

## **Digital Technologies in Domain-Specific Language Learning: Gains and Challenges**

**Izaskun Elorza**

iea@usal.es

University of Salamanca

### **Book review:**

**Elena Bárcena, Timothy Read & Jorge Arús (2014). Languages for Specific Purposes in the Digital Era. Cham, Heidelberg, New York, Dordrecht, London: Springer.**

Domain-specific language learning, i.e. what Cortese and Riley have described as the learning of foreign languages “across the academic, the professional, the technical and the occupational genres in any given area of knowledge and practice” (Cortese & Riley 2002: 12-13), has received growing attention from language teachers since the late 1960s (Hutchinson & Waters 1987). At that time, learners started to be placed for the first time at the centre of language teaching planning and, consequently, their needs started to guide the aims and objectives of the instruction and to structure the course planning process. Domain-specific language learning, or the learning of “Language for Specific Purposes” or “LSP”, as it is also termed, is characterized by the great heterogeneity it involves in the variety of teaching and learning situations that it may cover. Even so, there is agreement in considering that its most typical features often include the teaching of a foreign language to professional adult learners, as well as the presence of some kind of time constraints for course development due to restrictions in the time that those learners have available for their learning. In such teaching situations, most of teachers’ efforts along these decades have focussed on how to enhance teaching so that their learners can have ‘enriched’ learning contents, materials and resources which may help them overcome such restrictive learning conditions. Although half a century later some of the intrinsic difficulties to cope with this still remain unsolved, it is rewarding to see that some have been overcome effectively or are on the way to do so. As Bárcena, Read and Arús show in the volume reviewed, this has been greatly due to the key role of digital technologies in the process. Digital technologies have been of paramount importance for a number of reasons. Firstly, they have been responsible for providing technological advances which have allowed the teaching and learning of languages with much greater flexibility, in terms of the learners’ possibilities for mobility, independence and autonomy. In addition, they have also allowed teachers to develop contents with a more powerful capacity to provide class input in a much more sophisticated multimodal fashion, and finally they have also made possible to construct implemented models of the language to be learned, thanks mainly to the use of corpus methodology to inform and attest the input provided.

The editors of *Languages for Specific Purposes in the Digital Era* represent a fruitful example of joint research work between linguistics (Elena Bárcena, UNED, and Jorge Arús, Universidad Complutense de Madrid) and computer science (Timothy Read, UNED), as the volume shows a promising interdisciplinary perspective on the theme covered. In order to present an up-to-date state of the art in how digital technologies have contributed to make LSP more efficient in coping with teaching and learning diversity, the editors present a collection of sixteen contributions, authored by more than thirty scholars specialized in different LSP aspects and in digital technologies applied to education. The contributions cover a whole gamut of perspectives on how LSP is benefitting from new technologies, ranging from Business English, Business Russian, Legal English, or Maritime English to specialized translation. However, readers will find that the findings can also be applied to other LSP teaching and learning contexts as well, as the emphasis is placed on how digital technologies can be applied to professional language contexts. As Arnò-Maciá suggests in the first chapter of the volume (pp. 6-7), the relation between IT and LSP can be seen in five areas, namely the analysis of specialized discourse, online communication, computer-assisted language learning (CALL), online learning and learner autonomy. Apart from online communication, which is related to effective use of the language in professional domains rather than to the LSP teaching and learning contexts, and which has received attention by other scholars (e.g. Cortese & Riley 2002), the other four areas are pervasive along the volume.

On the other hand, and in order to present a systematic account of the applicability of digital technologies to LSP teaching and learning, the contents of the volume revolve around four broad topics which have been arranged in four sections: (1) General issues about learning languages with computers; (2) Computer-Assisted Experiences for the Development of Language Competences and Skills; (3) Corpus-Based Approaches to/Applications for Teaching and Processing Languages, and (4) Processing Natural Languages.

The first section is devoted, as its title suggests, to introducing and contextualizing the situation of teaching and learning languages in specialized domains in present days from the angle of the use of current educational technologies. In this section readers will find four chapters which present mutually-complementary perspectives on LSP. In Chapter 1 ("Information technology and languages for specific purposes in the EHEA: Options and challenges for the knowledge society"), Arnò-Maciá focuses on the roles of teachers and learners, authenticity and specificity of materials, genre, and skills development, taking into account the current scenario in higher education after the European reform of university education (the so-called Bologna Process). Chapter 2 is entitled "Fostering learner autonomy in technology-enhanced ESP courses" and here Gimeno Sanz deals with a range of technology-enhanced language learning initiatives and their pedagogical implications with the general purpose of showing how technology can enhance language learners' autonomy. She concludes that "technology in education is best exploited when an environment favouring student participation is developed" (p. 43) and thus that the classroom should be seen as an environment where scaffolding could be fostered, particularly by means of ICTs. After this, readers will find that Chapter 3 ("The I-AGENT Project: Blended learning proposal for Professional English integrating an AI extended version of Moodle with classroom work for the practice of oral skills") presents one example of how ICTs can foster scaffolding in blended learning. Martín-Monje and Talaván have developed a project on the use of Moodle for developing oral skills, a traditionally neglected area in language blended learning, which integrates a module based on Artificial Intelligence for providing adaptive online scaffolding to learners, in such a way that the course contents are provided to each learner in relation to their progress. The relevance of this project is

clear in relation to fostering learners' autonomy, as is the case of the project presented in Chapter 4 ("Student assessment in online language learning materials developed and delivered through the InGenio System"), where Sevilla-Pavón, Martínez-Sáez and De Siqueira Rocha discuss how the system developed by them can contribute to assess learners' basic language skills at the level of First Certificate of English (Common European Framework of Reference for Languages), either by self-assessment or by tutor-based assessment, at learner's choice.

The second section deals with the development of language competences and skills relying on computer-assisted learning. The first three contributions focus on the benefits of online dictionaries and glossary compilation in Moodle for the learning of specialized vocabulary, whereas the last one discusses the advantages of wiki production for improving learners' linguistic competence collaboratively. In Chapter 5 ("Internet dictionaries for teaching and learning Business English in Spanish universities") Fuertes-Olivera delves into the teaching of terminology from a lexical approach, claiming that internet specialized dictionaries can be potentially efficient for helping learners understand the subject field of business in tertiary education because "they can be used for solving our students' both cognitive and communicative needs [and because] they favour interconnectivity through different procedures (blogs, e-mails; related searches, etc.) thus encouraging the use of language" (p. 105). In Chapter 6 ("Moodle glossary tasks for teaching Legal English"), Breeze presents two collaborative writing tasks by means of Moodle glossary, which are part of a course on Legal English at the university, describing the procedures followed as well as the outcomes obtained, and concluding that this procedure represents a more active approach to learning which "fits well with the type of project work envisaged in the Bologna framework for undergraduate degrees" (p. 127). Along the same line, in Chapter 7 ("Promoting specialised vocabulary learning through computer-assisted instruction"), Perea-Barberá and Bocanegra-Valle deal with the learning of specialized vocabulary of Maritime English through CALL, presenting a project which aimed at compiling a glossary of specialized terms collaboratively through Moodle, and claiming that the use of ICTs can foster collaborative work and at the same time raise learners' awareness of self-direction. To end up this section, Chapter 8 ("A practical application of wikis for learning Business English as a Second Language"), by Rodríguez Arancón and Calle-Martínez, reports on an innovation project developed with first year students of the Degree in Economics which is based on their collaborative use of this content management system to reinforce their communicative competence in English.

The third section revolves around the application of corpus-based methodology both for teaching as well as for processing specialized languages. This methodology is based on a concept of 'corpus' that is understood, as Hunston (2002:2) defines, as a "collection of texts (or part of text) that are stored and accessed electronically [and that] is designed for some linguistic purpose [which] determines the selection of texts". Extensive work has been done in this recent area of linguistics in the educational domain, exploring the application of corpus methodology to teaching and learning languages and also translation (e.g. Sinclair 2004; Hidalgo et al. 2007) and readers will find in this section four examples of this. In Chapter 9 ("A genre-based approach to the teaching of Legal and Business English: The GENTT specialized corpus in the LSP classroom"), Boja Albi, Juste Vidal, Ordóñez López and Conde present a project developed collaboratively by a team of lecturers of LSP and of specialized translation focusing on the compilation of a monitor corpus of specialized genres of law, medicine and technology in English, Spanish, French, German and Catalan, which contained more than 1,000 texts (over 3 million tokens) at the time of publication. The project also

aimed to develop corpus-based activities for teaching LSP, some of which are also described and discussed. Another practical application is presented in Chapter 10, this time to teach Business Russian (“Innovative methods for LSP teaching: How we use corpora to teach Business Russian”). Wilson, Sharoff, Stephenson and Hartley show the applicability of corpus-based methodology even for languages which have traditionally received less attention in applied linguistics, and therefore have a lack of printed materials, as well as the benefits of this methodology by facilitating and enhancing learning via the use of word frequency lists and other tools. As the authors claim, “a corpus-based approach can meet the needs of the individual language learner” (p. 219) so, in this sense, this methodology can be applied to foster language autonomy as well. Chapter 11 (“Automatic specialized vs non-specialized text differentiation: The usability of grammatical features in a Latin multilingual context”) presents a lexicographical approach to the application of corpora. Cabré, da Cunha, SanJuan, Torres-Moreno and Vivaldi aim to answer the question whether it is possible to find specific grammatical (in addition to lexical) features in text in Latin languages which allow them to distinguish between specialized and non-specialized texts. The answer is given by means of a tool developed by them. The application of this tool is illustrated by reporting two experiments. Apart from its value for distinguishing between specialized and non-specialized texts (e.g. for automatic compilation of LSP corpora), the tool can also be applied to the areas of terminology and natural language processing. The last chapter in this section (“Exploring the potential of corpus use in translation training: New approaches for incorporating software in Danish translation course design”), by Laursen and Arinas Pellón, reports on an introductory course in financial translation at Aarhus School of Business where learners are trained in the exploitation of comparable corpora and concordancing software (AntConc) with the aim of helping them identify genre differences, extract terminology, compare the use of terminology in Danish and Spanish, and assess translation quality. The authors’ ultimate educational goal is to enhance learners’ autonomy in the field of specialized translation.

Natural language processing is the topic chosen for the fourth and last section of the volume. Faber, León-Araúz and Reimerink present in Chapter 13 (“Representing environmental knowledge in EcoLexicon”) a multilingual terminological knowledge base on the environment, which contains 3,527 concepts and 18,596 terms in 7 languages (Dutch, English, French, German, Greek, Russian, and Spanish), and which can be used for the purpose of text comprehension or also text generation. The domain ontology is described, as well as its conceptual relations and networks, and several examples illustrate how the information is presented to the end user in a user-friendly fashion. Under the title “New approaches to audiovisual translation: The usefulness of corpus-based studies for the teaching of dubbing and subtitling”, Rica Peromingo, Albarrán Martín and García Rianza present in Chapter 14 a methodological approach which, relying on the potential of corpus exploitation for supporting decisions when dubbing and subtitling, blends audiovisual translation and corpus methodologies to present a potentially more powerful approach to audiovisual translation training. Chapter 15 (“The pragmatic level of OntoLingAnnot’s ontologies and their use in pragmatic annotation for language teaching”), by Pareja-Lora, describes in detail the pragmatic level of the linguistic annotation framework developed by the author. This pragmatic level is claimed to be “by far, more comprehensive, global, detailed and general than any of the main approaches found in the literature” (p. 340), as it formalizes their different pragmatic units, features and relationships. This pragmatic level contains modules with pragmatic units, attributes, values, relations and concepts (409 pragmatic terms in total). Pareja-Lora highlights that the main advantage of the model is that it is scalable, extensible, interoperable, standard compliant and highly (re)usable, and hence the model has a great potential for a variety of applications.

Finally, the volume concludes with an afterword ("Reflections on the future of technology-mediated LSP research and education") in which the editors discuss their views on the future development and applications of educational technologies to LSP, both mentioning the areas covered by the different contributors, as well as other areas not present in the volume but that have recently gained attention and with clear applicability to LSP, such as the Web 2.0, MOOCs and other open educational resources, or mobile learning, to name but a few.

In a nutshell, this volume offers a thorough and representative variety of update applications of digital educational resources to LSP and, therefore, it constitutes a useful resource for teachers and researchers in the different areas of specialized languages, as well as in other linguistic domains, such as lexicographers or terminologists. Readers with an interest in the state-of-the-art of digital education in the area of language learning and processing will also find the volume of great interest.

## References

- Cortese, G. & Riley, P. (eds) (2002). *Domain-Specific English: Textual Practices across Communities and Classrooms*. Bern: Peter Lang.
- European Science Foundation (2014). *Media in Europe: New Questions for Research and Policy*. Retrieved from <http://www.esf.org/publications/forward-looks.html>.
- Hidalgo, E., Quereda, L. & Santana, J. (eds) (2007). *Corpora in the Foreign Language Classroom*. Amsterdam: Rodopi.
- Hunston, S. (2002). *Corpora in Applied Linguistics*. Cambridge: Cambridge University Press.
- Hutchinson, T. & Waters, A. (1987). *English for Specific Purposes: A Learning-Centred Approach*. Cambridge: Cambridge University Press.

## Recommended citation

Elorza, I. (2016). Digital Technologies in Domain-Specific Language Learning: Gains and Challenges In: *Digital Education Review*, 29, 312-316 [Accessed: dd/mm/yyyy]  
<http://greav.ub.edu/der>

## Copyright

The texts published in Digital Education Review are under a license Attribution- Noncommercial-No Derivative Works 2,5 Spain, of Creative Commons. All the conditions of use in:  
[http://creativecommons.org/licenses/by-nc-nd/2.5/es/deed.en\\_US](http://creativecommons.org/licenses/by-nc-nd/2.5/es/deed.en_US)

In order to mention the works, you must give credit to the authors and to this Journal. Also, Digital Education Review does not accept any responsibility for the points of view and statements made by the authors in their work.

## Subscribe & Contact DER

In order to subscribe to DER, please fill the form at <http://greav.ub.edu/der>