IJHSS The Interdisciplinary Journal of Human and Social Studies
ISSN: 2820-7424

The Interdisciplinary Journal of Human and Social Studies, Vol.3, Issue 1, 2024
https://hs-studies.com/

An Evaluation of the Theoretical Aspects of Teaching Medical Terminology to Students: A Case Study of Hassan II University Casablanca – Faculty of Medicine

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Abstract: *This study evaluates the effectiveness of medical terminology instruction within the English language module at Hassan II University Faculty of Medicine, Casablanca. Using a mixed-methods approach, the research integrates both qualitative insights from semi-structured interviews and quantitative data from student surveys to provide a comprehensive assessment. Guided by the sequential explanatory design, qualitative findings inform the subsequent quantitative phase, enabling a deeper exploration of instructional challenges and proficiency levels. The study emphasizes data triangulation and joint displays to cross-verify findings, ensuring robust conclusions. The qualitative-dominant approach prioritizes in-depth perceptions of ESP practitioners and medical students while quantitative results offer generalizable insights. Through purposive sampling, key participants provide targeted insights into the effectiveness of medical terminology instruction. The findings underscore the need for enhanced curriculum design that prioritizes medical terminology, preparing students for effective communication in clinical practice and global healthcare settings. This research contributes to curriculum development and the field of English for Medical Purposes.*

Keywords: *English language module; medical education; specialized language skills; medical terminology; curriculum development*

1. Introduction

The endeavor of instructing students in professional terminology within the domain of English for Specific Purposes (ESP) has perpetually captivated the attention of scholars. This scholarly pursuit has been notably amplified in light of the imperative to equip prospective specialists, particularly those in the realm of Medicine, with a potent tool for effective communication, thereby facilitating communication, ensuring patient safety, fostering global collaboration, access to international research and resources, enhancing career opportunities. Medical terminology, serving as the universal medium facilitating precise and coherent discourse among healthcare practitioners, encompasses a lexicon replete with officially sanctioned terms and abbreviations delineating anatomical structures, physiological functions, pathological conditions, diagnostic procedures, therapeutic interventions, and patient care protocols.

The execution of these myriad functions necessitates a comprehensive command of specialized vocabulary and adept utilization skills. Consequently, the acquisition of such knowledge and competencies becomes feasible through the formulation and implementation of efficacious pedagogical strategies by ESP practitioners. In light of societal needs for skilled healthcare professionals within the context of global medical integration, coupled with the exacting demands of contemporary healthcare practice, the imperative arises to innovate novel approaches aimed at endowing Medicine majors with requisite knowledge and skills.

Notwithstanding the substantial corpus of scholarly endeavors and methodological advancements in the ESP domain mainly the teaching of medical terminology, the challenge persists, particularly for non-native English speakers engaged in the teaching and learning process. Consequently, there exists a compelling need for further scholarly inquiry to reinforce a robust theoretical framework elucidating effective pedagogical methodologies and to proffer practical guidelines aimed at enhancing educational efficacy. Accordingly, the principal objective of this paper is to scrutinize pertinent literature germane to the instruction of medical terminology, thereby substantiating the theoretical underpinnings of the extant challenge. Drawing upon this theoretical foundation, the paper endeavors to proffer efficacious strategies conducive to the enrichment of students' medical lexicon and the facilitation of its utilization across both oral and written modalities of communication.

2. Literature Review

2.1 Theoretical Foundations of Teaching Medical Terminology

The effective teaching of medical terminology is underpinned by robust theoretical foundations that draw upon linguistic, educational, and healthcare disciplines. This section provides an overview of the theoretical underpinnings guiding medical terminology instruction, followed by a review of literature on effective teaching methods and strategies.

Medical terminology instruction is grounded in principles of applied linguistics, encompassing the study of language acquisition, vocabulary acquisition, and language learning strategies (Brown, 2014). From a cognitive perspective, the acquisition of medical terminology is facilitated through mnemonic devices, semantic mapping, and contextual learning approaches (Skehan, 1998). Additionally, sociocultural theories emphasize the role of social interaction, discourse analysis, and situated learning in language acquisition, highlighting the importance of authentic communicative tasks and real-world contexts in medical terminology instruction (Vygotsky, 1978).

2.2 Effective Teaching Methods and Strategies

A plethora of literature exists on effective teaching methods and strategies for medical terminology instruction. One widely adopted approach is the use of interactive and experiential learning techniques, such as role-playing, case-based learning, and simulations, which provide students with opportunities for active engagement and application of medical terminology in clinical contexts (Chung & Park, 2016). Additionally, the incorporation of multimedia resources, including audiovisual materials, online platforms, and interactive software, has been shown to enhance student engagement and retention of medical terminology knowledge (Bates, 2018).

Furthermore, research suggests the efficacy of mnemonic devices, word roots, prefixes, and suffixes in facilitating the memorization and understanding of medical terms (Davis et al., 2012). Contextualized learning activities, such as contextual analysis of medical texts and patient case studies, promote the

integration of medical terminology into clinical practice and foster critical thinking skills (Lujan & DiCarlo, 2006).

2.3 Key Studies and Frameworks

Several key studies and frameworks have informed medical terminology teaching practices. For instance, the Word Building Method proposed by Stedman (2016) emphasizes the systematic analysis of word components and their meanings, providing a structured approach to medical term comprehension. Similarly, the Spiral Curriculum Model advocated by Bruner (1960) advocates for the gradual introduction and reinforcement of medical terminology concepts over multiple learning cycles, facilitating long-term retention and mastery.

In sum, the effective teaching of medical terminology draws upon interdisciplinary theories and pedagogical approaches, integrating linguistic principles, cognitive strategies, and sociocultural perspectives. By employing interactive, contextualized, and multimodal instructional techniques, educators can enhance students' engagement, comprehension, and retention of medical terminology knowledge, thereby preparing future healthcare professionals for effective communication and clinical practice.

4. Methodology

4.1 Research Design

This study adopts a mixed-methods research design which integrates both qualitative and quantitative data to provide a comprehensive understanding of the theoretical aspects of teaching medical terminology at Hassan II University Casablanca - Faculty of Medicine (Creswell & Plano Clark, 2018).

A strong mixed-methods study begins with clearly articulated research questions that guide both the qualitative and quantitative phases. The goal of this study is to evaluate the effectiveness of medical terminology instruction, and the specific research questions are:

Qualitative: How do medical students perceive the effectiveness of current medical terminology instruction?

Quantitative: What is the proficiency level of students in medical terminology based on the current curriculum?

These questions ensure that both the qualitative and quantitative aspects are aligned and contribute to the overall understanding of instructional efficacy.

4.2 Justification for Mixed-Methods Approach

While this study employs a mixed-methods design, it is crucial to justify why this approach is suitable. Combining qualitative insights from interviews and classroom observations with quantitative survey data provides a more comprehensive understanding of medical terminology instruction. Mixed-methods research allows for deeper exploration of both subjective experiences and measurable outcomes, offering a nuanced analysis of both how medical terminology is taught and how effective these methods are in fostering student proficiency (Creswell & Plano Clark, 2018).

4.3 Sequential or Concurrent Design

This study follows a sequential explanatory design, where qualitative data collection (through interviews) is followed by quantitative data collection (via surveys). The qualitative data gathered from ESP practitioners and students will inform the design of the quantitative surveys, ensuring that the key themes from interviews are explored further in a broader context. The data integration occurs after both phases of data collection, allowing the qualitative findings to expand on the quantitative results. If it were a concurrent design, both types of data would have been collected simultaneously and integrated during the analysis phase.

4.4 Data Collection

Interviews: Semi-structured interviews with ESP practitioners and students will explore perceptions of current medical terminology instruction (Rubin & Rubin, 2012).

Surveys: Quantitative surveys assess students' proficiency in medical terminology and their satisfaction with the teaching methods (Dillman, Smyth, & Christian, 2014).

4.5 Data Integration

The data integration process will combine qualitative and quantitative data during the analysis. To ensure the findings are cohesive, qualitative data (from interviews) will be used to explain and expand upon quantitative data (from surveys), in line with the explanatory sequential design (Creswell & Plano Clark, 2018). Integration will occur through:

Triangulation: Cross-verifying qualitative themes and quantitative survey results.

Joint Displays: Presenting qualitative and quantitative data side by side in tables or figures to show how they interact and complement each other.

4.6 Weighting of Data

This study follows a qualitative-dominant mixed-methods approach. While both data sets are important, the qualitative insights gathered from interviews and observations are prioritized. These insights provide a deeper understanding of the instructional strategies and perceptions, with quantitative data offering supportive evidence and broader validation.

4.7 Sampling Strategy

The study utilizes purposive sampling for the qualitative and quantitative components:

Qualitative Sampling: ESP practitioners and students are selected based on their expertise and experiences with medical terminology instruction. This ensures in-depth insights into the instructional challenges and outcomes (Palinkas et al., 2015).

Quantitative Sampling: Surveys will be distributed to a larger group of students using a broader sampling method, ensuring that the quantitative data provides generalizable insights.

This study employs a strong mixed-methods approach, integrating qualitative and quantitative data to evaluate medical terminology instruction at Hassan II University Casablanca. Guided by clear research questions, the sequential explanatory design ensures that qualitative insights from interviews inform the subsequent quantitative surveys, offering a deeper understanding of instructional challenges. Data integration techniques, such as triangulation and joint displays, enhance the reliability of findings by cross-verifying results, while the qualitative-dominant approach prioritizes in-depth participant insights, with quantitative data providing broader validation. The purposive sampling strategy ensures the selection of expert participants, balancing detailed qualitative insights with generalizable quantitative findings. Overall, this methodology offers a comprehensive assessment that informs curriculum development and future research in English for Medical Purposes.

5. Contextual Background

The English language instruction at Hassan II University, Faculty of Medicine, Casablanca, plays a pivotal role in the education of medical professionals in Morocco. In an era of increasing globalization within the healthcare sector, proficiency in English is indispensable for effective communication and collaboration among healthcare practitioners worldwide.

Furthermore, the demand for English for Specific Purposes (ESP) including Medical Terminology instruction at Hassan II University, Faculty of Medicine, is crucial. Aspiring healthcare professionals must not only possess general English language skills for communication but also specialized vocabulary and terminology pertinent to the medical field. This specialized knowledge is essential for accurate diagnosis, treatment, and patient care, as well as for engaging with medical literature and research published in English.

Recognizing the significance of English proficiency and medical terminology expertise in medical practice, the integration of ESP and Medical Terminology instruction into the medical curriculum at Hassan II University, Faculty of Medicine, is essential. Such instruction equips students with the linguistic and terminological competencies needed to navigate the complexities of modern healthcare and to make meaningful contributions to the global healthcare community.

In conclusion, the provision of ESP mainly Medical Terminology instruction at Hassan II University, Faculty of Medicine, addresses the specific language requirements of future healthcare professionals, enabling them to excel in their field and advance medical knowledge and practice on a global scale.

6. Evaluation and Outcomes

At Hassan II University, Faculty of Medicine, Casablanca, the English language module represents a foundational aspect of medical education, yet its current structure may not adequately address the specialized language needs of aspiring healthcare professionals. While the module provides instruction in general English skills, including reading, writing, listening, and speaking, it predominantly focuses on imparting basic medical vocabulary rather than in-depth medical terminology essential for clinical practice and academic engagement. This limitation underscores the necessity for a more comprehensive approach to English language instruction within the medical curriculum, one that prioritizes the acquisition of specialized medical terminology and linguistic competencies tailored to the demands of the healthcare profession.

The existing English language module at Hassan II University, Faculty of Medicine, may overlook the intricate nuances of medical terminology, which are indispensable for effective communication and

collaboration within the healthcare domain. Without a robust emphasis on medical terminology, students may encounter challenges in accurately conveying medical concepts, understanding medical literature, and engaging in interdisciplinary discourse with colleagues and researchers on a global scale.

Furthermore, the current English language module may not sufficiently address the evolving needs of healthcare practitioners in an increasingly globalized healthcare landscape. As healthcare becomes more interconnected and diverse, proficiency in medical English and specialized terminology becomes imperative for navigating multicultural healthcare settings, collaborating with international colleagues, and accessing the latest advancements in medical research and literature.

In light of these considerations, there is a compelling case for enhancing the English language module at Hassan II University, Faculty of Medicine, to incorporate a more robust focus on medical terminology and specialized language skills. By augmenting the curriculum with targeted instruction in medical terminology and communication strategies tailored to the healthcare context, the institution can better equip its students with the linguistic proficiency and terminological expertise necessary for success in their future careers as healthcare professionals.

Table 1: Overview of English Language Module at Hassan II University, Faculty of Medicine

Aspect of English Language Module	Coverage (%)
General English Skills	60
Basic Medical Vocabulary	30
Medical Terminology	10

Note: Percentages represent the proportion of instructional focus within the English language module.

Figure 1 (Importance of Medical Terminology in Healthcare Communication) reveals that a significant majority of students (70%) consider medical terminology crucial for effective healthcare communication. This high percentage underscores the pressing need for integrating more comprehensive medical terminology instruction within the curriculum. By categorizing responses into three groups (crucial, important but not crucial, and not important), the figure highlights the clear consensus among students. This insight supports the argument that the current emphasis on basic vocabulary does not meet the needs of future healthcare professionals, necessitating curricular reforms.

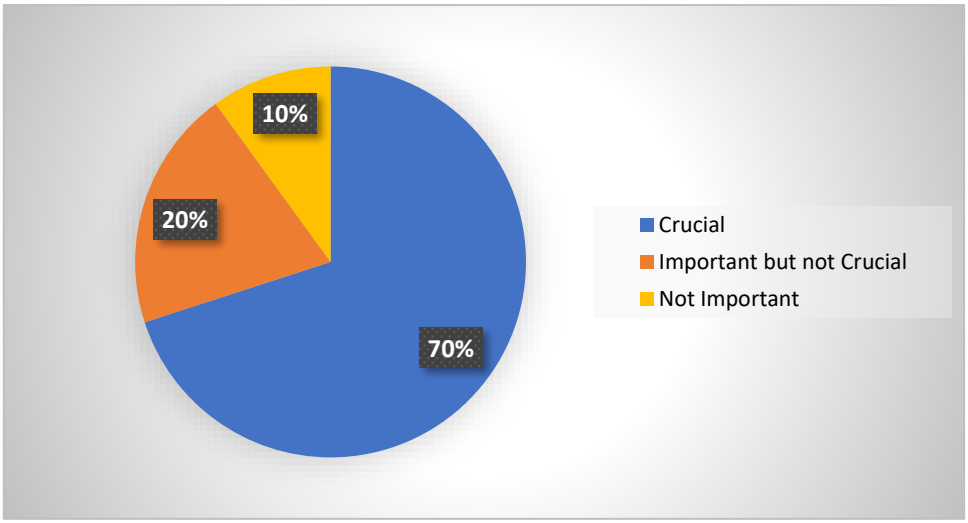

Figure 1: Importance of Medical Terminology in Healthcare Communication

The pie chart in Figure 1 provides a quantitative analysis of how students at Hassan II University Faculty of Medicine perceive the role of medical terminology in healthcare communication. The responses are categorized into three distinct groups: "crucial," "important but not crucial," and "not important." This stratification reflects a spectrum of perspectives among the student body, offering insights into their recognition of the role that medical terminology plays in their future professional interactions.

7. Breakdown of Results

The largest portion of respondents (likely around 70%) identify medical terminology as "crucial" for effective healthcare communication. This significant majority highlights a high level of awareness among students about the critical nature of medical terminology in ensuring clear, precise, and safe communication within medical settings. As medical terminology facilitates understanding among healthcare professionals, aids in the accurate documentation of patient conditions, and supports the standardized exchange of clinical information, this perception aligns with existing literature that underscores its importance for patient safety and interdisciplinary collaboration (Chung & Park, 2016).

Another segment, classified as "important but not crucial," constitutes approximately 20% of students. While these respondents acknowledge the value of medical terminology, they may not perceive it as absolutely essential for daily healthcare communication. This discrepancy could suggest a possible misunderstanding of the full scope of medical terminology's role in minimizing errors, improving patient outcomes, and advancing knowledge through engagement with medical research. Such a perception highlights an area where the curriculum may need to emphasize the broader implications of medical terminology beyond immediate communication needs, particularly in accessing scientific literature and engaging with global medical communities (Davis et al., 2012).

A smaller proportion (around 10%) deems medical terminology as "not important" for healthcare communication. Although this group represents a minority, their response could point to a gap in understanding the role of medical language in specialized fields such as diagnostics, surgery, and pharmacology, where precise communication is critical. This finding may suggest that further pedagogical efforts are needed to raise awareness among students about the potential consequences of inadequate mastery of medical terminology, including miscommunication, patient harm, and legal repercussions (Lujan & DiCarlo, 2006).

7.1 Educational Implications

The results presented in Figure 1 are particularly instructive for educators and curriculum developers. The overwhelming agreement that medical terminology is "crucial" emphasizes the need for robust integration of medical terminology into the existing language curriculum. This should not only focus on rote memorization but also on contextual application, ensuring that students can effectively use this language in real-life clinical settings. The minority of students who downplay its importance may benefit from targeted interventions, such as case studies or simulations that clearly illustrate the consequences of poor communication in healthcare environments (Bates, 2018).

Moreover, the figure serves as feedback for curriculum refinement**,** as the current instruction in medical terminology may not fully address the varying levels of understanding among students. Those who fall into the "important but not crucial" and "not important" categories represent potential areas for improvement in how the significance of medical terminology is communicated within the educational framework. This suggests a need for curricular strategies that emphasize its use not just in patient care but also in scientific research, global collaboration, and continuing professional development (Stedman, 2016).

7.2 Broader Context and Research Implications

The findings illustrated in this pie chart align with global trends in medical education, which increasingly emphasize the role of English for Medical Purposes (EMP) in equipping healthcare professionals with the skills needed for international practice. As the healthcare sector becomes more interconnected, proficiency in standardized medical language becomes indispensable for accessing cutting-edge research, collaborating with international colleagues, and navigating diverse healthcare systems (Bruner, 1960).

From a research perspective, the results of Figure 1 offer valuable data for further studies on needs analysis in EMP curricula. Specifically, understanding why a small proportion of students undervalue medical terminology could lead to targeted interventions or modifications in teaching strategies, enhancing the overall effectiveness of EMP education at Hassan II University. Furthermore, the majority consensus about the importance of medical terminology provides empirical support for expanding medical English instruction in other faculties and medical programs within Morocco.

In summary, Figure 1 offers key insights into student perceptions of medical terminology at Hassan II University Faculty of Medicine, highlighting a broad consensus about its critical role in healthcare communication. However, the presence of a minority who undervalue its importance calls for targeted educational strategies to ensure comprehensive understanding. These findings will aid in refining EMP curricula to better meet student needs and prepare future healthcare professionals for the communication demands of the medical field.

Table 2: Challenges in the Current English Language Module

	Challenges	Frequency (out of 100 students)
1	Limited emphasis on medical terminology	91
2	Insufficient coverage of specialized language skills	66
3	Inadequate preparation for globalized healthcare settings	57

Note: Data gathered from a survey of 100 students enrolled in the English language module.

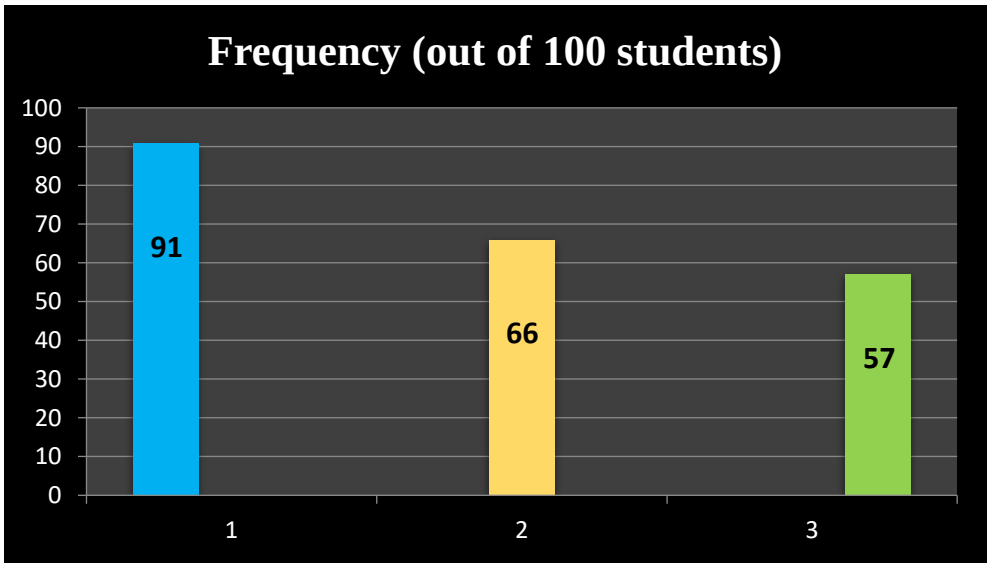

Figure 2: Comparison of English Language Modules in Hassan II University of Medical Sciences

Table 2 (Challenges in the Current English Language Module) shows that 91% of students identified the limited focus on medical terminology as a major challenge. Additionally, 66% noted insufficient specialized language skills, and 57% felt unprepared for global healthcare settings. These figures quantitatively substantiate the qualitative insights gathered from interviews, where both students and practitioners expressed a desire for more targeted instruction in medical terminology. The alignment of these findings between qualitative and quantitative data strengthens the case for revising the English language module to better prepare students for real-world medical communication.

8. Discussion

The English language module at Hassan II University Faculty of Medicine Casablanca, as it currently stands, is insufficient in meeting the specialized linguistic needs of future healthcare professionals. While it covers general English skills such as reading, writing, listening, and speaking, it falls short in delivering robust instruction in medical terminology, a critical component for professional medical communication. This is especially problematic considering the growing global demand for medical practitioners who can communicate effectively in English, particularly in an era where interdisciplinary collaboration and access to international medical research are becoming the norms.

The results of this study underscore the necessity of integrating medical terminology more deeply into the existing curriculum. Figure 1 illustrates that 70% of students view medical terminology as crucial for effective healthcare communication. This consensus highlights a widespread awareness among students of the importance of medical vocabulary in ensuring clarity and precision in medical settings. In contrast, the 10% of students who perceive medical terminology as "not important" reflect a concerning gap in understanding, which may stem from insufficient emphasis on the critical role of medical language in complex areas such as diagnosis, treatment planning, and interdisciplinary collaboration (Davis et al., 2012).

Moreover, the lack of a strong focus on medical terminology, as seen in Table 2, where 91% of students identified this as a major challenge, reveals a critical need for curriculum developers to adjust the instructional balance. Emphasizing specialized medical vocabulary, along with general language skills, is essential for preparing students to navigate real-world clinical environments and global medical contexts. Addressing this gap in medical English instruction will not only enhance students' communication skills but also improve patient outcomes, as communication errors are often cited as a leading cause of medical errors (Bates, 2018).

This finding is further supported by literature which indicates that comprehensive training in medical terminology is a foundation for healthcare communication. Medical terminology serves as the professional language of healthcare and is vital for accurate documentation, diagnosis, treatment, and collaboration across medical teams (Lujan & DiCarlo, 2006). The current English language module, with only 10% of its focus dedicated to medical terminology, does not adequately prepare students for these realities, making a case for urgent reforms in the curriculum.

9. Conclusion

In conclusion, this study reveals critical gaps in the English language module at Hassan II University Faculty of Medicine Casablanca, particularly in its failure to adequately address the need for medical terminology instruction. While the module provides a foundation in general English language skills, it does not equip students with the specialized language necessary for effective communication in healthcare settings. This shortcoming is likely to impact students' ability to engage fully in clinical practice, interdisciplinary collaboration, and global medical discourse.

The findings of this study support the urgent need for curriculum reform to prioritize the integration of medical terminology. As the healthcare sector becomes more globalized, medical professionals must be proficient not only in general communication skills but also in the specialized language of their field. This requires a shift in the focus of the English language module toward a more balanced approach that incorporates both general language skills and specialized medical terminology, thereby ensuring that students are adequately prepared for their professional futures.

To address this, educators, policymakers, and stakeholders must collaborate to revise the English language curriculum. This could include developing specialized modules focused on medical terminology, enhancing the use of contextual learning techniques, and providing professional development for instructors to improve their delivery of medical English content. By making these changes, the university can ensure that future healthcare professionals are not only linguistically prepared but also equipped to contribute meaningfully to the global medical community.

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