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INTRODUCTION TO MEDICAL ENGLISH: A CRASH COURSE

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The article outlines the crash course Introduction to Medical English, which was specially tailored for the Medical Studies in English Program launched at the University of Zagreb Medical School in the academic year 2003./2004. The 20-hour course of seminars is aimed at giving the students an idea about the basic principles of the morphology of medical terms and providing them with the "tools" of word analysis, thus enabling them not only to recognize, but also to form new medical words as they need them.

The analysis of the questionnaire which the students were asked to fill in before and after the course has shown the expected difference in vocabulary acquisition between the levels of recognition and production to be markedly in favor of recognition. Even so, this course undoubtedly facilitates their first immersion into the language of medicine, one of the most propulsive scientific areas today.

Key words: medical terminology, crash course, vocabulary acquisition at the levels of recognition and production

INTRODUCTION

After long and careful preparations, in the academic year 2003./04. the program of Medical Studies in English was introduced as an addition to the curriculum of the University of Zagreb Medical School. The program was conceived as a 12-semester undergraduate course of studies leading to the MD degree, and designed so as to conform with the global essential requirements and standards for undergraduate medical education, which is specially relevant at the present moment of Croatia's prospective membership in the European Union, where the mobility of students is a key concept of every study program in agreement with the Bologna Declaration. The program is aimed at foreign or Croatian diaspora high-school or college graduates who are either native speakers of English or have a certifiable knowledge of the language at the necessary level to participate in the teaching process conducted entirely in English.

At the planning stage, there was some deliberation on whether to include a Medical

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English course into the curriculum, since the language competence of these sudents would obviously differ from that of our Croatian students, who are now required to take 120 hours of seminars of Medical English, a course which, although largely oriented towards professional English, nevertheless necessarily includes some aspects of dealing with the language that take into account the fact that the students are not native speakers. Finally, my suggestion of a tailored 20-hour introductory course was agreed upon.

The winter semester of 2005./06. has been the third year of enrollment of a new class of 19 students from different national (Canadian, American and German citizens, mostly from Croatian parentage) as well as educational backgrounds (high school and college graduates with various majors). And since our course proved successful in the two previous years, this semester it seemed opportune to do an in-depth analysis of our work, which would hopefully provide some more insights into the process and results of the rather specific language acquisition this course provides.

Here it must be emphasized that vocabulary acquisition in itself is not the main goal of the course, but rather providing the students with a "tool" for vocabulary analysis which is supposed to enable them to deal with their professional vocabulary in whichever manner a certain situation requires, whether it is just comprehension of a given term or the production of terms as the need arises.

To make sense of the following course layout, let me briefly outline the basic structure of medical terms and stress the importance of understanding the principles of their morphology.

A medical term usually consists of two or more basic elements, which are word roots (or combining forms, roots together with a vowel, usually o, that links them to the suffix), suffixes and prefixes. Although these are prevalently of Greek and Latin origin, they are spelt, and especially pronounced, the English way (which tends to be a marked point of interference for our Croatian students, who are still required to master the entire anatomical nomenclature in Latin). Thus each element, by carrying part of the meaning, contributes to the meaning of the complete term. In other words, you can arrive at the meaning of a medical term by breaking it down into its components and "adding up" their separate semantic contents. When explaining this principle to my students, I usually compare medical word building to playing with Lego blocks – by combinig different parts, according to certain rules, of course – you can achieve a vast number of new meaningful units.

Since the lists of all roots, prefixes and suffixes currently in use are huge (the latest edition of Dorland's Medical Dictionary defines more than 120,000 terms), a very limited choice had to be made for the purpose of our course, but one which would still cover the most basic and frequently used terms. Thus around 60 word roots, covering the main organs and tissues, were chosen. Together with the most frequent suffixes (about 50) and prefixes (about 80), divided into manageable categories, they alone provide hundreds, if not thousands, of possible combinations!

Consequently the following course schedule was arrived at:

Day 1: Word formation – morphology of medical terms
Combining forms (body parts and tissues)

Day 2: Suffixes (1. states, disorders, symptoms; 2. diagnostic procedures; 3. surgical procedures; 4. diminutive form endings; 5. adjectival endings)

Day 3: Prefixes (1. position, location, direction; 2. color; 3. number, negation, measurement, size; 4. miscellaneous)

Day 4: Terms pertaining to the body as a whole (1. structural organization of the body; 2. body cavities; 3. abdominopelvic quadrants and regions; 4. anatomical division of the back; 5. positional and directional terms; 6. planes of the body)

Day 5: Revision
Oral quiz

As to how the seminar work is done, it is important to stress that the classes (two 90-minute units per day) have been designed as a constant teacher-student interchange, slowly building upon and developing the students' knowledge, stimulating them to take an active part in the process from the start, encouraging pair and group work, peer teaching, and viewing the instructor's role as facilitator rather than teacher in the traditional sense.

The course incorporates a short oral quiz at the end. It entails the analysis of a number of randomly chosen terms from a prepared bulk containing only terms which had been expressly mentioned in class. In other words, knowledge on the basis of recognition is tested rather than the ability to generate terms independently from the elements learned.

Thus the main points of interest of this research were to find out, first, the general extent of knowledge acquisition provided by the course, and second, whether there was any significant difference as to those two abilities, recognition and production of the acquired vocabulary.

METHOD

For this purpose, the students were asked to complete the following questionnaire at the start and at the end of the course. The first list of 14 common medical terms asks for their definitions, while the second list contains definitions in which the words that represent the constituent elements of the required medical terms are highlighted. Thus **the first part tests recognition**, while **the second requires production**:

I. Complete the short definitions of the following terms:

1. **cephalalgia** - _____ in the _____

2. **leukopenia** - _____ number of _____
3. **angiogram** - _____ of the _____

4. **ophthalmoscopy** - procedure of _____ the _____
5. **hysterectomy** - _____ of the _____
6. **rhinoplasty** - _____ of the _____
7. **cystocele** - _____ of the _____
8. **epigastric** - pertaining to _____ the _____
9. **intercostal** - pertaining to _____ the _____
10. **bradycardia** - condition of _____ _____
11. **postmortal** - occurring _____ _____
12. **dyspnea** - condition of _____ _____
13. **tetradactyly** - condition of having _____ _____
14. **primipara** - woman who _____

II. Generate the appropriate medical term from the given definitions:

15. irrational **fear** of **many** things _____
16. **rapid breathing** _____
17. **red** blood **cell** _____
18. **below** the **kneecap** _____
19. a **contraction** of the **intestine** _____
20. **radiographic** examination of the **brain** _____
21. **puncturing** of the **chest** _____
22. **"black"** skin **tumor** _____

23. **instrument** for measuring **lung** capacity _____

24. **surg. opening** from the **colon** to the surface of the body _____

25. **surrounding** the **kidney** _____

26. state due to **insufficient/unbalanced diet** _____

27. consisting of a **single cell** _____

28. **hardening** of the **joints** _____

The examples were selected in such a way that they contain not only different word roots/combining forms, but also a selection from all the categories of suffixes and prefixes that had been dealt with.

RESULTS

In evaluating the completed questionnaire, only complete definitions were taken into account. Minor orthographic mistakes were disregarded.

As expected, before the course only one widely used term (*postmortal,* 95%) was practically known to all the students, along with a relatively high score, though less than 50%, for the terms for red blood cell (*erythrocyte*, 42%) and rapid breathing (*hyperventilation*, 42% - the alternative, *tachypnea*, was not produced), as well as *rhinoplasty* (37%), probably due to the frequency and popularity of this procedure nowadays.

In the first (recognition) part of of the questionnaire, the mean score before the course was 11.35%, while after the course it amounted to 65.06%. This shows an average **progress of 53.71% at the level of recognition:**

TABLICA 1

I. Complete definition (testing recognition)	% correct before course	% correct after course
1. pain in the head	0	89.42
2. deficiency in white blood cells	5.26	89.42
3. record of blood vessels	0	73.64
4. examination of the eye	26.31	89.42

5. removal of the uterus	21.04	78.90
6. reconstruction of the nose	36.82	84.16
7. hernia of the urinary bladder	0	84.16
8. above the stomach	5.26	94.68
9. between the ribs	10.52	68.38
10. slow heartbeat	5.26	100
11. after death	94.68	100
12. difficulty breathing	5.26	94.68
13. having four fingers/ toes	0	100
14. woman giving birth for the 1st time	5.26	89.42

In the second (production) part of the questionnaire, before the course the mean score was 8.02%; it rose to 47.34% after the course, indicating an average **progress of 39.32% at the level of production:**

TABLICA 2

II. Required term (testing production)	% correct before course	% correct after course
15. polyphobia	5.26	78.90
16. tachypnea, hyper-ventilation	42.08	68.38
17. erythrocyte	42.08	94.68
18. infra/subpatellar	10.52	63.12
19. enterospasm	0	63.12
20. encephalography	5.26.	52.60

21. thoracocentesis	0	42.08
22. melanoma	5.26	78.90
23. spirometer	0	10.52
24. colostomy	0	78.90
25. perinephric/renal	0	57.86
26. malnutrition/nourish-ment	15.78	42.08
27. uni/monocellular	26.31	78.90
28. arthrosclerosis	0	89.42

Consequently, the total **average vocabulary acquisition rate** can be calculated at **46.51%.**

CONCLUSION

Although an average vocabulary acquisition rate of 46.52% does not seem very high, it is a result which could be expected, given the brevity and intensity of the course as well as the small number of tested students, among which there were considerable differences in individual achievements. The results obtained from a more representative (considering their background and number) group of students might perhaps differ. Research to this effect is already underway.

According to expectations, the initial slight difference between recognition and production (3.33%) before the course grew to 17.72% after it, a result which confirms the fact that passive knowledge (recognition) is always wider than active (production), and that the time component necessarily plays an important role in turning one into the other.

However, it has already been emphasized that the course primarily aims at providing an understanding of the basic principles underlying the morphology of medical terms, rather than the memorization of a given number of terms. Also, as positive feedback was obtained from the students after they started anatomy classes – they claimed that our course had helped to reduce the "shock" of the vast anatomical nomenclature they were faced with – we can safely conclude that even such a basic and time-limited course provides a valuable contribution to helping the students cope with the language of one of the most propulsive scientific areas of the present day.

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Sažetak

Članak opisuje kratak intenzivni tečaj uvoda u medicinsku terminologiju posebno "skrojen" za potrebe studija medicine na engleskome jeziku, uvedenoga na Medicinskom fakultetu Sveučilišta u Zagrebu akademske godine 2003./2004. Dvadesetosatni ciklus seminara zamišljen je kao upoznavanje studenata s osnovama morfologije medicinskih termina, dajući im na taj način, čak i s ograničenim brojem predstavljenih elemenata, "alat" kojim će ne samo moći prepoznavati termine, nego i po potrebi generirati nove. Iako su rezultati analize upitnika, koji su studenti ispunili prije početka i po završetku tečaja, pokazali da je razlika u usvajanju vokabulara između razina prepoznavanja i produkcije značajna u korist prepoznavanja, nedvojbeno je da će im čak i ovako kratak tečaj znatno olakšati susret s jezikom jedne od najpropulzivnijih struka današnjice.

Ključne riječi: medicinska terminologija, intenzivni tečaj, usvajanje vokabulara na razini prepoznavanja i produkcije

Zusammenfassung

Im Artikel wird ein kurzer Intensivkurs zur Einführung in die medizinische Terminologie beschrieben, speziell entwickelt für das neue Programm des Medizinstudiums in Englisch, das an der Medizinischen Fakultät der Zagreber Universität im Jahre 2003/ 2004 startete.

Das Ziel des 20-stündigen Seminarprogramms ist, den Studenten die Grundlagen der Struktur medizinischer Termine näherzubringen, und ihnen auf diese Weise zu ermöglichen, auch auf Grund einer begrenzten Zahl von Elementen, medizinische Wörter nicht nur zu verstehen (identifizieren), sondern gegebenfalls auch produzieren zu können.

Obwohl die Ergebnisse des Fragebogens, den die Studenten vor wie auch nach dem Kurs beantworteten, den erwarteten Unterschied zwischen Vokabularaneignung auf den Ebenen der Identifikation und der selbstständigen Produktion zugunsten der Identifikation bestätigten, erleichtert dieser Intensivkurs den Studenten trozdem den ersten Kontakt mit der Terminologie eines der fortschrittlichsten Gebiete der heutigen Wissenschaft.

Schlüsselwörter: medizinische Terminologie, Intensivkurs, Vokabularaneignung als Identifikation oder Produktion