



STUDENTS' LINGUISTIC SKILLS AND PROBLEMS IN LEARNING MEDICAL VOCABULARY AT A HEALTH SCIENCES UNIVERSITY IN THE UAE

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Abstract:

English for Specific Purposes (ESP) courses help the students to be more effective and confident in their profession. The main aim of this research was to explore the difficulties faced by students of a Medical and Health Sciences University in learning medical vocabulary which is a vital part of teaching English for Medical Purposes (EMP). It was hypothesized that students coming from non-English medium backgrounds find it difficult to understand and learn medical vocabulary due to weak linguistic skills. A questionnaire was sent to the undergraduate and post-graduate students of Medical, Dental, Pharmacy and Nursing Colleges and it was observed that the majority of students agreed that knowing medical vocabulary in English is important for their profession and students coming from Arabic medium schools find it difficult to understand and learn medical vocabulary and more than 50% use an English-Arabic dictionary. Interestingly, listening emerged as the weakest skill but 97% of participants feel that practice in hospitals can make learning the medical terms easy. Based on these findings, the authors have suggested some interactive activities that can be used in the class for better retention and made some recommendations.

Keywords: medical vocabulary, English for specific purposes, English for medical purposes, linguistic skills, retention

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1. Introduction

English for Specific Purposes (ESP) is a target-oriented presumption based on learners' required needs and goals (Esmail Zare-Behtash, 2017), therefore the course materials are specially designed to fulfill the needs of the specific discipline. Teaching English to medical students requires a different methodology than teaching General English, as it emphasizes a specific vocabulary, hence named English for Medical Purposes (EMP). It works within the broader category of English for Specific Purposes (ESP). The importance of teaching medical vocabulary in English cannot be undermined, as it is needed to work in the multicultural, multilingual environment of the UAE where English coexists with Arabic, which is the first language of the majority of students. Not all the students come from English medium backgrounds, and as the medium of instruction in medical universities is English, these students have to struggle with medical vocabulary, which hinders not only their comprehension and communication but also their scores.

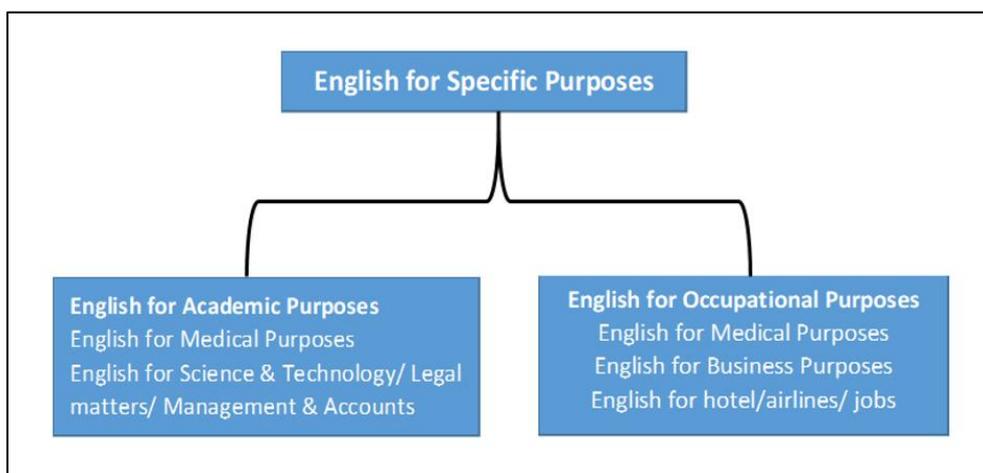


Figure 1: English for Specific Purposes

Sabbah has differentiated between learners' L1 (Arabic) and L2 (English) and says that orthographically, there is no distinction between upper and lower-case letters in Arabic but there is a clear distinction in English. One of the most noticeable differences between the two languages is that Arabic is written from right to left while English is written from left to right (Sabbah, 2015). Moreover, the influence of the mother tongue confuses the learner, and he commits mistakes. Nunan states, "Where the first and second language rules are not the same, errors are likely to occur as a result of interference between the two languages." (Nunan, 2001). Another cause of making mistakes is inadequate teaching methods. Methods that encourage translation cause students to make mistakes (Al-Buainain, 2010).

Vocabulary development is a major area of concern in ESP courses, which is consistent with Saville-Troike statement about academic achievements that "Vocabulary knowledge is the single most important area of second language competence" (Saville-Troike, 1984). Medical students need to learn what specialist words mean, how they are used,

and how pronounced. They know that the better their Medical English, the easier the contact with foreign patients, colleagues and the literature will be.

Good linguistic skills will help the medical students/professionals in:

- Reading medical literature;
- Presenting in seminars and conferences;
- Participating in group discussions with colleagues;
- Giving instructions to staff;
- Communicating with patients and their families.

The vocabulary lesson (or part of the lesson) still has a prominent place in every kind of syllabus. The importance of vocabulary learning was expressed by Wilkins in his statement: *"Without grammar very little can be conveyed, without vocabulary nothing can be conveyed"* (Wilkins, 1976). According to Donesch-Jezo, students are highly motivated to increase specialist vocabulary knowledge, as they are aware of its beneficial role in their professional careers. Therefore, teaching specialist vocabulary effectively is one of the main roles of the ESP/EAP teacher (Donesch-Jezo, 2014).

Learning medical vocabulary involves selecting a list of the most important words and learning their definitions. Without medical vocabulary, it could be difficult or impossible for a non-English speaker to get the help he or she needs. Therefore, any list of medical vocabulary for ESL students should include words related to medical people (specialists and staff), places (e.g. OT and OPD), body systems, diagnostic and surgical procedures, etc.

According to Khan, each medical term has at least two of the following: (Khan, 2016)

1. **Word root:** fundamental meaning of the word;
2. **Combining form:** an 'o' or another vowel;
3. **Suffix:** attached at the end of the term to modify its meaning;
4. **Prefix:** added in the beginning to alter its meaning;
5. **Background.**

In the UAE, students enter the Medical/ Dental/ Pharmacy and Nursing Colleges directly after high school where they were used to being guided and had a defined learning material to memorize. As a result, most students acquire passive learning habits. In most government schools, English is taught as a second language, but the medical school curriculum is taught in English, so when they join a university, where the medium of instruction is English, students do not have adequate linguistic skills to cope with the medical syllabus.

2. Material and Methods

2.1 Recruitment of Candidates

This quantitative study was conducted among 197 students studying in the Medical, Dental, Pharmacy, and Nursing Colleges of a Health Sciences university in the UAE. It aimed to find the linguistic problems faced by students in learning medical terminology

after joining the Health Sciences University. The respondents were selected randomly and a validated questionnaire was sent online. The students who were not willing to participate were excluded from the study.

2.2 Ethical Consideration

The students were contacted after the researchers received approval from the University Research and Ethical Committee.

2.3 Data Collection

Questions were developed based on previous literature (Khan, 2016) and modified according to the needs of the respondents to collect information on all the four linguistic skills and the problems faced by students in learning medical vocabulary. A consent form was also sent and the respondents were assured that the information will remain confidential.

3. Demographic Details

The independent variables were the participants' College and year of study, gender, nationality, medium of instruction in school, and the number of attempts they made to pass the proficiency tests.

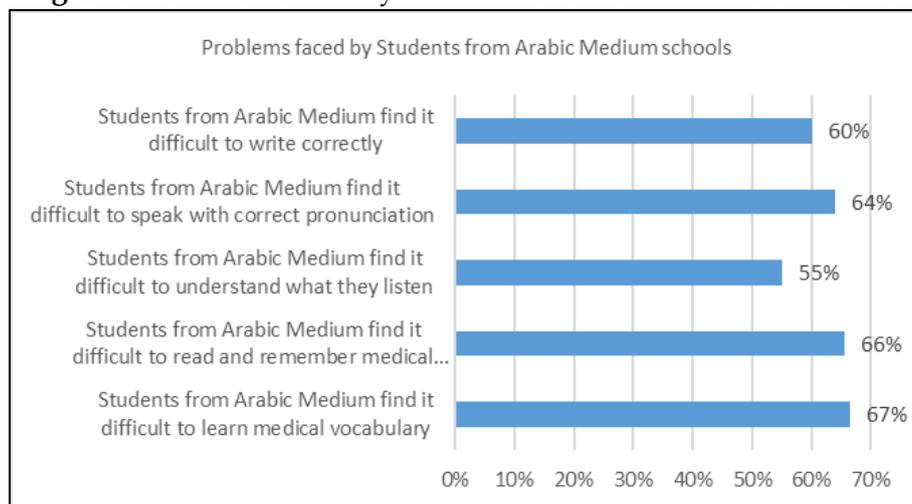
Table 1: Demographic Details of Participants

| Item | | N=197 | % |
|--|-------------------------------|-------|------|
| College | Medical | 111 | 56.3 |
| | Dental | 25 | 12.7 |
| | Pharmacy | 22 | 11.2 |
| | Nursing | 30 | 15.2 |
| | Masters in Pharmacy & Nursing | 9 | 4.6 |
| Year of Study | 1 st year | 83 | 42.1 |
| | 2 nd year | 73 | 37.1 |
| | 3 rd year | 15 | 7.6 |
| | 4 th year | 15 | 7.6 |
| | 5 th year | 11 | 5.6 |
| Gender | Male | 133 | 67.5 |
| | Female | 64 | 32.5 |
| Nationality | Arabs | 100 | 50.8 |
| | Non-Arabs | 97 | 49.2 |
| Medium of instruction in school | English | 127 | 64.5 |
| | Arabic | 70 | 35.5 |
| No. of attempts taken to pass TOEFL/ IELTS | 1 st attempt | 181 | 91.9 |
| | 2 nd attempt | 13 | 6.6 |
| | 3 rd attempt | 2 | 1 |
| | More than 3 attempts | 1 | 0.5 |

4. Results and Discussion

The main area of focus is the problems faced by students with poor linguistic skills. Richards mentions that *"listening skills are a core component of second language competency"* (Richards, 2008), but listening was found to be the strongest skill as only 55% of participants agreed that students coming from Arabic medium schools find it difficult to understand what they listen to (others skills were considered more difficult by students). However, problems in writing, reading, speaking, and learning skills among students coming from Arabic medium schools were identified by 60%, 66%, 64%, and 67% of participants respectively as shown in Figure 2. These statistics contradict the study conducted by Hamza, where a maximum number of students agreed to have poor listening skills and the least number of students had poor writing skills (Hamza, 2018). Taj Mohammed also identified that the students could not comprehend an audio text as they could not understand the instructions in English (Taj Mohammad, 2016). As for writing skills, according to research conducted by Jamal Kaid, it was found that the respondents had a negative attitude towards texting and they viewed it as causing a negative impact on the structure of standard English (Jamal Kaid Mohammed Ali, 2019).

Figure 2: Problems Faced by Students from Arabic Medium Schools

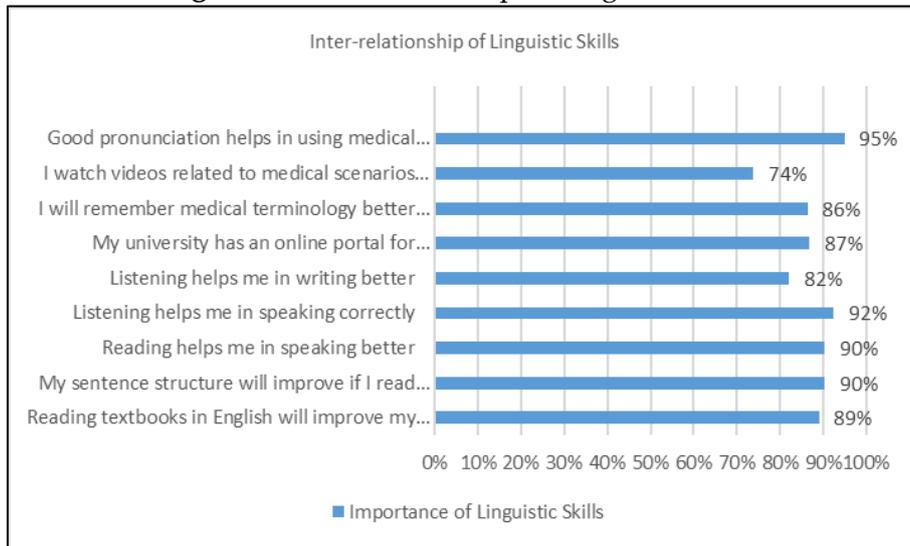


When the questionnaire was analyzed, the interrelationship of skills emerged as an important aspect as seen in Figure 3 below. About 92% of participants agreed that listening helps them in speaking better and 82% believed that listening helps them in writing better. Another 90% opined that reading helps them in speaking better. The importance of reading was established when 89% of participants agreed that reading textbooks in English will improve their medical vocabulary and the same percentage agreed that their sentence structure will improve if they read more. This interrelation has been highlighted by Al Gharabally in *"Writing and speaking are both productive skills, but unlike speaking, learners do not get an immediate reaction from their audience"* (Al-Gharabally, 2015). While talking about the effects of texting on reading and writing, Janin-Starr also

states that “As dropping consonants and vowels and poor punctuation become a habit, this may destroy one’s reading and writing skills” (Janin-Starr, 2014).

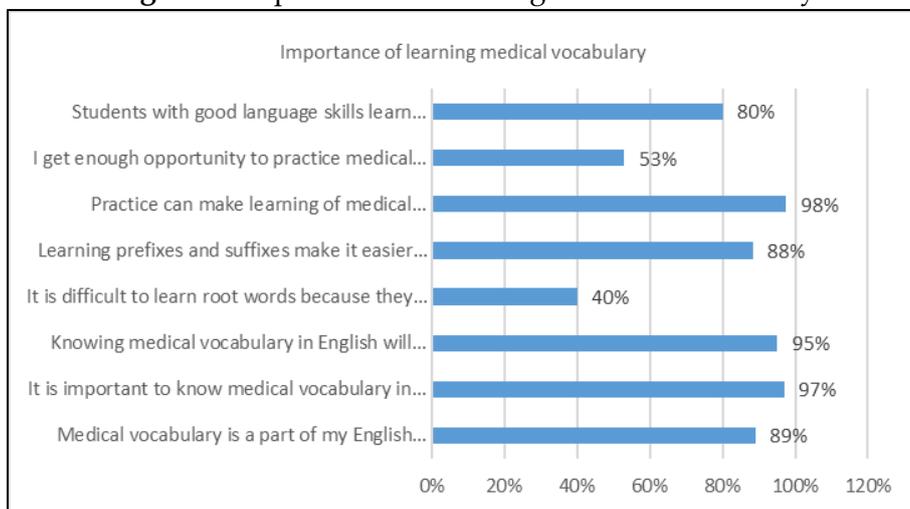
The University Central Library at RAKMHSU plays an important role in facilitating reading by providing an online portal of about 11,000 books for reading as confirmed by 87% of students.

Figure 3: Inter-relationship of Linguistic Skills



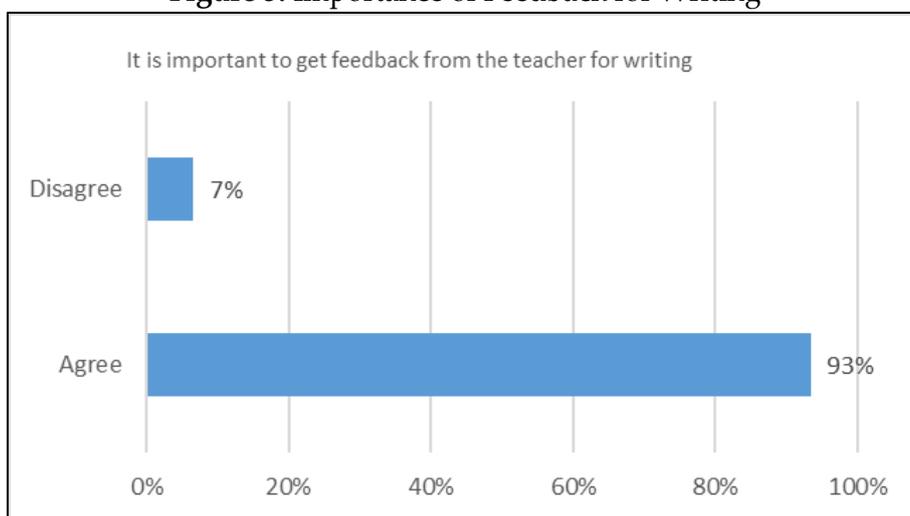
In Figure 4 below, participants were questioned about learning medical vocabulary and 97% agreed that it is important to know the medical vocabulary in English. However, there seems to be a gap that needs to be filled as 98% of participants believed that practice can make the learning of terms easy, but only 53% confessed that they get an opportunity to practice the terms in the hospital. Students with good language skills have an advantage as 80% agreed that they can learn medical vocabulary easily.

Figure 4: Importance of Learning Medical Vocabulary



It was observed earlier (Figure 2) that almost 60% of participants agreed that students coming from Arabic medium schools find it difficult to write correctly. This can be directly correlated to the findings in Figure 5 below where 93% of students would like to receive a feedback from the teacher on their writing assignments. This is an obvious response as about 40% of participants are from schools where the medium of instruction is Arabic. However, written feedback can cause frustration for teachers and students (Sheikh, 2021). In addition, it inhibits the learning potential of the given feedback (David Carless, 2020). However, sometimes written feedback gives students chances to concentrate on information from the given feedback and notice the gap between their written language and the targeted language by the teacher. However, due to COVID-19, the educational process has been affected and teachers and lecturers have been giving feedback online (Aras Bozkurt, 2020).

Figure 5: Importance of Feedback for Writing



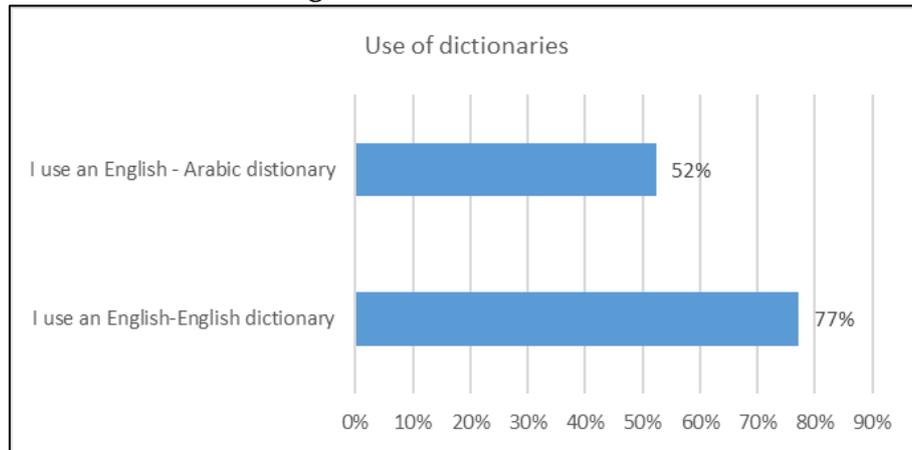
Al-Gharabally emphasizes the role of the teacher and says that the teacher should not let the L2 learner feel frustrated, but encourage them by making the writing task less threatening and suggests using the following symbols in the margins instead of correcting a mistake for them (Al-Gharabally, 2015):

Table 2: Use of Symbols for Feedback

| Symbol | Meaning | Symbol | Meaning |
|--------|-------------|--------|--------------|
| * | well done | P | punctuation |
| Wo | word order | O | organization |
| T | tense | Sp | spelling |
| Pr | preposition | V | vocabulary |

Linguistic issues lead to students using a dictionary. The fact that more than 50% of participants use an English to Arabic dictionary, as indicated in Figure 6, clearly supports the idea that they need support from L1 to understand L2.

Figure 6: Use of Dictionaries



6. Problems Faced by Medical Students

Understanding and learning medical terminology pose a lot of problems when the students have to study basic sciences and body systems at the same time which confuses the students. There are many common problems encountered by students.

6.1 Two or More Roots

The difficulty arises when the students come across terms that have two or more roots. Some of them are mentioned below:

Table 3: Two or More Roots

| Body part/organ | Root 1 | Root 2 | Root 3 | Root 4 |
|-----------------|--------------------------|--------------------------------|------------------------|-------------------------|
| breast | mamm/o (mammogram) | mast/o (mastectomy) | | |
| urinary bladder | vesic/o (vesicle) | cyst/ (cystitis) | | |
| blood vessel | angi/o (angiogram) | vas/o (vasoconstriction) | vascul/o (vascular) | |
| backbone | vertebr/o (vertebral) | spondyl/o (spondylitis) | spin/o (spinal) | |
| skin | cutane/o (cutaneous) | dermat/o (dermatitis) | derm/o (dermal) | theli/o (epithelial) |
| eye | ocul/o (ocular) | ophthalm/o (ophthalmoscope) | opt/o (optician) | optic/o (optical) |

6.2 Irregular Spellings and Pronunciation

Shehdeh & Hamadi (Shehdeh Fareh, 2021) also gives a list of terms with irregular spellings and pronunciation.

Table 4: Irregular Spellings

| Spelling | Pronunciation | Example |
|----------|---------------|----------|
| dys | dis | dyspnea |
| ph | f | pharmacy |
| x | z | xiphoid |
| ch | k | chronic |

6.3 Silent letters

Table 5: Silent Letters

| Term | Silent letter/s |
|-------------|-----------------|
| rhinoplasty | h |
| ptosis | p |
| gnathic | g |
| euthanasia | e |

7. Activities Suggested

The more meaningful tasks the learners are required to perform, and the deeper they analyze and process the language, the easier information is committed to long-term memory and remembered. It means that for words to be stored in long-term memory, they must be included in various kinds of exercises and tasks (Donesch-Jezo, 2014). Most of the activities suggested below encourage brainstorming which helps in better retention.

7.1 Medical Abbreviations

Medical abbreviations can be easily learned by creating an association or turning it into an interesting acronym. A well-known example is the mnemonic SOCRATES to remember the questions to be asked for presenting complaints in history taking:

- S- site of pain;
- O- onset of pain;
- C- character of pain;
- R- radiation of pain;
- A- alleviating factors;
- T- time;
- E- exacerbating factors;
- S- severity.

7.2 Filling in the Blanks

Filling in the blanks for homophones can be used as an exercise to ensure that the students know the correct spellings.

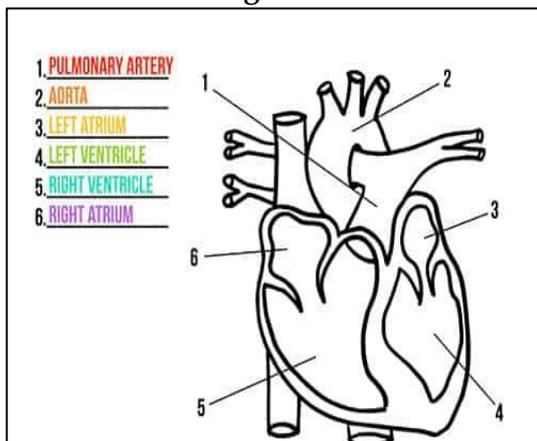
- 1) He developed a (callus/callous) after the fracture was (heeled/ healed)

- 2)(carotid/parotid) arteries are pair of blood vessels located on both sides of the neck and (carotid/parotid) glands are salivary glands in front of the ears.
- 3) (creatinine/creatinine) is a diagnostic indicator of kidney functions

7.3 Labeling the Diagram

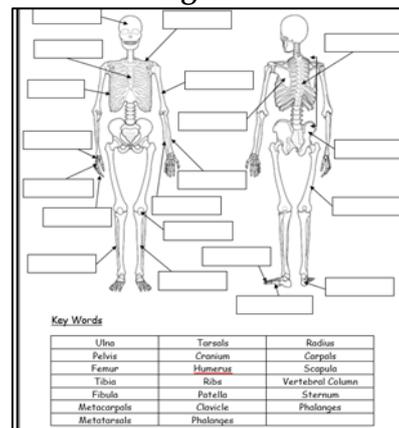
Labeling the diagram exercises help the students visualize the details of the organ and make it easier to remember the term as they are involved in labeling.

Figure 7:



Source: <https://superstarworksheets.com/science-worksheets/heart-worksheets/>

Figure 8:



Source: <https://www.tes.com/teaching-resource/label-a-blank-skeleton-with-key-words-11784349>

7.4 Matching the Root Words with Meanings Exercise

Matching the root words with meanings exercise starts brainstorming and group discussions which helps in better retention

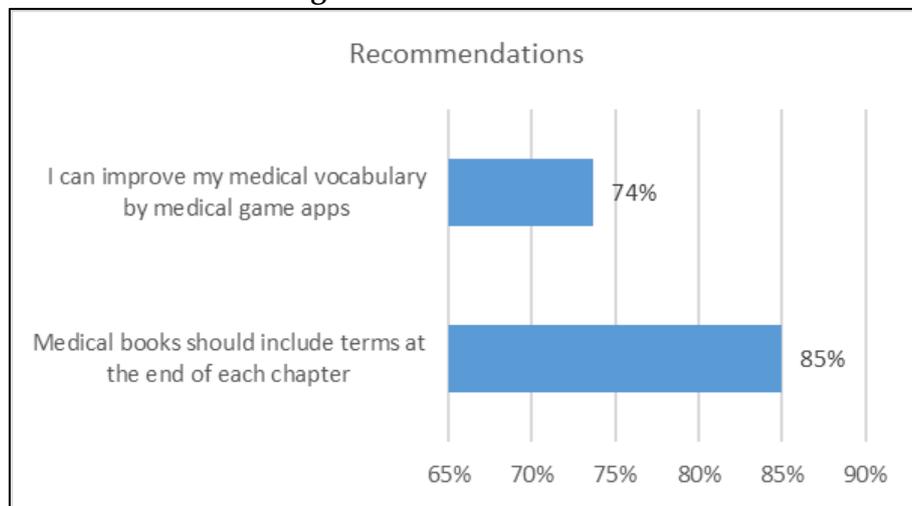
- 1) Nephro a. muscle;
- 2) Hem b. ear;
- 3) Oto c. blood.

Teaching specialist vocabulary in ESP classes in the ways suggested above seems to contradict what Hutchinson (Hutchinson, 1987) says that the teaching of technical vocabulary is not the responsibility of the ESP or EAP teacher, but the subject teacher. A slightly different view is held by Tony Dudley who claims that it is the duty of the ESP teacher to check that learners have understood technical vocabulary used as carrier content for an exercise (Tony Dudley Evans, 1998).

Other than the in-class activities discussed above, Šelmić has talked about Case Study Approach to teach ESP to medical students through which the students will be able to remember the specialist vocabulary in that particular situation (Šelmić, 2021). They will also be able to practice grammatically correct English and write notes. In this way integration of language in a professional setting is enabled (Malcolm MacDonald, 2000).

8. Recommendations

Figure 9: Recommendations



According to Figure 9, two strong recommendations emerged from the research. Firstly, learning medical terminology can become more interesting if interactive teaching methodology like medical apps is adopted as this generation relates more with technology and secondly medical books should contain the terminology at the end of each topic for reinforcement. Secondly, students should be given more opportunities to practice medical vocabulary in the hospital. Moreover, the core subject teachers will also have to customize their teaching habits by being more flexible and introducing the medical terminology at the beginning of each topic and giving time to the students to absorb it before delving deeper into the chapter. Since learning a foreign language for medical purposes implies not only understandable and grammatically correct speech but also sticking to certain social and professional conventions it demands continuous participation of an instructor whose role is a permanent assessment of the students' activities, explaining mistakes, and making them another useful tool of learning (Irina Markovina, 2021).

Most importantly, since a majority of students face linguistic issues, the authors would also like to bring the attention of authorities to the fact that schools should reconsider their approach and upgrade their standard of teaching English to make it easier for students to go through their higher education in English medium universities easily and smoothly.

9. Conclusion

To conclude, the study aimed at finding the problems faced by the students of the Medical, Dental, Pharmacy, and Nursing Colleges in learning medical terminology and suggest ways to overcome them. The authors concluded that students coming from Arabic medium schools have weak linguistic skills and need a lot of practice and

attention to cope with understanding and learning the basic medical terminology. ESP (including EMP) and EAP teachers are also NOT medical professionals and hence have to take the help of the core faculty to create innovative and creative teaching material for the Medical, Dental, Pharmacy, and Nursing Sciences students to develop their interest.

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Conflict of Interest Statement

The authors declare no conflicts of interest.

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