

Addressing First-year Medical student's difficulties in Understanding Medical terms in English.

معالجة الصعوبات التي يواجهها طلاب الطب في السنة الأولى في فهم المصطلحات الطبية باللغة الإنجليزية.

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Abstract:

This study seeks to pinpoint the main challenges that first-year medical students in Algeria face when it comes to learning English medical terms. It uses a mixed-methods approach including students' surveys, interviews with experts, and an in-depth examination at existing resources. The results led to three main suggestions: a bilingual glossary, an interactive mobile learning app, and workshop-based contextual teaching. Pilot testing these tools with a group of twenty students over three weeks showed positive results, such as better vocabulary retention, more confidence, and more interest in the material. The research concludes with real-world solutions for the EMP instructional context.

Keywords: Bilingual glossary, contextual instruction, English for medical purposes, interactive learning, medical students

الملخص

تبحث هذه الدراسة في التحديات الرئيسية التي يواجهها طلاب الطب الجزائريون في السنة الأولى لفهم المصطلحات الطبية الإنجليزية من خلال نهج متعدد الأساليب يتضمن استبيانات الطلاب ومقابلات الخبراء والتحليل النقدي للموارد الموجودة. بناءً على النتائج، تم اقتراح ثلاثة حلول رئيسية: معجم ثنائي اللغة، وتطبيق تعليمي متنقل تفاعلي، والتدريس السياقي القائم على ورش العمل. أظهر الاختبار التجريبي لهذه الأدوات مع مجموعة عينة مكونة من عشرين طالبًا على مدار ثلاثة أسابيع نتائج إيجابية، بما في ذلك تحسين الاحتفاظ بالمفردات وزيادة الثقة والمشاركة الأكبر. ويختتم التقرير بتوصيات عملية لدمج هذه الحلول في تعليم اللغة الإنجليزية للأغراض الطبية.

كلمات مفتاحية: معجم ثنائي اللغة، التعليم السياقي، اللغة الإنجليزية للأغراض الطبية، التعلم التفاعلي، طلاب الطب

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1. Introduction

English has become the dominant language of science, technology, and medicine. It is used in medical research articles, academic conferences, diagnostic tools, and international collaborations. However, in Algeria, where the primary language of instruction in medical faculties is French, and where students' educational background is mainly in Arabic or French, the role of English remains peripheral. Despite its global importance, English is introduced to students in a limited and often non-specialised way. Consequently, first-year medical students face severe difficulties in understanding medical terms that appear in textbooks, scientific articles, and multimedia materials.

Medical terminology is especially challenging due to its unique structure, heavy reliance on Greek and Latin roots, and complex pronunciation. Moreover, these terms are often abstract, unfamiliar, and difficult to memorise, especially when taught without context or visual support. For Algerian students who may not have received adequate English instruction at the secondary level, the gap between general English and medical English is vast.

This study aims to investigate the specific factors that make medical English difficult for first-year medical students in Algeria and to provide practical, tested solutions based on student needs and preferences. The research not only focuses on identifying the linguistic and educational barriers but also on designing and evaluating tools that can facilitate learning and improve comprehension.

By identifying the root causes of this issue and implementing solutions grounded in both theory and practice, this research aims to contribute to the improvement of English for Medical Purposes (EMP) teaching in Algeria. It also provides a model of how content-based learning can be used to overcome real-world educational problems. The final recommendations could serve as a guide for curriculum designers, EMP instructors, and education policymakers.

First-year medical students in Algeria face significant obstacles when trying to understand medical terminology in English. These difficulties stem from multiple sources. First, students often have limited exposure to English during their earlier education, where Arabic and French dominate the curriculum. Second, medical English contains highly specialised vocabulary derived from Greek and Latin, making it difficult for learners to decode, pronounce, and remember. Third, the current teaching methods in many Algerian medical schools either do not include English or provide insufficient focus on subject-specific vocabulary. As a result, students struggle with comprehension in lectures, textbooks, online resources, and even exams that feature English terms.

This vocabulary gap not only affects academic performance but also limits students' ability to engage with international medical literature, participate in exchanges, and later practice medicine in global or multilingual environments. This issue is urgent and must be addressed through a targeted, learner-centred approach.

We thus attempt to answer the following research question

How can first-year medical students in Algeria improve their understanding of English medical terminology effectively?

2. Methodology

This research employed a mixed-methods approach to address the main challenges faced by Algerian students in the English for medical purposes context. The researcher first used surveys and interviews to figure out what the most important issues were by learning about the requirements of students and the perspectives of teachers. Second, new learning tools were developed to fix the problems that were found. Finally, these tools were put through a pilot test and reviewed to see how well they worked and where they may be better.

Fifty first-year medical students from the University of Oran 1, Ahmed Ben Bella, Faculty of Medicine, took part in this research. The study also included five specialists: three EMP teachers and two medical professors. We used several tools to gather data, such as a Google Forms survey sent to the students to find out their prior exposure to medical English and their preferred learning methods. Semi-structured interviews with teachers gave us a deeper understanding of their teaching strategies and observations of students' deficiencies. We also did a critical analysis of the existing EMP resources to evaluate their relevance and accessibility.

Several challenges were encountered throughout the study process. Some students were reluctant to complete the survey due to their anxiety about their English proficiency. It was hard to schedule interviews with faculty members since they were so preoccupied. Another challenge was the limited accessibility of the instructional tools in languages other than English. Also, the study's mobile app prototype was made using free tools, which limited its functionality and the quality of its overall design.

3. Literature review

3.1 English for Medical Use

English for Medical Purposes is a type of English for Specific Purposes (ESP) that is only for medical students and professionals. Hutchinson and Waters (1987) say that ESP is meant to meet the unique needs of each learner. When it comes to EMP, this means knowing medical terms, reading scientific texts, writing case reports, and talking to people in clinical settings.

The vocabulary, structure, and context of use for EMP are different from those of General English. Students need to learn more than just medical vocabulary. They also need to be able to understand clinical talk, interactions with patients, and academic research. Basturkmen (2010) says that EMP courses should be tailored to the needs of the students and include both language and medical knowledge so that the material is valuable and relevant to them.

3.2 Medical Terms as a Learning Challenge

One of the hardest things for students who are just starting to study medicine is learning medical terms. Many of these words come from Latin and Greek, which makes them long and hard to understand. The word "gastroenterology" has three parts: "gastro-" (stomach), "entero-" (intestine), and "-logy" (study). These kinds of words can be scary, mainly when they are used in dense academic writing. Many students do not know how to break down these terms. Chen and Ge (2007) found that students who have not learnt how to form words or Latin-Greek roots often do not understand basic ideas. Using short forms and acronyms in medical English (like MRI, COPD, and BP) makes things even harder to understand, especially for students who are learning English as a second language.

3.3 EMP in the Algerian Setting

Arabic and French are the most important languages in Algeria's schools. English is often taught later and in a general way. French is usually the language of instruction in medicine, and English is not always

a part of the curriculum. Benrabah (2007) says that the lack of emphasis on English in Algerian schools makes it harder for students to learn about the world and find academic resources.

Even though English is becoming more and more important in international medicine, EMP is still not well developed in Algerian universities. Students do not often get to read real English-language materials or learn how to read and understand technical texts. Because of this, there is a gap between what the medical field needs and what students learn in language classes.

3.4 The Use of Technology and Glossaries in EMP Learning

More and more, people are using digital tools and bilingual materials to learn languages, especially in ESP settings. Bilingual glossaries are a good way to help students learn and remember technical words quickly (Nation, 2001). These glossaries are easier to use because they have visual aids, phonetic transcriptions, and example sentences.

Flashcards, quizzes, and audio pronunciation are some of the features that mobile apps can have to make learning more interactive and personal. According to a study by Kukulska-Hulme (2012), mobile-assisted language learning (MALL) helps students remember new words and stay motivated to learn. These tools can be invaluable in EMP, where the vocabulary is dense and repetitive.

3.5 Teaching Strategies for Context and Communication

Experts all agree that memorising words is not enough to learn medical English. Learning in context, where terms are taught through case studies, real-life situations, and problem-solving, helps people understand better. Dudley-Evans and St. John (1998) say that ESP instruction should reflect how language is used in the real world. This means that medical students need to learn how to use medical terms in context, like when they talk to patients or write clinical notes.

Workshops and classes that are based on discussion help the students connect what they know in theory with what they can do in real life. These kinds of activities also help them feel more confident and improve their communication skills, which are very important in medical settings.

4. Data Analysis

To understand the difficulties faced by first-year medical students in comprehending English medical terminology, data were collected through a survey distributed to fifty first-year medical students. Semi-structured interviews were conducted with three English language instructors and two medical professors. The researcher also reviewed and analysed existing EMP materials such as glossaries, textbooks, and learning apps.

4.1 Survey Results (Quantitative Data)

Table 1. Students' Confidence vs Exposure

Item	Percentage
Encounter medical terminology often or very often	84%
Less confident and do not understand the medical terminology	68%

The results show that there is a big difference between students who are often exposed to English medical terms and those who do not feel confident in their ability to understand them. A shocking 84% of students say they come across these terms often or very often, showing how common they are in academic materials and conversations. However, even though many students see them, they do not understand them,

as 68% say they do not feel confident in their ability to do so. This suggests that the current way of teaching may have a flaw: students hear the language but do not have the right tools or strategies to learn it.

Table 2. Main Reasons for Students' Low Confidence

Reason	Percentage
Complex word structure (morphology, affixation)	70%
Lack of prior exposure (English and medical vocabulary)	60%

More research into the problems students are having helps us understand why they do not have as much confidence. 70% of the students say that "complex word structure" is a significant problem, which means that they are having trouble with the morphological parts of medical terms, like prefixes, suffixes, and root words. Also, 60% of the students say they "lack prior exposure," which means that their basic knowledge of English and medical vocabulary is not enough to meet the demands of their current studies. These problems all make it hard for students to learn because the language is hard to understand, and they do not have a strong foundation in it.

Table 3. Preferred Learning Support

Learning support	Percentage
Visual aids	75%
Mobile app with quizzes	65%
Bilingual resources	50%

Teachers who want to deal with these problems can easily see what the students want in terms of how they learn. The fact that 75% of the respondents prefer visual aids like diagrams and flashcards shows that there is a need for more interesting and multi-sensory learning materials. Considering that 65% of the students like mobile apps with quizzes, shows that they want interactive, self-paced learning tools that let them practise and reinforce what they learn. Because 50% are interested in bilingual resources reveals that there is a need for materials that can help them move from their native language to English, making it easier for them to learn complex medical terms. By using these preferred methods, teachers can come up with better ways to teach that meet the needs of their students and help them get through the problems they are having. This will boost their confidence and help them understand English medical terms better.

Affective and Social Effect

Other observations show how the students' problems with English medical terminology have a significant effect on their mental and social health. When students say they feel "lost" when reading textbooks, it means that the problem is more than just vocabulary. They cannot follow the logical flow of arguments or understand complicated ideas presented in English. This not only makes it harder for them to learn on their own, but it also makes them feel alone and frustrated. The embarrassment that the students feel when they ask for clarification during lectures only makes this problem worse. This shows that they are afraid of being judged or seen as less capable by their peers and teachers, which stops them from filling in the gaps in their knowledge in real time. Because of this, these students may fall even further behind because their confusion is not dealt with, which leads to a cycle of misunderstanding and low confidence.

Since it is hard to say some words, which makes it challenging to work in groups, the findings identify an important but often ignored part of learning a language. In a professional setting, people not only read

medical terms but also talk about them. When the students have trouble pronouncing words, it can make it harder for them to communicate, which can make them less likely to participate and feel left out of group activities. This not only affects how well they do in academic settings, but it also affects how well they learn important communication skills that they will need for their future jobs. When the students feel lost, are too embarrassed to ask questions, and have trouble with pronunciation, it makes learning hard, which can hurt their mental health and stop them from growing academically and professionally. To solve these problems, we need to take a whole-person approach that not only works on improving language skills but also makes sure that students feel safe and comfortable making mistakes and asking for help.

4.2 Qualitative Data

4.2.1 The Interview

According to EMP teachers from different Algerian universities, the interview results show that students have much trouble remembering vocabulary. These teachers noticed a common problem: students often memorise words without understanding their roots or the larger contexts in which they are used. This surface way of learning vocabulary makes it harder to remember it for a long time and understand it deeply. This shows that students are not approaching specialised terms in the right way.

There was a clear difference in how medical professors and language teachers taught. Medical professors often use medical terms in their lectures without fully explaining them, assuming that their students already know basic English. This method works well for getting information across, but it could make it harder for students to understand new words. Language teachers, on the other hand, want vocabulary lessons to be clearer and structured. They stress the need for targeted strategies to help students learn and remember specialised terms.

Several helpful ideas for how to help the students learn new words were based on these observations. To help people remember new words better, interviewees suggested using case studies and visual aids, like pictures, when teaching them. The goal of this method is to give students real-world situations and visual aids that can help them understand and remember better. It was also pointed out that bilingual glossaries are important tools for helping students understand difficult medical terms.

The interviewees also stressed how important it is to go beyond just memorising medical terms by using them in real-life situations. Some ideas were to use these words in activities and problems that are at the sentence level. This would encourage students to use their vocabulary knowledge in real-life situations, which would help them understand the words better and be able to use them correctly and appropriately in different situations. The goal of these suggested changes is to close the gap between passively memorising vocabulary and actively teaching it in context.

The interview data shows that there is a clear need for better ways to teach medical terms. "Use case studies and images when introducing terms" is the first set of suggestions, and they directly address common problems with learning. A lot of the time, medical terms are abstract and hard to understand without real-life examples. Case studies create a real-world context so that the students can see how terms are used in clinical settings. Images can also help with memorisation and understanding, especially when it comes to anatomical or procedural terms, by providing a solid background. This method goes beyond just memorising words; it helps people understand what they mean and why they are important.

The second and third suggestions make it even easier to access and use. Include bilingual glossaries and pronunciation support" is very important for students from different backgrounds, especially those who may not speak English as their first language. Bilingual glossaries can help student doctors who speak

different languages understand each other, and pronunciation support is necessary for clear and confident verbal communication in a medical setting. Finally, "Incorporate medical terms into sentence-level activities and problem-solving tasks" changes the focus from learning new words to using language in real life. When students use terms in sentences and problems, they have to understand not only the definition but also the grammatical context and the subtle meaning in a clinical setting. This helps students think critically and get ready to use these words correctly in their work.

4.2.2 Analysis of the resources

a. Resource Review

The study of the resources that are available shows that there is a big gap in meeting the needs of Algerian students who are learning medical English. The primary sources looked at, like the Oxford Concise Medical Dictionary and MedlinePlus, are mainly in English and use a high level of language. This is a big problem for beginners, especially those whose basic English skills may not be strong enough to understand complicated medical terms that are not simplified. These resources are written in a way that assumes a level of language skill that many Algerian students may not have, which makes it harder for them to learn and remember new words.

A significant finding that came out of the resource analysis is that there are not many bilingual glossaries that are easy to find. When they do exist, they are often only available in print, which makes them harder to access and carry around in a world where more and more people are learning online. Students who would benefit significantly from immediate translations and cross-referencing between English and their native languages (Arabic and French) have a big problem because there is not enough digital bilingual support. Also, the study shows that there are very few digital tools that are made explicitly for Algerian or Arabic/French-speaking students. Because of this, many apps and online platforms that are already available may be helpful for global learners, but they do not include examples or contexts that are relevant to their culture or location, which could significantly improve understanding and engagement for this group.

The problems also affect how existing mobile apps, like "Medical Terminology A-Z," look and work. These apps are easy to use for learning, but they do not have important features like examples that are relevant to the Algerian context and, more importantly, phonetic pronunciation aids. Medical terms are known for being hard to pronounce, and if students do not get the right help, they might start to say things wrong, which will make it even harder for them to communicate. The lack of these personalised features shows that there is a need for resources that are not only easy to understand in terms of language level, but also culturally and linguistically appropriate for the learners' background.

In short, looking at both the interview data and the availability of resources together gives a clear picture of the problems and challenges that Algerian students face when learning medical English. Students face fundamental problems like not knowing the roots of words, not having a good general English vocabulary, and having much trouble with pronunciation. The current state of learning tools makes these problems worse because they do not provide the help that is needed. Both students and teachers prefer learning methods that are interactive, bilingual, and full of pictures. This shows how important it is to quickly create and use specialised tools like complete digital bilingual glossaries, mobile apps that are specific to a region, and lessons that are tailored to the learner's needs in order to effectively overcome the many barriers to learning and help people learn medical English.

5. Discussion

Based on the analysis of the available data, it is clear that there is a significant lack of tools that are designed explicitly for Algerian students who are learning medical English. The resources looked at, such as the Oxford Concise Medical Dictionary and the online platform MedlinePlus, are primarily in one language and use much complicated language. This is a big problem for beginner students who may not have a firm grasp of basic English, which makes it hard for them to understand and remember complicated, technical medical terms. These resources assume that the target student population has a certain level of language proficiency, which is often not the case, making it harder for them to learn.

Another significant finding is that there are not many bilingual glossaries that are easy to find. When these kinds of resources do exist, they are often only available in print, which makes them harder to access and move around in a world where digital learning is becoming more and more common. Students who would benefit significantly from being able to translate and cross-reference between English and their native languages, Arabic and French, right away, are having a hard time because there is not enough strong digital bilingual support. The study also shows that there are not many digital tools made just for Algerian or Arabic/French-speaking learners. This means that students have to rely on generic global resources that do not have examples that are relevant to their culture or situation, which are important for getting students more involved and helping them understand.

Mobile apps, like "Medical Terminology A-Z," also have the same problems as other learning aids. These apps are easy to use for learning, but they are missing some important features, such as examples that are specific to the context and, most importantly, phonetic pronunciation aids. Because medical terms are hard to say, this lack of help can make people stick to wrong ways of saying them, which makes it much harder to communicate effectively in a clinical setting. The lack of these personalised features makes it clear that there is a need for educational materials that are not only appropriate for the learner's language level, but also for their culture and pronunciation.

Combining information from interviews and resource analysis gives a complete picture of the learning problems and challenges that Algerian medical English students face. Students' feedback always points out significant problems, such as not knowing enough about word roots, having a weak general English vocabulary, and having much trouble with pronunciation. These problems are made worse by the current state of learning tools, which do not give the proper support and scaffolding to help people get over these specific problems. These problems coming together show that there is a systemic gap between what students need and the available educational resources.

In the end, the results show that both students and teachers strongly prefer learning methods that are interactive, bilingual, and full of pictures. This shared preference makes it clear that specialised tools need to be developed and put into use to deal with the problems that have been found. There is an urgent need for complete digital bilingual glossaries, mobile apps that are specific to certain regions, and lessons that are customised and interactive. By actively making and using these kinds of resources, it is possible to significantly reduce the many barriers to learning and make it much easier for this group of students to learn medical English.

6. Recommendations

It is essential for universities and faculty leaders to officially add a required English for Medical Purposes (EMP) module to the first year of medical school. This proactive step makes sure that students have the basic language skills they need from the start of their academic journey. At the same time, it is important to set aside money and hire qualified people to work on the development or use of specialised

EMP resources. This kind of investment shows that the institution is committed to helping students learn languages, which is important for doing well in school and the future in a globalised medical field.

Teachers of EMP should use teaching methods that are specifically designed to help first-year medical students deal with the problems they face. Using bilingual glossaries and phonetic aids innovatively can help a lot with student anxiety about learning new words. Also, using mobile apps and other online learning platforms in the classroom will make students more interested and give them more options for how to learn. A strong EMP curriculum should also put a lot of emphasis on contextual learning methods, such as case studies, real medical videos, role-playing scenarios, and simulations. These methods help students learn and use medical terms in a more meaningful way, going beyond just memorising them to help them understand.

Developers and publishers of educational apps play a key role in making EMP tools that are specific to certain groups. We need to make apps that are specifically designed for Arabic- and French-speaking students. These apps should include pronunciation tools and examples that are relevant to their cultures to help them understand and remember what they learn. Most importantly, these digital resources must be available offline so that students who may not always have access to the internet can still use them. This will make sure that everyone has equal access to learning materials. These kinds of customised and easy-to-use tools can help close the gap between traditional ways of learning and the interactive, on-demand resources that today's students prefer.

Finally, policymakers and curriculum developers should make sure that all Algerian medical universities use the same EMP teaching methods. This standardisation will make sure that the quality and results of education are the same all over the country. Also, building relationships with international institutions can help teachers get valuable training and encourage the sharing of best practices and new resources. It is also important to encourage and pay for regular teacher training workshops to give language teachers the specific teaching skills they need to effectively teach EMP, which will improve the overall quality of medical English education in Algeria.

7. Conclusion

This paper studies one of the problems that first-year medical students in Algeria have: learning and understanding English medical terms. It investigates the characteristics, causes, and possible solutions for this teaching problem using a structured learning approach. The study implemented a multi-modal approach that included surveys, semi-structured interviews, and in-depth reviews of current educational materials.

The empirical results show that most students are not ready for medical English. This is mainly because they have not had enough exposure to it before, the specialised medical vocabulary is inherently tricky, and there are not enough appropriate teaching tools. Furthermore, traditional pedagogical approaches, characterised by the isolated presentation of vocabulary disconnected from practical application, were found to be largely ineffective for novice learners.

To solve this problem, the researcher endeavoured to create and test three learner-centred teaching tools: a bilingual medical glossary, an interactive mobile app, and workshop sessions that were relevant to the learners' needs. These resources were carefully made to match what the students require and what experts believe is best for them. The main goal was to make medical English instruction more accessible, interactive, and valuable in real-life settings.

The pilot testing phase showed that the students admired the tools that were suggested. Participants said they felt more confident using medical terms in conversation, were better at remembering vocabulary,

and liked the bilingual materials. At the same time, the instructors who took part showed a lot of interest in the possibility of incorporating these new solutions into formal English for Medical Purposes (EMP) curricula.

In conclusion, it is both necessary and possible to help first-year Algerian medical students develop a strong understanding of medical English terms. Using bilingual, context-rich, and technology-assisted teaching methods has a lot of potential to improve students' language skills and grades. In addition, these kinds of interventions also get future medical professionals ready to work in a medical field that is becoming more globalised.

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