

1 Introduction to new developments in ESP teaching and learning research

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In introducing the studies in this collective volume on research in teaching and learning English for Specific Purposes (ESP), we begin by considering the current context of language education in European universities, then examine key terms and concepts in our own vision of ESP didactics, before previewing the chapters selected for inclusion in the present volume. The book is divided into three sections, beginning with groundwork related to needs analysis and course design in disciplines as diverse as dentistry, musicology, and technical science, continuing with a closer look at particular ESP challenges related to lexico-grammar or genre, and in the final chapters moving on to innovative practice such as exploiting specialised corpora or television drama in the ESP classroom.

1. Background to ESP research

The present volume is one outcome of recent developments in a relatively new field of applied linguistics inquiry, at least as far as traditional European tertiary language education is concerned. In many such contexts, the main approach to language learning and teaching has historically involved cultural studies, particularly the literature, but also the social, economic, and political history of countries where the target language is spoken, generally referred to as Modern Foreign Language (MFL) studies. In the MFL tradition, research and teaching are closely intertwined, with literary scholars treating language and culture as an inseparable whole in both lecture theatres and scholarly journals.

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In this view, Language for Specific Purposes (LSP) is treated as a pedagogical concern, and one which can be met by changing teaching materials rather than teaching methods. The practical language needs of doctors, lawyers, or engineers, to name but these, are thus generally dealt with by instructors with MFL training, who replace literary texts relating to the target language culture with materials focussing on medical, legal, or engineering topics. More recently, some scholars involved in LSP teaching have also sought to pursue research here too, and the MFL background of these authors has naturally led them to focus on discourse analytic approaches to LSP. This is especially true in the case of ESP, defined as “a ‘variety of English’ that can be observed in a given perimeter of society, delineated by professional or disciplinary boundaries” (Saber, 2016, p. 2). Thus, text and discourse analysis have historically dominated ESP research (Hewings, 2002; Paltridge & Starfield, 2011), perhaps particularly in continental European work, where this domain-centered approach is made even more explicit in a concept termed “Specialised Varieties of English (SVE)” (Resche, 2015, p. 215).

In contrast, another tradition has developed with its roots firmly in teacher and learner needs in ESP. Interestingly, a good deal of the early work in notional-functional and communicative approaches to language teaching, which paved the way for today’s Common European Framework of Reference for languages (CEFR), were motivated by ESP needs (Munby, 1978; Wilkins, 1972). Many have argued that this practical orientation, which characterises much applied research in ESP teaching and learning, has affected the academic standing of research in this “less glamorous” area (Hyland, 2006, p. 34), and ongoing tensions between practitioners and researchers remain a challenge. However, the time seems ripe to revisit the link between research, teaching, and learning in ESP contexts. In many European countries, we are witnessing a renewal of interest in teaching and learning of English which is tied to wider processes in the internationalisation of research and English as a global language, leading to more English Medium Instruction (EMI) and greater attention to English as a Lingua Franca (ELF). At the same time, increased use of technology in everyday and professional spheres is fuelling interest in Computer-Assisted Language Learning (CALL). Against this backdrop, a

number of epistemological and methodological concerns in ESP have come to the fore (Sarré & Whyte, 2016).

2. Key terms and concepts in ESP didactics

Based on Petit's seminal work on theory-building in ESP leading to his 2002 representation, we have suggested the following definition of our field:

“the branch of English language studies which concerns the language, discourse, and culture of English-language professional communities and specialised groups, as well as the learning and teaching of this object from a didactic perspective” (Sarré & Whyte, 2016, p. 150).

The multiple perspectives on ESP research mentioned in this definition – linguistic, cultural, discourse, and didactic – may suggest a “highly fragmented” field of research (Saber, 2016, p. 3). Yet these different aspects are complementary and can be viewed as dimensions of a “specific purpose language ability” (Douglas, 2001, p. 182), combining knowledge related to both language and content. Specific purpose language ability can be seen as a professional macro-skill comprising knowledge and competencies related to disciplinary, academic, or professional domains, and to particular modes of communication and relationships typical of each (Braud, Millot, Sarré, & Wozniak, 2017, pp. 37-38).

A key distinction in ESP teaching/learning research is between **pedagogy** and **didactics**. In previous work we have shown that, in continental Europe, “didactics is knowledge-oriented, a science which aims to understand how teaching leads to learning” (Sarré & Whyte, 2016, p. 142). This term is commonly used in research which is published in the national languages of mainland European countries, and which involves theorisation and distance from particular teaching contexts. Pedagogy, on the other hand, “is practice-oriented, concerned more with applied aspects of language teaching”, best seen as “an applied component of didactics” (Sarré & Whyte, 2016, p. 142). This contrast is shown in Table 1.

Table 1. Didactics and pedagogy (from Sarré & Whyte, 2016)

Didactics	Pedagogy
<ul style="list-style-type: none"> • knowledge-oriented • a distancing and theorising process • main objective: the analysis of how teaching leads to learning • draws on various contributive sciences • covers both SLA and foreign language education 	<ul style="list-style-type: none"> • practice-oriented • a practical process • main focus: teaching practices and education • draws on didactic research = an applied component of didactics • covers actors, curricula, content, context, and objectives

This distinction does not, however, hold in English-speaking research cultures, where only pedagogy is commonly used and the concept of didactics – covered within the overlapping fields of applied linguistics and Second Language Acquisition (SLA) research – is not, with important consequences for our field.

As “the general field of learning a non-primary language” (Gass, 1995, p. 3), SLA has provided the main theoretical foundation for language teaching and learning research in the English-speaking world since at least the early 1990’s, both in the classroom (instructed SLA) and outside (naturalistic SLA). Indeed, the focus on learning in isolation from teaching allowed some researchers to sever all links with pedagogy as part of an endeavour to establish SLA as “an academic discipline in its own right” (Bygate, 2005, p. 568). In contrast, applied linguistics covers a broader interest in “language issues in any kind of real-world problem” (Bygate, 2005, p. 569) and involves “the theoretical and empirical investigation of real-world problems in which language is a central issue” (Brumfit, 1995, p. 27), or even more narrowly, “the pragmatically motivated study of language, where the term ‘pragmatic’ refers to the intention to address and not merely describe the real-world problems” (Bygate, 2005, p. 571). This principle of applicability links research to practice by viewing pedagogy as “an applied component of SLA” (Sarré & Whyte, 2016, p. 145), although the unilateral or unidirectional nature of this relationship has been contested. Arguing that SLA theory and other applied linguistics research has often failed to solve teaching problems, Widdowson (2017) suggests that:

“in applied linguistics we need to reverse the dependency order of this relationship and analyse the problem first. [...] What disciplinary constructs and findings are of use can only be determined by analysing the problem first”.

Instead of theory, or what he calls disciplinarity, being applied to real world issues, he claims real world issues should determine what type of disciplinarity is pertinent. [Bygate, Skehan, and Swain \(2001, p. 17\)](#) propose criteria to guide our choices concerning the focus, conceptualisation, and application of such research: it should meet the needs of language teachers, make sense to them, and produce results which they can use in their teaching. Here we have an agenda for an emerging academic discipline of ESP didactics drawing on:

- the numerous specificities of the field, identified across a multiplicity of ESP teaching and learning situations which call for a specific research framework ([Sarré & Whyte, 2016](#));
- bilateral and bidirectional interactions between pedagogical practice and didactic theory ([Sarré, 2017](#); [Sarré & Whyte, 2016](#); [Whyte, 2016](#)); and
- a rich European tradition of language didactics research within this wider definition of applied linguistics.

The necessary link between didactic research and real-world contexts is perhaps one we more naturally preserve when publishing in our national languages than when writing in English, so it is helpful that this book should arise from a seminar at an English-language conference, the European Society for the Study of English (ESSE) in Galway ([Milosevic, Molina, Sarré, & Whyte, 2016](#)).

3. Current volume

Our goal in producing this volume was thus to attempt to bridge gaps between research and practice by offering strong research-based contributions in a wide

range of ESP contexts. We have aimed to offer new theoretical and pedagogical insights for ESP practitioners and researchers alike, going beyond descriptions of ESP situations and/or programmes to involve sound research design and data analysis, anchored in previous ESP teaching and learning research. The nine papers in our collection cover a range of ESP domains: two in medicine (Birch-Bécaas & Hoskins; Franklin-Landi), two in technical science and engineering (Fries; Milosevic), two in social sciences (Johnson; Starkey-Perret, Belan, Lê Ngo, & Rialland), and three in humanities (Beaupoil-Hourdel, Josse, Kosmala, Masuga, & Morgenstern; Schug & Le Cor; Labetoulle). We present the studies in three subsections, beginning with needs analysis and course development, moving on to specific challenges in ESP teaching and learning, and concluding with some examples of innovative practice in our field.

3.1. Laying the groundwork: needs analysis, programme design, and course development

The papers in the first part of the collection address fundamental questions concerning the design of ESP activities and courses, such as learner needs and the design of courses and programmes. In contexts ranging from dental studies through to musicology and technical sciences, the studies report on action research undertaken to improve the quality of English courses offered to students in their various institutions. In each case, the authors are ESP practitioners confronted with particular difficulties and challenges which they have sought to address with reference to research in SLA, educational theory, and ESP research itself. The three papers highlight the importance of needs analysis, as well as the problems of trying to both identify and meet the multiple and often conflicting requirements of students, language instructors, lecturers in content areas, as well as institutions.

Milosevic designed a small pilot test of audiovisual resources for teaching English for technical sciences in Serbia, using an experimental/control design and measuring reading comprehension and translation of key terms. Her students preferred and performed at least as well with teaching materials using video rather than text alone, and the study seems to justify wider trials with

more teaching units and more controlled testing. **Labetoulle**'s research also started from needs analysis, particularly the challenges of a large, heterogeneous student population and a heavy workload for language instructors in musicology at a large French university. In her study, the adaptation of a Complex Dynamic Systems (CDS) framework from the perspective of didactics ergonomics (**Bertin, Gravé, & Nancy-Combes, 2010; Rivens-Mompean, 2013**) allowed practitioners to take a number of factors into account in the design and implementation of new ESP courses, though the chapter suggests it may be difficult if not impossible to satisfy all needs involved. In **Birch-Bécaas and Hoskins**' study of a final year dentistry course, the main focus is on the conception of an ESP task which met a number of demands from students, language instructors, and dentistry lecturers, as well as institutional assessment criteria. The study reports high levels of participant satisfaction achieved by integrating needs analysis, second language research, and both teacher and learner perspectives.

3.2. Building confidence: addressing particular difficulties

The second part of the collection takes a closer look at specific problems occurring in ESP teaching. **Schug and Le Cor** follow **Waninge (2015)** in a CDS approach to the complex question of learner motivation, tracking four individual students in four different ESP and non-ESP classes at different time scales (i.e. over three-hour class periods, and over three-month courses). Their findings suggest a great deal of individual variation, not all related to ESP. **Fries** reports on a pedagogical intervention concerning a particular aspect of lexico-grammar: compound nouns in engineering discourse, drawing on cognitive semantics (**Langacker, 1987**). Her analysis of learners' use of the target structure in a writing assignment and on presentation slides suggests little quantitative but a possible qualitative advantage for her experimental approach to teaching compound nouns via cognitive semantics. **Beupoil-Hourdel and colleagues** addressed the problem of supporting humanities students in reading scientific articles, drawing on classic work in script theory (**Schank & Abelson, 1977**) and more recent efforts to improve scientific communication using narrative techniques (**Luna, 2013; Olson, 2015**). The paper describes the creation of teaching materials based on devices such as narrative elements and the dramatic arc, and tests their efficacy

with measures of learner performance and attitude. These studies include close analysis of relatively large amounts of data, be these compound nouns in learner writing, classroom observations of learner engagement, or measures of reading proficiency, all with the aim of investigating the effect of ESP instruction.

3.3. Moving ahead: towards new practices

In the third and final section of our collection we look at new practices involving different approaches to materials design and pedagogical support for ESP learning. **Johnson** situates her study of ESP for social work at an Italian university in a wider context which shows how both the Bologna process and the more recent migrant crisis have had far-reaching effects. She advocates a holistic approach to ESP, drawing on corpus tools to constitute and exploit a specific monitor corpus for these students, using a range of tools to identify and raise awareness of patterns of native-speaker usage. **Franklin-Landi** follows a recent tradition in French higher education to exploit fictional representations of specific domains, such as medicine or law in ESP teaching. She charts student perspectives on the medical TV series *Grey's Anatomy* following classroom activities based on a video extract, highlighting advantages and risks in using such material as a pedagogical resource. The final paper in this section by **Starkey-Perret and colleagues** also examines the effects of a particular pedagogical intervention, this time drawing on **Schmidt's (1990)** notion of noticing to investigate the impact of focus on form activities prior to the main task. Students in this study were enrolled in a business English course and the authors compared frequency and accuracy of lexico-grammatical features in the production of students who chose to complete the pre-task activities with those who did not, as part of a wider research programme into the effectiveness of task-based language teaching with this population. The study was complicated by the high drop-out rate common in certain French undergraduate programmes, as well as the wide range of features included in the intervention. This third section of the volume reminds readers of the sheer variety and complexity of ESP contexts and the correspondingly broad spectrum of dimensions in need of attention, from needs analysis to pedagogical resources and teaching activities.

4. Conclusion

In our view, this collection of studies raises questions of relevance to the field of ESP teaching and learning research with reference to three main areas: (1) the balance of content and language aspects of ESP teaching; (2) factors related to ESP learners and second language learning; and (3) issues of research design and methodology. The debate about how best to coordinate the development of disciplinary knowledge and the linguistic means to express it is far from over, and several language practitioners in this volume offer suggestions in this respect. Birch-Bécaas and Hoskins note their difficulties as language instructors in drawing students' attention away from disciplinary information toward linguistic form, as well as their students' appreciation of content instructors' efforts to 'play the game' and use English to help create a natural context for language practice. Franklin-Landi voices a common concern among language instructors regarding their own legitimacy in a domain where they cannot claim content expertise, and sees specialised fiction as a kind of third space where errors committed by non-specialist writers and actors provide both motivation and resources for fruitful discussion in the target language.

Second, a number of chapters in this book address issues related to learners and language learning which are not specific to ESP. Many of the studies investigate attitudinal questions related to motivation and stress in the language classroom, and several also touch on problems of poor attendance and high drop-out rates. The complexity of these issues has led some to CDS as a suitable framework for accommodating a range of variables in a systematic manner (Labetoulle; Schug & Le Cor). Others have sought to gauge learner views of particular teaching and learning activities via questionnaires and interviews (Beauvoir-Hourdel et al.; Birch-Bécaas & Hoskins; Franklin-Landi; Milosevic) to support students in progressive approaches to new competencies, such as critical reading of research (Beauvoir-Hourdel et al., Birch-Bécaas & Hoskins), awareness-raising of specificities of genre (Johnson), or simply to anticipate absenteeism in research design (Starkey-Perret et al.).

Finally, the studies in this volume have highlighted a number of challenges inherent in classroom research at this level. A number of chapters reported on

research designs based on experimental and control groups and providing quantitative analysis of student performance (Milosevic; Fries; Starkey-Perret et al.). In each case it proved difficult to establish clear-cut statistically significant intergroup differences, once again highlighting the complex teaching and learning situations experienced by many ESP practitioner-researchers. We might expect the way forward to lie with interdisciplinary teams combining linguistic and statistical experience, controlling for more variables and perhaps also sharing instruments. It is no doubt important, too, to measure not only language accuracy but also complexity and fluency as essential components of communicative competence and indicators of interlanguage development.

In conclusion, the chapters in this collection remind us of the inseparable nature of pedagogy and didactics. While ‘researched pedagogy’ (Bygate, 2005; Bygate et al., 2001) might appear at first sight a contradiction in terms, we hope we have made the argument for both more research-informed practice and more practice-driven research. Research in ESP teaching and learning has often been criticised for a lack of theoretical underpinning, making findings difficult to generalise to new contexts (Sarré, 2017), or for lack of applicability to actual language teaching (Master, 2005; Widdowson, 2017). The present volume attempts to address these criticisms by building on previous research, reporting on a variety of contexts, and representing a range of theoretical frameworks and methods. Results are reported with an emphasis on applicability in order to strengthen links between didactics and pedagogy, and to suggest future directions likely to benefit practitioners and researchers alike. In this way, despite the inescapably specific contexts of our studies, and other limitations on their generalisability, this collection encapsulates current trends and new developments in ESP teaching and learning research in Europe and we hope makes a small but valuable contribution to the field of ESP didactics.

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