

## AN INVESTIGATION INTO SECOND YEAR MEDICINE STUDENTS' DIFFICULTIES IN LEARNING ENGLISH MEDICAL TERMINOLOGY

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### ABSTRACT

This study investigates students' difficulties in learning English Medical Terminology at Thai Nguyen University of Medicine and Pharmacy (TUMP). A structured questionnaire was used to measure 216 second-year students' difficulties. Results indicated that linguistic ( $M = 4.08$ ) and cognitive ( $M = 4.00$ ) challenges are most significant, followed by affective factors and instructional and resource factors ( $M = 3, 24$ ) and ( $M = 3, 13$ ) respectively. The least difficulties originating from textbook ( $M = 3, 11$ ). The findings highlight that in order to make the medical-terminology learning less difficulties requires coordinated efforts between both students and teachers.

**Keywords:** learner difficulty, English for Specific Purposes (ESP), English for Medical Purposes (EMP), English as a Foreign Language (EFL), Medical Terminology.

### 1. INTRODUCTION

No one can deny the role of English as the global communication tool to connect people from many different cultures and countries without identification of particular needs or specific people (English for general purposes (EGP)). Furthermore, English has been also widely used as the instruction tool in various fields of sciences and technologies (English for Specific Purposes (ESP)). ESP concentrates on a restricted use of language which is designed for specific needs of a particular group of learners and users.

English for Medical Purposes (EMP), a branch of ESP, focuses on medical terminology and communication in clinical contexts. It is designed to meet the entire prerequisites of medical studies and profession. It trains students to use specialized language for anatomy, diseases, and treatments, and to write professional documents such as medical reports and patient records. It's vital for all medical professionals to achieve a firm grasp of medical terminology in order to enhance their day-to-day job duties in clinical contexts.

As a compulsory subject in medical education, EMP also promotes cultural sensitivity and effective interaction with patients from diverse backgrounds (Chu, 2017; Wette & Hawken, 2016; Zrníková & Bujalková, 2018; Liang, 2024). Medical terminology can be regarded as one of the most difficult languages among all the other specialized languages in different fields because medical language includes very complicated long terms which seem difficult to sound, spell, remember and even understand (e.g. encephalo-myeo-neuro-pathy).

## 2. LITERATURE REVIEW

Medical terminology forms the linguistic foundation of medical communication and knowledge transfer. It allows healthcare professionals to describe diseases, procedures, and anatomy precisely and efficiently (Chabner, 2020). However, for medical students especially those studying in an English as a Foreign Language (EFL) context learning medical terms poses considerable challenges due to their linguistic complexity, heavy use of Latin and Greek roots, and the need for accurate recall in both written and spoken contexts (Abdulrahman & Basalama, 2022).

Medical terminology learning differs from general vocabulary learning because it involves morphological analysis, semantic precision, and interdisciplinary usage (Piton, 2019). Therefore, understanding students' difficulties in acquiring this specialized vocabulary is essential for improving EMP instruction.

Mastery of medical terms is crucial for medical students to read textbooks, interpret patient records, and communicate in clinical settings (Basturkmen, 2010). Medical terminology also serves as the bridge between theoretical medical knowledge and practical patient care (Ferguson, 2013). Studies (Cowie & Dalton-Puffer, 2020; Salazar, 2021) indicate that poor command of terminology impedes comprehension of medical texts, reduces communication accuracy, and affects students' professional identity formation.

Medical terms are largely derived from Greek and Latin roots, often containing prefixes, roots, and suffixes that form meaningful combinations (e.g., cardiology, nephritis, bradycardia). Understanding the morphology of medical terms helps students infer meanings of unfamiliar words (Chung & Nation, 2004).

However, studies (Tan & Xiong, 2019; Rahimi et al., 2021) show that many learners struggle to decompose complex terms or confuse similar-looking terms (ileum vs. ilium, ureter vs. urethra). This morphological complexity increases cognitive load and slows vocabulary acquisition.

Other previous studies on difficulties in Learning Medical Terminology have shown that medical students may encounter the following difficulties as below:

### 1. Linguistic Difficulties

Several researchers (Al-Jarf, 2021; Alshammari, 2020) report that medical students face difficulties in: pronouncing long, multi-syllabic terms correctly, memorizing and spelling accurately, understanding meanings without context, distinguishing between homophones or near-synonyms.

Such linguistic barriers are linked to limited morphological awareness and insufficient exposure to authentic medical discourse (Hyland, 2006).

### 2. Cognitive Difficulties

Medical terminology learning requires memorization of thousands of items. Cognitive theories ( Craik & Lockhart, 1972) suggest that shallow repetition leads to poor retention, whereas deep processing using morphology, imagery, and context enhances long-term memory.

Nevertheless, studies (Rahimi et al., 2021; Nguyen & Le, 2023) found that most students rely on rote memorization, leading to quick forgetting and low retention rates.

### 3. Affective and Motivational Factors

Motivation and anxiety influence terminology acquisition. According to Horwitz (1986), learners with high language anxiety tend to avoid complex vocabulary. Similarly, limited self-efficacy in handling long medical words discourages active use (Bandura, 1997).

In the Vietnamese context, Nguyen (2022) found that medical students felt overwhelmed and anxious when facing unfamiliar terms during lectures, particularly in English-medium settings.

#### 4. Instructional and Resource-Related Factors

Instructional methods significantly affect learning outcomes. Traditional EMP classes often emphasize translation and memorization rather than contextual application (Basturkmen, 2010). Studies (Almalki, 2020; Ha & Nguyen, 2021) highlight insufficient integration of digital resources, such as spaced-repetition systems (SRS), flashcards, and online glossaries, despite their proven efficacy (Nation, 2013).

Furthermore, limited time allocation for terminology practice and lack of formative feedback exacerbate learning difficulties.

#### 5. Difficulties originating from textbooks

Many students struggle with English medical terminology due to textbook-related issues such as decontextualized word lists, limited communicative tasks, and outdated references. These materials often emphasize rote memorization over contextual understanding and morphological analysis, hindering long-term retention and practical application (Basturkmen, 2010; Salager-Meyer, 2014; Takaesu, 2019; Tseng, 2022).

Existing studies (e.g., Al-Jarf, 2021; Nguyen, 2022) identify general challenges but rarely explore, the interplay between linguistic, cognitive, affective, and instructional factors together, the students' strategy use in relation to their perceived difficulty, the context-specific data from Vietnamese medical universities, where EMP instruction is often limited in hours and resources.

While many studies have addressed vocabulary learning in ESP, few have specifically focused on medical terminology difficulties among pre-clinical (2nd-year) students, who are transitioning from general English to specialized medical English.

This study, therefore, aims to fill these gaps by systematically investigating the sources of difficulty of second-year medical students in learning medical terminology.

### 3. METHODOLOGY

#### Research questions

1. What are the students' difficulties in learning English Medical terminology at Thai Nguyen University of Medicine and Pharmacy?
2. What suggestions for students and pedagogical solutions can be applied to improve the learning and teaching English for Medical Purposes in general and English medical terminology in particular at Thai Nguyen University of Medicine and Pharmacy?

#### Research design

This study employed a descriptive quantitative research design aimed at investigating the students' difficulties in learning English Medical terminology at Thai Nguyen University of Medicine and Pharmacy (TUMP). The study also sought to propose suggestions and pedagogical solutions to enhance students in their ESP learning.

The quantitative approach was chosen because it allows for systematic data collection, numerical analysis, and objective interpretation of the students' difficulties. A survey questionnaire was used as the main research instrument to gather data from a relatively large group of students efficiently and reliably.

**Subjects of the study**

The subjects of this study consisted of 216 second-year students majoring in Medicine at Thai Nguyen University of Medicine and Pharmacy (TUMP).

All participants voluntarily completed the questionnaire designed to measure their difficulties in learning English Medical terminology. The study ensured confidentiality and anonymity of all respondents, and participation was based on informed consent.

**Research setting**

This study was conducted at Thai Nguyen University of Medicine and Pharmacy (TUMP), one of the key higher education institutions in northern Vietnam responsible for training healthcare professionals, including doctors, pharmacists, nurses, and preventive medicine specialists. The university aims to equip students not only with professional medical knowledge and clinical skills but also with the ability to use English effectively in their academic and professional development, particularly in research, communication, and international collaboration.

**Data collection instrument**

A structured questionnaire was designed as the main instrument for data collection.

The questionnaire comprised five main parts corresponding to the dimensions of learner difficulties including Linguistic Difficulties, Cognitive Difficulties, Affective and Motivational Factors, Instructional and Resource-Related Factors, and difficulties originate from the textbook. Each item was rated on a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The questionnaire was reviewed by three experts in ESP teaching and educational research to ensure content validity, and it was piloted with 20 students from Preventative Medicine Faculty to check for clarity and reliability. The Cronbach's Alpha reliability coefficient for the final questionnaire was 0.89, indicating a high level of internal consistency.

**4. RESULTS AND DISCUSSION**

The results collected from questionnaire were analyzed and levels of difficulty were interpreted from mean scores using five-level scale adapted from Best (1977) and Oxford (1990) as cited in Boone & Boone (2012) where mean ranges from 1.00–1.80 indicate very low difficulty and 4.21–5.00 indicate very high difficulty.

| Mean Range  | Level of Difficulty  |
|-------------|----------------------|
| 1.00 – 1.80 | Very low difficulty  |
| 1.81 – 2.60 | Low difficulty       |
| 2.61 – 3.40 | Moderate difficulty  |
| 3.41 – 4.20 | High difficulty      |
| 4.21 – 5.00 | Very high difficulty |

**1. Students' difficulties in Linguistic**

| Statements                                                                    | N   | Min | Max | Mean        | SD   | Interpretation       |
|-------------------------------------------------------------------------------|-----|-----|-----|-------------|------|----------------------|
| 1. I find it hard to divide medical terms into prefixes, roots, and suffixes. | 216 | 2.0 | 5.0 | <b>3.98</b> | 0.60 | High difficulty      |
| 2. Long, multi-part terms are hard for me to decode.                          | 216 | 2.0 | 5.0 | <b>4.23</b> | 0.48 | Very high difficulty |
| 3. I often cannot identify the meaning of common prefixes/suffixes.           | 216 | 2.0 | 5.0 | <b>4.06</b> | 0.42 | High difficulty      |
| 4. I struggle to connect a term's parts with its overall concept.             | 216 | 2.0 | 5.0 | <b>4.10</b> | 0.52 | High difficulty      |
| 5. I confuse using Greek/Latin roots in forming medical terms.                | 216 | 4.0 | 5.0 | <b>4.19</b> | 0.39 | Very high difficulty |
| 6. I often confuse medical terms that look or sound similar.                  | 216 | 2.0 | 5.0 | <b>3.98</b> | 0.60 | High difficulty      |
| 7. I have difficulty pronouncing long medical terms correctly.                | 216 | 4.0 | 5.0 | <b>4.17</b> | 0.37 | Very high difficulty |
| 8. Unfamiliar stress patterns make terms hard to recall.                      | 216 | 2.0 | 5.0 | <b>3.98</b> | 0.60 | High difficulty      |
| 9. Spelling complex medical terms is difficult for me.                        | 216 | 3.0 | 5.0 | <b>4.13</b> | 0.43 | Very high difficulty |
| 10. I find abbreviations and acronyms confusing.                              | 216 | 2.0 | 5.0 | <b>3.98</b> | 0.60 | High difficulty      |

The overall Mean = 4.08 (SD  $\approx$  0.50) indicates a high level of linguistic difficulty in learning medical terminologies among second-year medical students. The findings from the descriptive statistics reveal that the second-year medical students experienced considerable linguistic difficulties in learning medical terminologies. The overall mean score of 4.08 (on a 5-point Likert scale) indicates that most participants agreed or strongly agreed that they encountered challenges related to the linguistic aspects of medical English. This highlights that morphological complexity, pronunciation, and spelling are among the major linguistic barriers faced by learners in the medical English classroom.

One of the most striking results is that students found long, multi-part medical terms difficult to decode (M = 4.23, SD = 0.48), and they struggled to use Greek and Latin roots correctly (M = 4.19, SD = 0.39). These results suggest that morphological awareness the ability to analyze prefixes, roots, and suffixes is limited among the participants. This aligns with findings by *Baleghizadeh & Dargahi (2012)* and *Tavakoli & Rezazadeh (2014)*, who argued that students often lack the analytical skills necessary to deconstruct and infer the meaning of complex medical terms. In the context of English for Medical Purposes, the overreliance on rote memorization rather than morphological understanding can hinder long-term vocabulary retention and comprehension. Pronunciation also emerged as a notable difficulty (M = 4.17, SD = 0.37). Medical terms often originate from Greek and Latin, containing unfamiliar phonological patterns and stress placements, which complicates pronunciation for English foreign learners. This finding is consistent with *Al-Khasawneh (2017)*, who reported that Arabic and Asian background medical students often mispronounce multi-syllabic medical terms due to the lack of explicit phonetic training. The confusion of terms with similar sounds or spellings (e.g., *ileum* vs. *ilium*) further supports the

conclusion that phonological and orthographic awareness needs more systematic attention in EMP courses.

Students also indicated substantial difficulty in spelling complex medical terms ( $M = 4.13$ ) and identifying common prefixes and suffixes ( $M = 4.06$ ). This suggests gaps in word formation competence and the understanding of medical affixation rules. As *Nation (2013)* and *Schmitt (2010)* note, mastery of affixes significantly enhances learners' ability to infer meaning, recall vocabulary, and improve spelling accuracy. Therefore, the lack of focus on affix-based vocabulary instruction may contribute to students' struggles with spelling and understanding medical terms in context.

Moreover, the relatively consistent standard deviations (ranging from 0.37 to 0.60) indicate that these linguistic challenges were shared widely among participants, rather than limited to a small subset of weaker students. This suggests that the problem is systemic, reflecting both instructional limitations and the inherent linguistic complexity of medical English. Similar observations were made by *Teng (2019)*, who emphasized that ESP learners in medical fields often receive inadequate linguistic scaffolding, leading to difficulties in integrating terminology knowledge into communicative competence.

## 2. Cognitive Difficulties

| Statements                                                                      | N   | Minimum | Maximum | Mean  | Std. Deviation | Interpretation  |
|---------------------------------------------------------------------------------|-----|---------|---------|-------|----------------|-----------------|
| 11. I feel overwhelmed by the large number of medical terms I need to memorize. | 216 | 2.0     | 5.0     | 3.958 | 0.5650         | High difficulty |
| 12. I often forget medical terms after a short time.                            | 216 | 2.0     | 5.0     | 3.977 | 0.4253         | High difficulty |
| 13. I find it difficult to recall terms when doing tests or speaking in class.  | 216 | 2.0     | 5.0     | 3.977 | 0.4253         | High difficulty |
| 14. I have trouble linking new medical terms to what I already know.            | 216 | 2.0     | 5.0     | 3.977 | 0.4253         | High difficulty |
| 15. Learning medical terms requires more effort than other English vocabulary.  | 216 | 2.0     | 5.0     | 4.120 | 0.4141         | High difficulty |

The results indicate that students experienced a **high level of cognitive difficulty** in learning English medical terminology, with an overall mean of **4.00**. Moreover, the descriptive statistics reveal that second-year medical students generally experience a **high level of cognitive difficulty** in learning English medical terminology. The mean scores of all five items range from **3.958 to**



**4.120** on a 5-point Likert scale, indicate agreement with statements describing mental challenges in memorizing, recalling, and connecting medical vocabulary. The **highest mean (M = 4.120, SD = .4141)** corresponds to the item *“Learning medical terms requires more effort than other English vocabulary,”* suggesting that students perceive medical terminology as particularly demanding compared with general English.

Three items share an identical mean of **3.977**, indicating consistent challenges in **retention and retrieval**. Students often forget medical terms after a short time and find it difficult to recall them during tests or classroom discussions. This supports prior findings that medical terminology’s volume and complexity overwhelm working memory and long-term retention (Teng, 2019; Xue & Nation, 1984). The item *“I have trouble linking new medical terms to what I already know”* also shares this mean, suggesting weak associative learning a key cognitive process in vocabulary acquisition (Nation, 2013).

The item *“I feel overwhelmed by the large number of medical terms I need to memorize”* (M = 3.958, SD = .5650) highlights **cognitive overload**, a common issue in specialized vocabulary learning where students face excessive rote memorization demands (Sadeghi et al., 2015). Overall, the relatively low standard deviations (.4141–.5650) indicate **consistent responses** among students, confirming that these difficulties are widely shared rather than isolated.

These findings align with previous research showing that **memorization, recall, and conceptual linking** are key barriers in learning medical terminology (Zhou, 2018; Takač & Požega, 2019). The results emphasize the need for instructional strategies that promote **deeper cognitive processing**, such as morphological analysis, contextual learning, and repeated exposure, rather than mere rote memorization.

### 3. Affective Factors

| Statements                                                                                    | N   | Minimum | Maximum | Mean  | Std. Deviation | Interpretation                     |
|-----------------------------------------------------------------------------------------------|-----|---------|---------|-------|----------------|------------------------------------|
| 16. I feel anxious when I cannot remember medical terms during tests or discussions.          | 216 | 2.0     | 5.0     | 3.949 | .6486          | High difficulty                    |
| 17. I feel difficult in learning new medical terms.                                           | 216 | 2.0     | 5.0     | 3.977 | .4253          | High difficulty                    |
| 18. I am motivated to learn medical terminology because it is important for my future career. | 216 | 2.0     | 5.0     | 4.060 | .5292          | Very high motivation               |
| 19. I lose interest when the terms are too long or complex.                                   | 216 | 1.0     | 4.0     | 2.106 | .3644          | Low difficulty / Low interest loss |
| 20. I feel stressed when I see many                                                           | 216 | 1.0     | 4.0     | 2.106 | .3891          | Low stress level                   |

|                                     |  |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|--|
| unfamiliar medical terms in lesson. |  |  |  |  |  |  |
|-------------------------------------|--|--|--|--|--|--|

The results reveal a moderate level of affective difficulty among students learning English medical terminology, with an overall mean of 3.24. The descriptive statistics also reveal that affective factors play a significant role in students' learning of English medical terminology. Among the five affective items, motivation shows the highest mean score ( $M = 4.060$ ,  $SD = 0.5292$ ), indicating that most second-year medical students are highly motivated to learn medical terminology due to its relevance to their future careers. This finding aligns with Dörnyei's (2005) view that instrumental motivation learning a language for professional advancement strongly influences learners' persistence and achievement.

Anxiety and difficulty in learning new terms also show relatively high mean values ( $M = 3.949$  and  $M = 3.977$ , respectively), suggesting that many students experience emotional strain when recalling or memorizing medical terms. This result supports Horwitz et al. (1986), who emphasized that language learning anxiety negatively affects learners' performance and confidence. Similarly, high cognitive load and the technical nature of medical vocabulary may intensify these feelings (Tavakoli & Zarrinabadi, 2018).

In contrast, the lower mean scores for loss of interest ( $M = 2.106$ ,  $SD = 0.3644$ ) and stress when encountering unfamiliar terms ( $M = 2.106$ ,  $SD = 0.3891$ ) suggest that although students sometimes feel challenged by term complexity, these emotions are less dominant compared to their motivation and anxiety levels.

Overall, the findings indicate that while second-year medical students are strongly motivated, their learning is hindered by anxiety and perceived difficulty. Addressing emotional barriers through supportive instruction, reduced memorization pressure and contextualized learning can help maintain motivation and enhance learning outcomes.

#### 4. Instructional and Resource Factors

| Statements                                                                              | N   | Minimum | Maximum | Mean  | Std. Deviation | Interpretation    |
|-----------------------------------------------------------------------------------------|-----|---------|---------|-------|----------------|-------------------|
| 21. The lecturers explain word roots and structures clearly and easy to understand.     | 216 | 2.0     | 5.0     | 3.204 | .9277          | Moderate clarity  |
| 22. I find it difficult to understand lecturers' explanations of complex medical terms. | 216 | 2.0     | 5.0     | 3.870 | .6411          | High difficulty   |
| 23. The pace of the medical terminology lessons is too fast for me.                     | 216 | 2.0     | 5.0     | 3.931 | .5704          | High difficulty   |
| 24. Class activities help me use medical terms in context (e.g.,                        | 216 | 1.0     | 4.0     | 2.106 | .3891          | Low effectiveness |



|                                                                                                                                        |     |     |     |       |       |                 |
|----------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|-------|-----------------|
| dialogues, case studies).                                                                                                              |     |     |     |       |       |                 |
| 25. Lecturers rarely use visuals, videos, or real examples when explaining medical terms.                                              | 216 | 1.0 | 4.0 | 2.106 | .3891 | Low frequency   |
| 26. I receive limited feedback from lecturers on how to use medical terms correctly.                                                   | 216 | 2.0 | 5.0 | 3.852 | .6656 | High difficulty |
| 27. Classroom activities do not help me remember medical terms effectively.                                                            | 216 | 1.0 | 4.0 | 2.106 | .3891 | Low support     |
| 28. I find difficulties when lecturers integrate medical terminology with clinical or content-based lessons (e.g., anatomy, diseases). | 216 | 2.0 | 5.0 | 3.856 | .6632 | High difficulty |

The findings indicate a moderate level of instructional and resource-related difficulty (overall mean = 3.13).

The descriptive statistics indicate that students face several instructional and resource-related challenges in learning English medical terminology. The mean score for the clarity of lecturers' explanations ( $M = 3.204$ ,  $SD = 0.9277$ ) suggests that while explanations are somewhat understandable, many students still experience confusion. This is reinforced by the relatively high mean for difficulty in understanding complex terms ( $M = 3.870$ ,  $SD = 0.6411$ ), implying that explanations may not sufficiently simplify specialized terminology.

The high mean for lesson pace ( $M = 3.931$ ,  $SD = 0.5704$ ) reveals that students perceive classes as proceeding too quickly, leaving little time for comprehension and practice. In contrast, low mean scores for class activities promoting contextual use ( $M = 2.106$ ,  $SD = 0.3891$ ) and visual aids or real examples ( $M = 2.106$ ,  $SD = 0.3891$ ) show limited opportunities for interactive or multimodal learning. This lack of contextualization is significant because visual and communicative methods enhance retention and understanding of technical vocabulary (Nation, 2013; Basturkmen, 2010). Additionally, students report insufficient feedback on terminology use ( $M = 3.852$ ,  $SD = 0.6656$ ), indicating a need for more formative assessment and instructor support. Similarly, classroom activities are perceived as ineffective for memorization ( $M = 2.106$ ,  $SD = 0.3891$ ), suggesting a gap between teaching approaches and learners' needs for repetition and contextual practice. Finally, the difficulty in integrating terminology with clinical content ( $M = 3.856$ ,  $SD = 0.6632$ ) highlights the challenge of applying linguistic knowledge in medical contexts—an issue also noted

in English for Medical Purposes (EMP) research (Bosher & Smalkoski, 2002; Hutchinson & Waters, 1987).

Overall, the findings suggest that instructional methods in medical terminology courses may rely too heavily on teacher-centered explanations and lack interactive, contextualized, and visual learning support. Addressing these issues through task-based, multimodal, and feedback-rich approaches could significantly improve students' comprehension and retention of medical vocabulary.

### 5. Difficulty from textbook and Learning Resources

| Statements                                                                                               | N   | Minimum | Maximum | Mean  | Std. Deviation | Interpretation      |
|----------------------------------------------------------------------------------------------------------|-----|---------|---------|-------|----------------|---------------------|
| 29. The textbooks provide clear explanations and examples of medical terms.                              | 216 | 2.0     | 5.0     | 4.231 | .4843          | Very low difficulty |
| 30. There are not enough exercises or tasks for practicing medical terms.                                | 216 | 1.0     | 4.0     | 2.264 | .5368          | High difficulty     |
| 31. The glossary in the textbook or handouts is difficult to use.                                        | 216 | 2.0     | 5.0     | 3.856 | .6632          | High difficulty     |
| 32. I have difficulty finding reliable online resources to learn medical terms.                          | 216 | 1.0     | 4.0     | 2.264 | .5368          | High difficulty     |
| 33. The available reference books are outdated or irrelevant.                                            | 216 | 1.0     | 4.0     | 2.704 | .8382          | Moderate difficulty |
| 34. Multimedia resources (videos, apps, websites) for medical terminology are not used in class.         | 216 | 1.0     | 4.0     | 3.000 | .9301          | Moderate difficulty |
| 35. There is a lack of specialized dictionaries for medical terminology in our library or online system. | 216 | 2.0     | 4.0     | 3.102 | .7648          | Moderate difficulty |
| 36. The pronunciation tools or recordings for                                                            | 216 | 2.0     | 5.0     | 3.343 | .8590          | Moderate difficulty |

|                                                                                                                          |     |     |     |       |       |                     |
|--------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-------|-------|---------------------|
| medical terms are insufficient.                                                                                          |     |     |     |       |       |                     |
| 37. The classroom lacks adequate facilities (e.g., projector, internet, sound system) for effective terminology lessons. | 216 | 2.0 | 5.0 | 3.287 | .9256 | Moderate difficulty |
| 38. I cannot easily access digital learning platforms or online terminology exercises after class.                       | 216 | 2.0 | 5.0 | 3.287 | .9104 | Moderate difficulty |

The findings show a moderate level of difficulty concerning textbook and resource factors (overall mean = 3.11). The descriptive statistics also reveal mixed perceptions regarding textbook and resource-related difficulties in learning English medical terminology among the 216 participants. The highest mean score ( $M = 4.23$ ,  $SD = 0.48$ ) indicates that most students agreed their textbooks generally provide clear explanations and examples of medical terms. However, several resource-related weaknesses emerged.

A key issue was the lack of sufficient exercises for practice ( $M = 2.26$ ,  $SD = 0.54$ ), suggesting that students desire more opportunities for application rather than passive learning. Similarly, the difficulty of using glossaries ( $M = 3.86$ ,  $SD = 0.66$ ) highlights challenges in navigating textbook tools effectively. Limited access to reliable online resources ( $M = 2.26$ ,  $SD = 0.54$ ) and outdated reference books ( $M = 2.70$ ,  $SD = 0.84$ ) further indicate that available materials may not meet learners' needs for current and interactive content.

Students also reported moderate challenges related to multimedia and technological resources, such as limited use of videos or apps in class ( $M = 3.00$ ,  $SD = 0.93$ ) and inadequate pronunciation tools ( $M = 3.34$ ,  $SD = 0.86$ ). Similarly, library and classroom facilities were perceived as insufficient for effective learning ( $M = 3.10$ – $3.29$ ), suggesting a need for improved digital and audiovisual support.

These findings align with prior research showing that EMP and medical terminology textbooks often emphasize memorization over contextualized learning and provide limited practice activities (Basturkmen, 2019; Nguyen & Le, 2022). The lack of interactive materials and technological integration can hinder students' engagement and retention (Flowerdew & Peacock, 2020). Therefore, incorporating multimedia resources, updated references, and contextualized exercises could enhance learners' comprehension and motivation in mastering medical terminology.

### Comparing the five factors

The descriptive statistics comparing the five factors linguistic, cognitive, affective, instructional, and textbook-related difficulties reveal varying levels of challenge faced by students learning English medical terminology. Overall, students reported moderate to high difficulty across all dimensions.

Linguistic difficulties received relatively high mean scores, indicating that students struggled with the complex morphology and pronunciation of medical terms. This aligns with Nation (2013), who noted that the specialized vocabulary of EMP often exceeds general lexical knowledge, making comprehension and retention difficult.

Cognitive difficulties also scored high, suggesting problems with memory load and recall. Students found it hard to memorize, retain, and retrieve medical terms during assessments. This reflects Baddeley's (2012) working memory theory, emphasizing the limits of short-term storage when handling large sets of unfamiliar terms.

Affective factors, including anxiety and low confidence, were moderately high. Emotional barriers can impede vocabulary acquisition and fluency, consistent with Horwitz (2010), who found that anxiety negatively affects language learning performance.

Instructional and resource-related difficulties showed moderate means. Although lecturers explained concepts, many students still found lessons unclear or overly complex. This is consistent with Hutchinson and Waters (1987), who emphasized that ESP teaching must adapt to learners' needs and levels of understanding.

Finally, textbook and material difficulties revealed that while explanations were generally clear, insufficient exercises and decontextualized content limited students' practice opportunities. Basturkmen (2010) highlighted that authentic, contextualized tasks are essential for EMP vocabulary retention.

When examined collectively, the findings reveal that linguistic and cognitive difficulties constitute the core challenges, while affective and instructional factors exacerbate these difficulties. Linguistic complexity especially in morphology, pronunciation, and spelling places a high cognitive load on memory and understanding. This cognitive strain is further intensified by emotional anxiety and by the limited opportunities for reinforcement provided through instructional materials.

## 5. CONCLUSIONS AND IMPLICATIONS

This study revealed that second-year medical students at Thai Nguyen University of Medicine and Pharmacy face considerable challenges in learning English medical terminology across five dimensions: linguistic, cognitive, affective, instructional, and textbook-related factors. Among these, linguistic and cognitive difficulties were most prominent, as students struggled to analyze complex word structures, recall medical terms, and apply them accurately in context. These findings are consistent with previous research (Cabr , 2010; Nation, 2013), emphasizing that mastering specialized vocabulary requires morphological awareness and contextualized practice. Affective variables—such as anxiety and low self-confidence—further hindered learning (Horwitz et al., 1986), while limited practice tasks and insufficient feedback reduced opportunities for reinforcement and self-directed learning (Bocanegra-Valle, 2010). Addressing these challenges therefore requires coordinated efforts between teachers and students.

For students, independent learning should be encouraged through self-testing, flashcards, and online tools; the use of mnemonic and visualization strategies can strengthen retention and reduce anxiety. For teachers, explicit instruction in word formation, systematic practice through quizzes and case-based tasks, and the integration of multimedia resources can enhance engagement and comprehension. Creating supportive classrooms with constructive feedback and peer collaboration can also mitigate affective barriers.

Overall, improving English for Medical Purposes instruction at TUMP demands a more learner-centered, interactive, and strategy-based approach. Combining explicit linguistic guidance with cognitive strategy training, affective support, and technological innovation can foster more effective and sustainable mastery of medical terminology. Future research should examine the long-term impact of such interventions on students' language development and professional communication competence.

## REFERENCES

- Basturkmen, H. (2019). *Developments in English for Specific Purposes: A multi-disciplinary approach*. Palgrave Macmillan.
- Best, J. W. (1977). *Research in education* (3rd ed.). Prentice Hall.
- Bocanegra-Valle, A. (2010). *Evaluating and designing English for specific purposes materials*.
- Boone, H. N., Jr., & Boone, D. A. (2012). Analyzing Likert data. *Journal of Extension*, 50(2), 1–5. <https://tigerprints.clemson.edu/joe/vol50/iss2/2>
- Bosher, S., & Smalkoski, K. (2002). From needs analysis to curriculum development: Designing a course in health-care communication for immigrant students. *English for Specific Purposes*, 21(1), 59–79.
- Cabré, M. T. (2010). *Terminology and specialized communication*.
- Chu (2017). Research on the Curriculum and Teaching Mode of EMP in English Teaching in Medical Colleges and Universities.
- Dörnyei, Z. (2005). *The Psychology of the Language Learner: Individual Differences in Second Language Acquisition*. Lawrence Erlbaum Associates.
- Flowerdew, J., & Peacock, M. (2020). *Research perspectives on English for academic purposes*. Cambridge University Press.
- Graves, M. F. (2016). *The vocabulary book*.
- Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125–132.
- Hutchinson, T., & Waters, A. (1987). *English for Specific Purposes: A Learning-Centred Approach*. Cambridge University Press.
- Nation, I. S. P. (2013). *Learning Vocabulary in Another Language (2nd ed.)*. Cambridge University Press.
- Nguyen, T. M., & Le, H. T. (2022). Challenges in learning medical English terminology among Vietnamese students. *Asian ESP Journal*, 18(2), 55–70.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Newbury House.
- Sadeghi, K., Hassani, M. T., & Hemmati, S. (2015). English for medical purposes: A needs analysis approach. *Procedia - Social and Behavioral Sciences*, 192, 634–643.
- Salager-Meyer, F. (2014). Writing and publishing in peripheral scholarly journals: How to enhance the global influence of multilingual scholars. *Journal of English for Academic Purposes*, 13, 78–88.
- Schmitt, N. (2010). *Researching Vocabulary: A Vocabulary Research Manual*. Palgrave Macmillan.
- Takač, V. P., & Požega, K. (2019). Vocabulary learning strategies and foreign language acquisition. *Journal of Language and Education*, 5(3), 64–73.

- Takaesu, A. (2019). The role of context in teaching English for medical purposes. *Asian ESP Journal*, 15(3), 120–139.
- Tavakoli, M., & Zarrinabadi, N. (2018). Language learning anxiety and self-efficacy: The mediating role of motivation. *Asian-Pacific Journal of Second and Foreign Language Education*, 3(16), 1–18.
- Teng, F. (2019). Incidental vocabulary acquisition from reading and listening: A meta-analysis. *Studies in Second Language Acquisition*, 41(2), 457–483.
- Tseng, M. (2022). Evaluating medical English textbooks: Content, context, and learner engagement. *English for Specific Purposes World*, 23(65), 1–15.
- Wette, R. & Hawken, S. (2016). Measuring gains in an EMP course and the perspectives of language and medical educators as assessors. *English for Specific Purposes*, 42, 38-49.
- Xue, G., & Nation, P. (1984). *A university word list*. Language Learning and Communication, 3(2), 215–229.
- Zhou, M. (2018). Learning challenges in English medical terminology: A cognitive perspective. *Asian ESP Journal*, 14(7), 54–70.
- Zrníková, P., & Bujalková, M. (2018). Development of academic skills and learner's autonomy in medical English courses. *Journal of Language and Cultural Education*, 6(3):1-20.