

Challenges in Teaching Medical Terminology

Provocations dans l'enseignement de la terminologie médicale

Provocări în predarea terminologiei medicale

Roxana Elena DONCU, Cristina Veronica ANDREESCU, Roxana SFETEA
Universitatea de Medicină și Farmacie "Carol Davila", București
Bulevardul Eroii Sanitari 8, sector 5
roxana.doncu@gmail.com

Abstract

This article deals with some of the challenges that medical students have to face when learning medical terminology and the ways teachers can help their students overcome the inherent difficulties of understanding and learning the medical jargon. The structure of the article follows the most important topics of medical terminology, outlining specific challenges and suggesting ways for teachers to improve their teaching skills.

Résumé

Cet article se réfère à quelques provocations que la terminologie médicale lance aux étudiants des universités de médecine et aux méthodes avec lesquelles les professeurs pourraient aider leurs étudiants à dépasser les difficultés inhérentes à la compréhension et à l'apprentissage du jargon médical. L'article est structuré en fonction des problèmes essentiels de la terminologie médicale, esquisant des provocations spécifiques et suggérant des manières diverses par lesquelles les professeurs pourraient améliorer leurs performances.

Rezumat

Acest articol se axează pe câteva dintre provocările pe care terminologia medicală le adresează studenților de la Universitățile de Medicină și pe metodele prin care profesorii își pot ajuta studenții să depășească dificultățile inerente jargonului medical. Articolul este structurat în funcție de problemele relevante ale terminologiei medicale, schițând provocări specifice și sugerând diverse moduri prin care profesorii își pot îmbunătăți performanța în predarea limbajului medical.

Key words: *medical terminology, foreign affixes, teaching medical jargon*

Mots clés: *terminologie médical, affixes classiques, enseigner le jargon médical*

Cuvinte cheie: *terminologie medicală, afixe străine, predarea jargonului medical*

1. Introduction

Students pursuing the long road of medical education have to face the difficulties of learning the often opaque and specialized vocabulary of the medical sciences. Memorizing the multisyllabic words proves a Herculean task, and so the teacher's role in assisting and guiding the student along the path is very important. The teaching methods and strategies we employ help the students to understand and acquire the language of medicine without having to indulge in last-minute memorization-binges or rote learning.

Studying English medical terminology poses a double challenge for the Romanian students: in addition to learning English as a foreign language (EFL), they have to master certain “med terms” and prove able to use them appropriately in context. English medical jargon has borrowed heavily from Greek and Latin, and often poses great challenges for students, especially where foreign or irregular plurals are concerned, or where word formation is involved: the word parts, roots, suffixes and prefixes are mostly foreign ones. In their hierarchy of affixes, Bauer and Nation placed classical roots and affixes at level 7, as being the most difficult to acquire, setting this task only for advanced or proficiency learners. [1] Learning medical terminology also implies knowing what the terms mean in modern medical English, or being familiar with the common English names for certain body parts or diseases. This article seeks to give a brief overview of the problems and challenges that a student of English medical terminology may have to face in developing key language competencies for a health care professional and offer some suggestions for how teachers may assist students in the learning process.

2. Word building rules.

a) *General challenges*

The first step in acquiring medical terms is to learn how to use the building blocks of word formation, prefixes, suffixes and roots in order to form specialized terms. Students are often unfamiliar with the function of prefixes, suffixes and roots, and so it may be useful to start by revising or pre-teaching them. The teacher should also make sure that students understand the importance of consulting the medical reference dictionaries available at the university library and may recommend that they purchase one. [2] Looking up a word clarifies its meaning, gives the etymology and provides a list of synonyms or antonyms. Medical terminology as part of the scientific jargon requires precision and accuracy and using a medical dictionary will help students meet the requirements of their professional vocabulary. Harmer recommends that teachers should train students “to read and to understand the information contained in the various entries.” [3] by providing them with the opportunity to become good dictionary users- and a helpful activity is filling in a grid with verbal, noun or adjective collocations. [4]

Some useful concepts to be pre-taught are those of the *combining form* and the *combining vowel*. Medical terms often use combining forms- which are word roots to which a combining vowel is added: in cardiology, for example, the combining vowel is needed to bind the root *cardi* to the root *logy*. Many word roots appear with the combining vowel attached to them, as this is often needed in word formation: *gastr/o*, *nephro*, *pulmon/o*, *salping/o*, *acr/o*, etc. Terms should be introduced in context, so that the students get a feeling of how a specific word is used in real life and the way in which it is incorporated in the language. Thus, using authentic reading texts has the advantage of “contextualizing new language items for the learner and an interesting text also serves to make the language more memorable.” [5] While using dictionaries helps students clarify the meaning and organization of a word, texts offer further information in regard to register and possible word associations.

b) *Specific challenges. Prefixes*

Medical terminology uses a lot of prefixes of Greek and Latin origin. A useful strategy for teaching prefixes is to divide them according to their reference (prefixes that refer to location, direction, colour, numbers, size, etc.). Some prefixes may belong to two categories- such is the case of *peri-*, *post-* and *pro-*, which refer to position in both space and time or *super-* and *supra-*, denoting both an excess and the location in space. When teaching prefixes careful attention must be given to spelling, especially in the case of negative prefixes (*il-*, *ir-*, *im-*, *in-*) or the ones that have a similar pronunciation: *dis-*/*dys-*. Both *dis-* and *dys-* are negative prefixes, yet while the former refers to a reversal of the action (dislocate, dismember), the later is used to indicate difficulty/abnormality or pain (dyspnea, dyslexia, dysmenorrhea). Students often confuse *dis-*, *dys-* and *di-* (if the last is followed by a word beginning with *s*, as in dissect/dissection).

Another complex issue is that of the prefixes or combining forms that are used to denote colour. Most dictionaries list them as combining parts, yet they are constantly used before a certain word part, so it may be more adequate to present them as prefixes. There are many different prefixes for colours in medical terminology, derived simultaneously from Greek and Latin. Thus *erythr/o*, *eosin/o* and *rube-* are used to refer to red, *alb-*, *albin/o* and *leuk/o* refer to white and *cirr/h/o*, *jaund/o* and *xanth/o* refer to yellow. Students have to be introduced to different terms like cirrhosis, jaundice and xanthoderma as well as differentiate between the different contexts in which the prefixes are used (some for diseases, growths and rashes, some for chemical reactions of the colour of body fluids).

c) Specific challenges. Suffixes.

When dealing with suffixes in medical terminology, students have to be able to identify only two major categories: suffixes that turn words into nouns and suffixes which turn words into adjectives. In addition to their grammatical function, they have to distinguish their meaning. For example suffixes that form nouns have the additional meaning of condition (*-y*, *-ia*, *-ism*, *-osis*), pain (*-algia*, *-dynia*), inflammation (*-itis*), a specialist/practitioner in a field (*-ian*, *-ician*, *-ist*, *-iatrist*, *-logist*), etc. An important category is that of suffixes used to indicate types of surgical procedures (*-ostomy*, *-ectomy*, *-plasty*, *-pexy*, *-centesis*), instruments (*-graph*, *-meter*, *-scope*) or diagnostic procedures (*-graphy*, *-opsy*, *-scopy*). Adjectival suffixes like *-ac*, *-al*, *-ar*, *-ic*, *-ary*, *-ical*, *-ous*, *-tic* are a very productive category in the medical scientific jargon and students have to become familiar to their differentiated use by deriving adjectives from a broad and varied category of medical nouns.

d) Specific challenges. Greek and Latin Plurals

Many medical terms are borrowed or derived from the large stock of ancient Latin and Greek words. The predominance of Latin is explained historically by its being the lingua franca of education during the Renaissance when medicine started to acquire the status of a science. The choice of Greek reflects the importance of the Greek Hippocratic tradition and the seminal role the Greek physicians Hippocrates and Galen played in the development of European medicine. Students should be made aware of these historical facts, as they often feel that Greek and Latin plurals are contingent and unnecessary, and this considerably diminishes their motivation and interest in learning them. New scientific words that are coined are also derived from Greek and Latin (the ribosomes discovered by George Emil Palade, for instance), as scientists and researchers try to name their discoveries by using the common custom of coinages from Greek and Latin.

When teaching foreign plurals it might be useful to divide them into Greek, Latin or French plurals as well as differentiate between words with similar endings. Thus for example the plural of *pleura* is *pleurae* (a Latin plural) while the plural of *trauma* (a Greek word) is *traumata*. Students should be encouraged to make lists of their own with the relevant plural categories, and add new words as they come across them in their reading texts.

Ehrlich and Schroeder also recommend teaching students look alike or sound alike easily confused words such as the pairs fissure-fistula, ileum-ilium, mucous-mucus, palpation-palpitation, prostrate-prostate, viral-virile, etc. [6]

3. Whole body terminology.

From word-building rules, the next step in familiarizing students with medical terminology is to teach them a comprehensive list of medical terms related to the major body systems: the skeletal system, the muscular system (sometimes these two are comprised in a whole unit on the muscular-skeletal system), the nervous system, the respiratory system, the cardiovascular and the circulatory systems (usually grouped together), the digestive system, the endocrine system, the urinary and the reproductive systems and their particular disorders, diseases and treatments.

Before going into details concerning the structure and organization of each of these particular systems, the teacher should have in mind the interests of medical students, who come across these terms in real life, using them in diagnostic, prognostic and treatment situations. These particular terms are usually used in conjunction with terms relating to the architecture and

description of the whole body, defining the structural relations between body parts, organs and systems. More precisely, the medical terms that should be first introduced to the students are those related to the structural organization of the body, from the cellular to the systemic level, used to identify specific regions (hypochondriac, epigastric, lumbar, inguinal, umbilical, etc.), quadrants (right upper quadrant, left upper quadrant, etc.) planes (frontal, transverse, medial, midsagittal, etc.) of the body as well as divisions of the spinal column (the sacral, lumbar, thoracic and cervical regions). These terms are particularly significant as they provide the future medical specialists with the appropriate vocabulary describing the position of organs and directions of movements or dissection within the body. They should be introduced as part of real-life medical reports- thus offering students real contexts. Of further help in teaching this vocabulary are learning resources-visual aids such as maps or even three dimensional reproductions of the body, on which students will be encouraged to locate the regions or the quadrants of the body. [7]

In order to practise and review the vocabulary related to the whole body, teachers should resort to working sheets with a variety of exercises: term definition, labeling, matching, multiple choice, opposites (antonyms) and synonyms, word search or crossword puzzle. Reading a text and understanding the words is just a part of the learning process and involves only receptive vocabulary [8], whereas exercises and contexts which help the students to speak and write newly learned items involves productive knowledge.

4. Terminology of the body systems

The key competencies a medical student should develop in regard to the terminology of the body systems are: the ability to correctly identify structures of each studied system, to list some of their functions, to define pathological conditions of each particular system (its diseases and disorders) and to identify the diagnostic procedures and techniques and the treatment of pathological conditions. Thus the vocabulary related to the body systems should be integrated in a complex text treating the anatomy and physiology of the body systems, its pathological conditions and the diagnosis and treatment of diseases. Also, teaching common medical abbreviations for each system (such as UV for ultraviolet, Bx for biopsy, Fx for fracture, MS for multiple sclerosis, MRI for magnetic resonance imaging) might be useful, as students will come across them quite often in textbooks, medical atlases and encyclopedia, articles, etc. A good way to practise and review word elements (roots, suffixes and prefixes) is to reinforce them throughout the texts dealing with various body systems [9]. Useful exercises at the end of each of each system should include formation of plurals, antonyms and synonyms, term definition, matching structures, matching abbreviations, matching pathological conditions, word search, labeling, multiple choice, word or phrase completion, crossword puzzle. In order to practise and test spelling, proofreading exercises, which require students to correct misspelled terms in an autopsy report or a letter of referral will prove useful. An extremely complex exercise which involves both receptive and productive vocabulary and which tests the student's medical knowledge and skills as well as his/her mastery of English medical terminology is the medical scenario. The medical scenario typically presents information on a pathological condition, requiring the student to understand and process the information, and then respond to a number of questions ranging from issues related to pathogens and pathology, symptomatology and treatment, post-operative care, medical ethics or the doctor-patient relationship.

Another useful suggestion comes from Ehrlich and Schroeder, who recommend critical thinking exercises as the meeting point of receptive and productive vocabulary skills- by encouraging students to discuss certain problems in classroom or write a brief essay response. However, these exercises are adequate for more advanced levels, where students already possess a certain mastery of medical terminology.

5. Conclusion

Learning to use medical vocabulary accurately and adequately is a challenging task for a Romanian medical student, as it requires both an extensive knowledge of English and a specific knowledge of certain terms from the medical jargon. The present article, by offering some guidelines for teachers, hopes to be of help to both medical teachers and their students, engaged in the difficult process of teaching and acquiring a specialized vocabulary.

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