A Prescription for a New Course of EMP

The analysis of lexical, syntactic and textual uses has strong implications for many applied linguistic purposes, particularly EMP and the teaching of professional and academic writing. EMP for didactic purposes is in fact a practical discipline focused on helping students learn the linguistic peculiarities of EMP (from the lexis to the grammar of EMP, to certain discourse features of spoken and written texts and, finally, to the genres used within the EMP domain) which they should master in order to be considered competent members of the discourse communities they aspire to join. The research work on register, discourse and genre analysis, as well as the results of rhetorical and computer-based analyses within ESP linguistics, provide the EMP teacher with a fuller understanding of how both written and spoken specialised texts work. This allows her/him to organise a successful EMP course aimed at preparing learners to communicate effectively in the tasks prescribed by their study or work situation.

Since the recent emergence of discourse and genre analysis, language-teaching programmes have become more descriptive, so that the learner understands why s/he should write an essay or an academic or a professional text in a particular way. This also raises greater awareness of the rationale for the text-genre that s/he is required to read or write. After all, the most important function of learning is not simply to be able to read and produce a piece of text as a computer does, but to become sensitive to textual conventions, in order to guarantee the pragmatic success of a text in the academic and/or professional contexts in which it is likely to be used. The explanation for any aspect of syntax in EMP comes from the analysis and understanding of the genre in which it is conventionally used (Bhatia 1993). This is why even if the teacher of EMP is not the “primary knower” of the carrier content of the material, s/he should be a course designer and material.
provider choosing suitable published material, adapting material when published material is not suitable, or even writing material where nothing suitable exists; a researcher carrying out research to understand the discourse of the texts that students use; a collaborator of specialists in the subject in order to find out about the subject syllabus in an academic context or the tasks the students have to carry out in a work situation; and, finally the EMP teacher should be an evaluator testing the students, and evaluating both courses and teaching material (Dudley-Evans – St. John 1998).3

Behind any successful ESP course is a continuous process of questioning, ascertaining what the course should contain, how it should be run, checking how valid the original answers were and how effective the ideas they lead to are, and discovering what works best and why. In particular, special attention is paid to the analysis and evaluation of needs, course design, the role of materials, classroom practice and assessment.

The ability to read English medical texts is one of the key skills needed for professionals in medicine. Reading efficiently is, of course, also a priority for medical practitioners who wish to keep abreast of the continual advances in science. Even if students do not travel abroad and do not take part in professional conferences, they will be expected to follow the new developments in their specialities by reading articles in medical journals. Teaching materials should therefore consist of authentic texts, since these reflect the real difficulties inherent in the comprehension of research communication. During classes, students should be encouraged to practise different reading strategies, such as finding collocations or key words in particular texts. They should also practice note-taking and writing summaries based on their notes. Students could be asked to “rewrite” a popularised article according to the stylistic and textual guidelines of present-day scientific prose (Salager-Meyer 1994). Authentic texts also serve as a source of terminology on a subject. In groups or in pairs they may turn a lengthy text into a leaflet or a poster, recycling the basic terminology relating to a particular medical problem. Medical students also need to know a great variety of specialised vocabulary. In particular, the construction of crosswords can give many opportunities to use a specialist dictionary.

In the Medical English teaching syllabus it would also be preferable to devote more teaching time to speaking and understanding the language used at conferences and lectures, using videotapes

about the content than the teacher, it is essential that the EMP teacher takes an interest in the disciplines and professional activities in which the students are involved, and adopts the stance of the consultant who has knowledge of communication skills and linguistic accuracy, but needs to “negotiate” with the students on how best to exploit these skills to meet their own objectives (DUDLEY-EVANS – ST. JOHN 1998).

3 In my ten years of experience as a part-time Lecturer of EMP, I have tried to follow Dudley-Evans and St. John’s advice: I have written some works and a book on the theory and practice of EMP, I completed a Ph.D. on Medical Translation, and I collaborate with many physicians as a translator and proofreader. Each time I finished a course I assess both the course and the teaching material in order to better satisfy my students’ needs the following year. Moreover, I play another role, as the wife of a physician. I think this is a good way to always have a specialist at my disposal to resolve my own and my students’ linguistic and conceptual doubts.
or CD-ROM recordings (Webber 1995). Students could be required to answer comprehension questions after reading or listening to these texts. Naturally we must indicate here the wider use of MEDLINE\textsuperscript{4} and the Internet to increase familiarity with written genres, and greater exposure of the medical student learner population to the language of seminars and conferences to become familiar with the spoken genre (Webber 1995).

In short, the present study intends to make a modest but useful contribution to the aforementioned pedagogic orientation of EMP studies. It has in fact been conceived as a learning resource for the acquisition of those linguistic competences that make students capable of communicating effectively in English in their professional field. The teaching activities developed for this paper draw upon research presented mainly by Hutchinson – Waters (1987) and Dudley-Evans –St. Jones (1998) which advocates the adoption of a learner-centred approach focussing on enhancing students’ communicative skills along with other linguistic abilities. Moreover, the instances of data-driven learning (Tim John’s coinage) mirror the growing interest in the application of corpus tools in language education, and show how a corpus-informed approach to EMP can work in practice.

**Introducing students to EMP course: problems, premises and objectives**

This paper deals with some didactic strategies I devised, and some activities I offered during the course in EMP I organised for my students attending Medicine or other undergraduate and postgraduate courses such as nursing, physical therapy, dentistry, psychology etc. with the aim of allowing them to understand the language of medicine. I arranged the course according to the timetable hours at my disposal (from 1.5 credit to 6 credits) and my students’ average knowledge of English. Only the positive feedback from my students encouraged me to elaborate, systematise and summarise my didactic ideas and activities into a book (Maglie 2009).

Every time I started the course I read a sentence by Romich which is as follows «Studying medical terminology is like learning a new language» (Romich 2001, 122). At first the words look different and complicated. However, by understanding a few important guidelines, medical terminology can become interesting and seem like solving a logical puzzle. By quoting Romich in this way, I reassured some of my students who had only beginners’ knowledge of English, and invited all the advanced students and native speakers of English attending my course to be on the alert, since they may obviously have had unreliable intuitions about medical usage. I then embarked

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\textsuperscript{4} MEDLINE is a well-known website visited by the medical community in order to obtain up-to-date information on medical matters (for further information, visit http://www.nlm.nih.gov/pubs/factsheets/medline.html).
on an emotional journey with all my students – my course of EMP – through the lexical, syntactic and textual features of Medical English, in the aim of preparing my students to communicate efficiently in the tasks prescribed by their study or work situation.

**Understanding the Linguistic Features of EMP: Lexis and Terminology**

The EMP course used to begin with an overview of the lexical features of EMP (i.e. lexis and grammar), certain discourse features of written and spoken texts and the genres used in the EMP domain. It can be underlined that in general English curriculum design only general language needs are met, but with an EMP curriculum not only the general but mainly the specific English needs should be taken in great consideration in order for the students to competently operate in their specific research area or occupation.

For example, an EMP syllabus needs to focus more on forming plurals of medical terms that can be one of the most challenging aspects of medical transcription. However, the good news for my students is that plurals generally follow some basic rules, as summarised in Table I. After analysing the table, my students practised the rules through exercises which imply the rules of forming plurals in general and in EMP, or in which they should identify the plural or singular of certain medical terms.

| Change x to c or g and add es: | thorax, thoraces; meninx, meninges; |
| Change is to es: | diagnosis, diagnoses; |
| Change oma to omata | carcinoma, carcinomata (carcinomas is also acceptable). |
| Change a to ae | vertebra, vertebrae; |
| Change um to a | bacterium, bacteria; |
| Change us to i | fungus, fungi; |
| Change on to a | ganglion, ganglia |
| Change en to ina | lumen, lumina |

Table I summarises how to form plurals of medical terms (taken from Villemaire – Villemaire 2001, 10).

In this article I also report examples of corpus applications in EMP language curriculum. Arguments have been made for the development of micro-corpora as resources for use in English for Academic purposes (EAP) programmes (Hyland 2000; Tribble 2002) and a corpus-informed approach to EMP Teaching/Learning seems to have much to recommend itself so long as relevant data are available (Thompson – Tribble 2001). I will not, therefore, review the development of
classroom concordancing or argue for its relevance to EMP language teaching, but will look immediately at some areas of possible application for specific corpora\(^5\). disambiguation, terminological exactness and collocates of various strength, to show how learners in EMP classes take advantage of corpus resources to extend their understanding of these central aspects of Medical Discourse.

Thanks to the Medical English and Italian Corpus (MEIC)\(^6\), a parallel corpus on Medical language (Medical English Corpus – MEC: 1,427,266 words and Medical Italian Corpus – MIC: 1,589,364 words) I built up during my Ph.D., my students and I could investigate the meaning of certain words like *surgery*, which can be ambiguous or indeterminate out of context. By reading the concordance lines drawn from the MEC, the Medical English Corpus, we identified the precise meaning of *surgery* (834 entries) that can mean the branch of medicine, a medical treatment for instance (MEANING 1 and 2 respectively in the concordance lines below). This terminological investigation also allowed a distinction to be made between British English and American English, the true lingua franca of international communication, by telling my students that *sala operatoria* in British English is not rendered with *surgery* (MEANING 3 in concordance line from the British National Corpus)\(^7\) as in American English but rather with *theatre*. On the other hand, *studio medico* and *orario di visita* in American English is not rendered with *surgery* as in British English but with *office*, as a check of a corpus, such as the MEC reveals (MEANING 4 and 5 respectively in the concordance lines below). Moreover students can develop their linguistic analysis by discovering terms related to surgery: procedures, techniques, objective and extent, the company that *surgery* usually keeps, its negative and/or positive semantic prosody (see the concordance lines below).

... of medicine. My *specialty* is cardiac *surgery*. My private practice, based in ... (mean. 1)
... provision. Lu had *gallbladder surgery* and incurred covered medical ... (mean. 2)
... deserted freeway on my way to the *surgery*. It is not nothing! In spite of ... (BNC mean. 3)

\(^5\) Readers who wish to explore this area further may wish to start off with A. \(^6\) The parameters of the MEIC are: a single period of time (i.e. contemporary material), all the branches of medicine (Endocrinology, Gastroenterology, Orthopaedics, Rheumatology, Pneumology, Otorhinolaryngology, Ophthalmology, Dentistry, Dermatology, Haematology, Oncology, Immunology, Allergology, Study of Infective Diseases, Neurology, Psychiatry, Cardiology, Urology, Gynaecology, Obstetrics, Paediatrics, Genetics, Pharmacology, Poisoning), and one genre (handbook). The Merck Manual – used here in the English (original language) and Italian (translation) versions – is an internationally-distributed handbook, divided into chapters (written by different authors) each of which discusses a different disease or medical issue. Its aim is to give concise information about different diseases, including their aetiology, pathogenesis, symptoms, diagnosis, treatment, and prognosis. The manual is intended for both practitioners and advanced students of medicine. The reader is supposed to have background knowledge of the various branches of medicine, since the text is intended for consultation by experts, rather than being a textbook for novices. (for further information, visit \http://www.merckmanuals.com/\).
\(^6\) The British National Corpus (BNC) is a 100 million word collection of samples of written and spoken language from a wide range of sources, designed to represent a wide cross-section of current British English, both spoken and written (for further information, visit \http://www.natcorp.ox.ac.uk/\).
... youth with [...] was wheeled on a low-slung ambulance trolley into the Cleansing Theatre ... (BNC mean. 3)

... The child can rest in the nurses’ office during the school day, with the expectation ... (mean. 4)

... Direct observation of parent-child interaction during the office visit provides ... (mean. 5)

... With increases in organ transplant surgery, one must be quite certain what ... (surgery procedure)

... some urologists suggest implant surgery as an option – even the preferred ... (surgery technique)

... a vagina. In most female-to-male surgery both the vagina and the clitoris ... (surgery objective)

... women who undergo breast-conserving surgery have a better postoperative body (surgery objective)

... for Ann. Recovering from major surgery for a second time in less than a ... (surgery extent)

... through vasectomy, which is minor surgery that consists of cutting and tying ... (surgery extent)

... also can take many hours to perform surgery, with the doctor having to stand (perform + surgery)\(^8\)

... of an intrauterine device (IUD), and surgery did not correct the problem ... (surgery negative prosody)

... If the cancer is localized, surgery is the preferred treatment. Yet by... (surgery positive prosody)

Another possible use of my corpus is finding the solution to translation conundrums, such as the translation of polmonite into English. By using monolingual medical dictionaries like Stedman’s, we are given three translation options but no information about their usage. However, by using the MEIC as a parallel corpus, we found out that polmonite (450 entries) is translated usually with pneumonia (690 entries), often with pneumonitis (109 entries) and never with pulmonitis. My students and I then became curious to detect when polmonite is rendered with pneumonia and when with pneumonitis and whether pneumonitis is synonym of pneumonia. After a thorough analysis of concordance lines, we understood that the two terms are synonyms in some cases (i.e. aspiration pneumonia/pneumonitis, chronic pneumonia/pneumonitis, acute interstitial pneumonia/pneumonitis), but they indicate different lung diseases in other cases (i.e. hypersensitivity pneumonitis and radiation pneumonitis are valid only if followed by the word pneumonitis). We also had the chance to investigate differences in phrase construction between Italian and English (e.g. polmonite a cellule giganti/giant-cell pneumonia; polmonite interstiziale commune/usual interstitial pneumonia; and polmonite del paziente defedato/pneumonia in the compromised host).

Other terms we often analysed through the MEIC corpus are cases of false friends, recovery, for instance, and cases of translation problems, for example malattia, which in English is rendered

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\(^8\) The idea of analysing surgery together with the verb “perform” arose from a dialogue between Chomsky and Hatcher, quoted in Hill (1962, 29) which I report here:

- Chomsky: The verb perform cannot be used with mass word objects: one can perform a task but one cannot perform labour.
- Hatcher: How do you know, if don’t use a corpus and have not studied the verb perform?
- Chomsky: How do I know? Because I am a native speaker of the English language. (Hill 1962, 29). One can perform surgery, for example, as a check of a corpus such as the MEC reveals.
with illness, sickness, disease, disorder, or pathology, according to its precise meaning, the degree of specialisation of the specialist discourse, the addressee and the addressee of the specialised message. The integration of corpora into my EMP classrooms has shown positive learning outcomes because they not only provided learners faster searching tools and better quality of contexts that traditional dictionaries are not likely to achieve but enhanced their learning motivation: learners were involved in a more speedy and efficient language learning experience, they obtained mixed types of authentic language examples including phrases and collocations, rather than simple and clear sentences, and learners were involved in tasks of exploring, choosing and determining the language from various resources that the computer found. By using this technique called data-driven language learning (Krishnamurthy 2004) the classroom therefore becomes student-center and learners have active control of their own learning.

Use of Verb Tense and Passive Voice

Reading scientific research articles in medicine with the aim of detecting the way writers present their research findings seems useful to explain the grammar areas of verb tense and passive voice. The pedagogical objective of this teaching activity is to help non-English speaking writers construct a persuasive argument in their highly competitive field.

For instance, when analysing the Introduction section of a research article (RA), my students and I used to revise the rules of tenses which tell us that the choice of tense also implies the author’s attitude to the content. In particular, when authors give an extended review of other literature surrounding their topic under investigation. If their own study is relevant to the previous study cited, the latter is always presented in the present perfect tense. On the other hand, work which is perceived as distant from the present study, or which is refuted by the authors, is usually given in the simple past. When the authors speak of their own work, they often use a personal form – generally the first person plural. There is also a switch in the tense choice here – to the simple past if the study is finished. Only a universally accepted truth is given in the present tense (Webber 1996). In this task, students became eager to discover when the authors use the present perfect tense, the simple past, or the simple present\(^9\).

\(^9\) For example, last year my students of Psychology and I analysed a review article written by their professors of Psychiatry, Bertolino and Blasi. Their task was not only to identify all the strategies used to shorten scientific discourse (e.g. use of acronyms, replacement of relative clauses, stacked noun phrases) or to detect some peculiarities of scientific discourse (e.g. nominalisation, active vs. passive voice) but also to understand if the review offers an efficient reading method. They were asked whether the authors had performed a thorough literature review, or only presented research findings; and whether the authors had accepted the primary researchers’ interpretation of study data uncritically, or whether they had included methodological commentary along with their content review.
Often I challenged them to make some extremely long or awkward sentences shorter and clearer without altering their meaning (e.g. *The major aim of the present paper was to obtain a quantitative evaluation of …*). I also invited them to understand when it is possible the switch from active to passive voice by setting simple exercises to identify the voice as active or passive, and change passive sentences to active, or to analyse extracts from Materials and Methods and Results sections where the passive is used by convention.

As the number of the analysed papers in class was limited, more studies are necessary to further clarify the difficulties non-English speaking scientists may face when they read and or write a research article in medicine. Nonetheless, the findings in this activity of differences in the use of verb tense and passive voice can help students identify how persuasive scientific arguments are constructed, as they now be alerted to paying more attention to the type and tense of verbs that combine with *we*, for instance, in both the writing and reading of papers in their field.

**Text Genres: Manuals**

Authenticity should be a central factor in designing EMP teaching materials (Robinson 1991). I believe that producing tailored-made authentic materials conveys real-life input into the classroom where the English teacher uses that authentic input both to introduce authentic tasks and activities that meet the learners’ specific needs and to develop students’ linguistic skills. With this end in view we read manuals, research articles and medical reports (see also the next two sections) so that medical students could gain familiarity with medical written language and discourse in different medical contexts. The focus was on carrying out specialized activities in English, but attention was given to reading comprehension skills (expanding the English general and medical vocabulary repertoire through extensive readings), academic and scientific writing skills, and to the peculiarities of technical medical terminology.

For instance, we used manuals to cope with authentic tasks. We used to make a *differential diagnosis* (i.e. a systematic method of diagnosing a disorder that could be considered a core clinical skill) between angina pectoris and acute pericarditis or between Crohn’s disease and ulcerative colitis. For instance, the students should have read two handbook extracts about Crohn’s disease and ulcerative colitis to allow them to complete the table (as shown below).

<table>
<thead>
<tr>
<th></th>
<th><em>Crohn’s disease</em></th>
<th><em>Ulcerative Colitis</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 2 shows some of the key features of two medical problems.

<table>
<thead>
<tr>
<th>Site</th>
<th>Pathology</th>
<th>Symptoms</th>
<th>Signs</th>
<th>Complications</th>
</tr>
</thead>
</table>

**Research articles (RAs)**

We used structures like the one shown in Table 3 below, which summarises the main parts of a research article, with the aim of detecting, through the reading of an authentic RA, the most commonly used headings, or identifying and ordering the four subheadings of an abstract by explaining which features of the text have helped them to identify the parts. Other tasks relating to RAs are as follows: I often invited my students (a) to consider and decide whether the title of the article is indicative or informative and give their reasons, (b) to analyse the Abstract and state if it is a conventional or a structured abstract; (c) to Identify WHY the study was carried out – WHAT was done – HOW it was done – Conclusion, and (d) to underline any examples found in their abstract and or in the RA of: (a) vocabulary of classical and Germanic origin; (b) prefixes and suffixes; (c) monoreferentiality; (d) acronyms and abbreviations; (e) stacked noun phrases; (f) eponyms; (g) nominalisation; (f) sentence simplicity; (h) length of sentence (i) tense use and (l) passive voice.

<table>
<thead>
<tr>
<th>Title</th>
<th>Number of authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abstract</td>
<td>Overview or summary of the article (100-50 words)</td>
</tr>
<tr>
<td>Introduction</td>
<td>Specific problem under study</td>
</tr>
<tr>
<td>Methods</td>
<td>Study Design</td>
</tr>
</tbody>
</table>

10 This analysis of the lexical morpho-syntactic and textual features of EMP follows the framework used by Gotti (1991; 2003) to investigate specialised discourse.
Table 3 shows the main parts of an RA (adapted from Gehlbach 2002, 6).

Medical Reports

We used to read some medical reports in Italian and in English. For instance for History and Physical (H&P) reports, I invited my students to turn a sample report – by considering some important guidelines – into a spoken presentation of the case, or to find a corresponding Italian report and detect the common characteristics and differences between the Italian and American documents. As far as the Discharge Summary is concerned, we completed a translation task based on a standard format. Similar exercises of translation, contrastive analysis and ordering the steps of a surgical procedure, for example, were also performed for other types of report, such as the Consultation Report, Radiology Report, Pathology Report and Operative Report. Once we finished analysing all the medical reports, I invited my students to match sentences taken from different reports to the correct report type.

The Popularisation of Medical Discourse: the Case of PILs

Notwithstanding the linguistic redrafting techniques employed in the process of popularisation have not far attracted much research (Gotti 2003) we used to read Patient Information Leaflets (PILs), the only information many people have about their medicines, to identify any textual differences across languages and cultures – whether qualitative or quantitave – that deserved attention. By carrying out simple exercises such as filling in the gaps, identification of subheadings and/or of Italian expressions in the English PIL, or by detecting dis/similarities between the same PIL written in English and in Italian, my students and I become aware that PILs in English and Italian belong to two closely related subgenres rather than to one single genre – as already stated by Cacchiani (2006).
Specifically, dissimilarities in the type and amount of information rendered with rather technical terminology imply that Italian and British PILs mirror different cultural contexts: the Italian PIL follows a tradition of formal style. On the contrary, the English PIL seems to reflect a cultural tradition of simple and plain English, being highly readable and user-friendly thanks to the use of everyday vocabulary, for instance.

However, we also ascertained through the analysis of British and Italian PILs that new and revised Italian PILs are now following all the steps to achieve the clarity and more interactive character of British PILs, due to the fact that over-the-counter drugs can be sold in Italian shops without medical prescription.

**Producing Spoken EMP**

An EMP course also needs to focus on enhancing students’ communicative skills such as making conversations among patients, doctors and nurses. That is the reason why I also took into great consideration the improvement of my students’ listening and speaking skills. To this end we used to listen to the online videos created by *The New England Journal of Medicine* and I planned different tasks according to the topic that the video had presented, which could be preparing a medical interview or a doctor/nurse-patient dialogue.

Attention was also paid to talks\(^{11}\) in a variety of medical settings, with balanced numbers of men and women as interactants, and with ethnographic observation to the way talk takes place – setting, topic, role differences, and consequential power relations. These data hold an unusual degree of interest for EMP teachers, who – with a view of preparing EMP courses – will use these discourse events by dividing them into different modules according to their functions, and for the students who will acquire the communication tasks that await them as physicians, nurses and health professionals from the very outset of their professional work.

**Conclusion**

This paper was designed to present a range of possible teaching strategies that can be used in the classroom to accomplish both course content goals and active engagement on the part of students. The suggested design for an ESP course for medical students gradually trains them to interpret and use words and terms appropriately, to formulate grammatically correct statements, to become confident to understand medical-related documents, to develop a fuller understanding of the

\(^{11}\) We watched videos on YouTube about academic interactions (e.g. lectures at conferences), interactions with other medical professionals (e.g. answering phone calls), and with patients (e.g. taking a history).
linguistic and cultural role of different medical text genres in their field of study, and to be able to produce well formed and appropriate written and spoken language in order to effectively interact with patients, colleagues, and supervisors.

I am deeply indebted to ESP-oriented and data-driven learning studies, whose insightful theoretical and practical works have inspired and guided me in drawing up my research works and in devising the didactic strategies so far presented, and the activities which my students enjoy and which contribute to putting the final but not definite piece in the puzzle of understanding medical language.

However, in the quest for EMP competence/proficiency, the role of specialised (first- and second-) language knowledge and subject matter understanding should be predictors not only of successful specialised communication for future health professionals, but also of high-quality translations for EMP translators\textsuperscript{12}.

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\textsuperscript{12} As a lecturer of the module of scientific translation in a \textit{TRANSLA.T.E} masters course organised at the University of Bari, I also used these didactic strategies with the aim of providing the participants – well-trained in both the theory and practice of the language of medicine – with a solid understanding of the specialised subject matter through direct contact with the typical text genres of this scientific field, so that they make fewer errors resulting from lack of subject comprehension.
References


Internet resources

http://www.merckmanuals.com/

http://www.natcorp.ox.ac.uk/