I remember my first vacuum-extraction delivery (真空辅助分娩), making me feel like a real obstetrician at that very moment—it's a pretty abstract job title until you can actually extract a baby. My registrar, Lily, talks me through it gently, but I do it all myself and it feels massively great.

"Congratulations, you did amazingly well there!" says Lily.

"Thank you, Lily!" I reply, then realize she's actually talking to the mum and baby.

**Writing** **[20 points]**

**1. Motivational letter for conference participation.**

Choose any medical conference (to be held in 2022) that is related to your field and as a medical doctor or researcher write a motivational letter to the conference committee to participate in the conference. Your letter must cover your interest to participate in the conference. Try to convince the conference organizers, how you can contribute to their theme. **(no less than 200 words)**

**Note: Clearly mention the conference name, date, venue etc.**

**OR**

**2. Essay: Do technological devices make humans vulnerable (易受伤害的) to cancers?** Write a short essay sharing your opinion in no less than 200 words. Create a title for your essay.

# APPENDIX Y. REFERENCE LETTERS ON APPROBATION

Chongqing University
School of Foreign Languages
and Cultures

No. 174 Shazhengjie
Shapingba, Chongqing,
40044, China
Tel: 86-23-65678513
Fax:56-23-65678500

To Whom It May Concern,

This is to certify that Mr. Tarun Sarkar, during his tenure as a foreign language instructor at the School of Foreign Languages and Cultures, Chongqing University, successfully developed Medical English teaching materials tailored to the needs of various stakeholders at Chongqing University Cancer Hospital. His materials were also used by teachers at Chongqing University Army Hospital and Chongqing Medical University. Additionally, he collected research data from stakeholders at these institutions, as well as from the Chongqing University Foreign Language Institute faculties involved in Medical English instruction.

These materials, based on his research, were utilized in Medical English training programs for teachers and non-medical staff from 2021 to early 2023, across multiple courses at different levels within the hospital.

During his work with us, we found Mr. Sarkar to be sincere, professional, and dedicated. His contributions greatly supported the training programs and helped to enhance the quality of Medical English education within these institutions.

I extend my best wishes to Mr. Sarkar for his future research endeavors and professional career.

Best regards,

Xiaohui, Li

Vice Dean/Professor
School of Foreign Languages and Cultures
Chongqing University
lyxiaohui@cqu.edu.cn.

# 重庆市中医院

## Chongqing Traditional Chinese Medicine Hospital

**To Whom It May Concern,**

This is to certify that Mr. Tarun Sarkar, during my tenure as the Director of the Pathology Department at Chongqing University Cancer Hospital, successfully developed Medical English teaching materials tailored to the needs of the hospital's various stakeholders. Mr. Sarkar, a foreign language instructor at the School of Foreign Languages and Cultures, Chongqing University, created these materials based on his research. They were effectively utilized in Medical English training programs for teachers and non-medical staff from 2021 to early 2023 across multiple courses at different levels within the hospital.

Throughout his collaboration with the hospital, we found Mr. Sarkar to be sincere, professional, and dedicated. His contributions significantly supported our training initiatives and enhanced the quality of Medical English education within the institution.

I extend my best wishes to Mr. Sarkar for his future research endeavors and professional career.

**Best regards,**

Yu Li, M.D., Ph.D.

Professor, Doctoral Supervisor, Director

Department of Pathology, Chongqing Traditional Chinese Medicine Hospital

Email: liyu100@cqu.edu.cn



## APPENDIX YI. COURSE SILLABUS AND MATERIALS