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Yasemin Kırkgöz
Kenan Dikilitaş *Editors*

# Key Issues in English for Specific Purposes in Higher Education

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*Editors*
Yasemin Kırkgöz
English Language Teaching,
Faculty of Education
Çukurova University
Sarıçam, Adana, Turkey

Kenan Dikilitaş
English Language Teaching,
Faculty of Education
Bahçeşehir University
Beşiktaş, İstanbul, Turkey

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# Contents

# Recent Developments in ESP/EAP/EMI Contexts

**Yasemin Kırkgöz and Kenan Dikilitaş**

**Abstract** ESP is a dynamic research discipline, underpinned by the fundamental question of how best to meet the needs of English learners, especially in our increasingly globalized and internationalized world. Since the early 1960s, ESP has become one of the most prominent areas of teaching in universities around the world. What began as a grass-roots solution to the need for vocationally-relevant English language education has evolved into a much broader field of research and application. Today, ESP plays a critical role globally evidenced by the massive growth of higher education institutions offering English-medium instruction (EMI), a conversation which must include the dichotomous approach of Content and Language Integrated Learning (CLIL). ESP has found its place as an essential waypoint in the foreign language learning continuum in EMI contexts. As students advance their knowledge in their fields of study, so must they continue to acquire the English to help them understand and articulate vocational concepts, thus giving prominence to ESP. Yet, as this volume argues, there is a significant gap between implementation and assuring quality of ESP offerings, stemming from teachers' own incompetence and the lack of materials for specific contexts, as well as a lack of opportunities for ESP teachers to develop professionally and personally. This chapter reflects upon the evolution of this field from its roots to its current context. Through chapter-by-chapter synopses, it also presents an overview of the volume's central premise that quality ESP instruction does and can exist.

**Keywords** English for specific purposes · English-medium instruction · ESP teacher development · ESP materials development · ESP curriculum

Y. Kırkgöz
English Language Teaching, Faculty of Education, Çukurova University, Sarıçam, Adana, Turkey
e-mail: ykirkgoz@cu.edu.tr

K. Dikilitaş (✉)
English Language Teaching, Faculty of Education, Bahçeşehir University, Beşiktaş, İstanbul, Turkey
e-mail: kenan.dikilitas@es.bau.edu.tr



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## 1 Introduction

> English for Specific Purposes (ESP) is an approach to language teaching that targets the current and/or future academic or occupational needs of learners, focuses on the language, skills, discourses, and genres required to address these needs, and assists learners in meeting these needs through general and/or discipline-specific teaching and learning methodologies. (Anthony 2015:2)

The field of English for Specific Purposes (ESP) emerged following the Second World War, when massive changes took place in scientific, technical, and economic activity. This was a new age of technology and commerce, which created a need for an international language. This role fell upon English, the world's *lingua franca of* science, technology and business. With emerging developments in technology and economics a new form of learner who had their own specific reasons and motives for learning English came to the fore. Subsequently, an oil crisis arose in the early 1970s, which caused Western funds and expertise to flow into oil-rich countries. English suddenly found itself a big business and a valuable commercial commodity.

This also created significant demand for teaching English tailored to the needs and demands of people. Traditionally, English teaching was focused on grammar, but this shift in demand gave rise to a new approach. The new aim was to define how language was used in realistic circumstances. "*Tell me what you need English for and I will tell you the English that you need*," became the guiding principle of ESP at that time (Hutchinson and Waters 1987). Moreover, the conversation now turned to the important differences between the English of technology and commerce and this made people consider the notion that language usage depended on the context. The first English for Science and Technology document, an article by C. L. Barber on the nature of Scientific English, was published in 1962, followed by a new field of research exploring the nature of varieties of English, which expanded into the late 1960s and early 1970s.

Along with this, developments in linguistics began revealing the ways in which language is utilized in real communication rather than defining formal features of language use. Acknowledgement grew that language varies from one situation to another. As a result, the prevailing attitude became one where the features of specific situations required identification and the learner's program of study needed to be based on these features, as it became obvious that there were important distinctions between English used in different fields.

Since the early 1960s, ESP has become one of the most prominent areas of teaching in universities around the world leading to the establishment of such ESP courses as English for Engineers, English for Aviation, and English for Advertising, to name just a few. Also, ESP has expanded to include other areas such as English for Academic Purposes (EAP), English for Occupational Purposes (EOP), and English for Vocational Purposes (EVP) (Paltridge and Starfield 2013).

ESP is a dynamic research discipline, underpinned by one fundamental question: how best to meet the needs of English learners, especially in our increasingly globalized and internationalized world. As highlighted by Räisänen and Fortanet-

Gómez (2008), the main priority of ESP is that "the English taught caters for the needs and learners in specific disciplines other than the arts and languages" (p. 12). This single question encompasses a host of related issues from designing ESP programs, to materials development to assessment.

ESP has undergone significant transformations over the years, influenced by changing trends in approaches and methodologies in English language teaching. Attempts to characterize specialized varieties of English have given birth to corpus-informed approaches to analyses of written and spoken language, and have thus helped identify learning objectives in ESP programmes (Boulton et al. 2012). At the same time, in related fields, developments in second language research, lesson study, and computer-assisted language learning, among others, offer new perspectives with respect to methodological and pedagogical concerns. Although innovative practices in ESP teaching are certainly numerous, there remains a shortage of relevant, published research, particularly studies with sound theoretical and methodological bases, which the present book aims to address.

More recently, the growing importance of English in higher education teaching and research, along with internationalization of higher education across the globe, has led to the emergence of a global phenomenon of English medium instruction (EMI) where the English language is used in non-native contexts to teach academic subjects (Doiz et al. 2013). As EMI implementation has become more and more prevalant, there appears to be a fast-moving worldwide shift, in non-anglophone countries, from English being taught as a foreign language (EFL) to English being the medium of instruction (EMI) for academic subjects such as science, geography and medicine (Dearden 2015). Content and Language Integrated Learning (CLIL), a largely secondary education counterpart of EMI (Räisänen and Fortanet- Gómez 2008; Aguilar and Munoz 2014) aims to teach content through English by integrating language and content, and contains each explicitly as learning objectives (Coyle et al. 2010).

The distinction between EAP, CLIL and EMI can best be conceptualized according to Airey (2016)'s continuum of approaches in higher education. At one extreme of the continuum are EAP courses with only language learning outcomes. The aim of EAP courses is to provide university level students with academic language learning such as the reading and speaking skills required to perform in an English-speaking academic context. In the 1980s, EAP emerged from the fringes of the ESP movement to become an important force in English language teaching (Hyland and Shaw 2016). At the other end of Airey's continuum are EMI courses with only content learning outcomes. CLIL courses are found somewhere between these two extremes, having both language and content learning outcomes.

CLIL is an educational approach where the learning of a non-language subject is combined with language learning (Airey 2016), and in the majority of cases the language is English. Barwell (2005) among others has provided definitions of CLIL that "language and content integration concerns the teaching and learning of both language and subject areas (e.g. science, mathematics) in the same classroom, at the same time" (p. 143). CLIL puts a dual emphasis on discipline-specific learning

outcomes along with language learning. This supposes that content and language are priorities with clearly specified goals (Aguilar 2015), and that both the content and English language are assessed. Methodology is accommodated to teach and evaluate language and content. To distinguish it from CLIL, the term EMI is used to describe "the type of context where content is the priority and where no assessment of students' English competence is made because no language learning outcomes are acknowledged" (Aguilar 2015, p. 4).

The following definition given by Graddol further clarifies the distinction between CLIL and EMI:

> CLIL is an approach to bilingual education in which both curriculum content — such as science or geography—and English are taught together. It differs from simple English-medium education in that the learner is not necessarily expected to have the English proficiency required to cope with the subject before beginning study. (Graddol 2006, p. 86)

Whereas CLIL has a clear objective of furthering both content and language as declared in its title, EMI does not (necessarily) have that objective (Dearden 2015). EMI courses have content-related learning outcomes in their syllabi, but no explicit English language related learning outcomes. Meaning is co-constructed through interactions, the integration of content and language occurs in EMI classes, irrespective of the explicit teaching aims (Smit and Dafouz 2012). EMI implies that content – which is given in English – is the priority. Some incidental language learning is expected due to exposure but without any specific language learning goals. Little accommodation can be done in terms of methodology, only to guarantee comprehension and understanding of content (Dearden 2015).

This distinction, therefore, highlights the major difference between CLIL and EMI, thus underscoring the need for ESP in the EMI context in particular. Whereas CLIL – as its name clearly suggests – integrates language learning into the content classroom, in sharp contrast, EMI to a large degree, *dis*-integrates language learning. That is, organizationally and culturally, language learning is often viewed as an activity that takes place prior to, and/or parallel to the delivery of academic content. This raises the major philosophical difference between these two approaches: the role of the content instructor – i.e. as content and language teacher or solely content. In this latter case, ESP therefore becomes the language course designed to strengthen the language that enables the learning of the content. It is a unique situation where the EMI content instructor views him or herself as a language teacher as well. ESP, it seems, fills that language void that CLIL is not missing.

Recently, ESP has attracted great interest within higher education in many countries as a result of increased pressure to deliver successful English education due to the globalization of both the economy and tertiary education. There is now a growing need for undergraduate students to develop their proficiency in ESP skills and knowledge in the increasingly globalized world. Lack of ESP development by learners is a determinant factor in the quality of subject matter learning, which is also closely related to the quality of the university graduates in the relevant sectors (Kırkgöz 2014). A critical link has been found between the shrinking economies of the developing countries and the degree of English proficiency among people

graduating from diverse university majors, so developing ESP teaching is one of the ways of strengthening international links and producing quality studies.

In higher education, students require improved English skills to not only study their specialized discipline, but also secure employment upon graduation. The growing interest and importance of English in higher education has led to an increased focus and critical evaluation of English programs at universities and other educational institutions. This changing landscape of English Education has also led to a growing pressure on teachers to foster students with strong skills not only in EAP, but also English for EOP and EVP. Consequently, the greater importance of English in higher education has resulted in increased pressure on English teachers to deliver effective instruction in their classes (Anthony 2015).

To this end, the quality of language learning process needs to be carefully ensured through efficient planning and implementation. However, it is also widely reported that ESP instruction in higher education is not at the desired level for a variety of reasons ranging from teachers' own incompetence and the lack of materials for specific contexts, as well as a lack of opportunities for ESP teachers to develop professionally and personally. There is a need for further development of ESP programs and ESP teachers as highlighted in many reports especially in developing countries, so this book aims to address theoretical and practical issues that are commonly experienced in disparate parts of the world. The present volume intends to address these key issues in ESP teaching and learning by bringing together current state-of-the art research at the intersection of the theoretical and practical dimensions of ESP. With the ambition of offering new theoretical and pedagogical insights for ESP practitioners and researchers alike, contributions go beyond descriptions of ESP programs to strong research-based studies in a wide range of ESP contexts. By drawing on international studies, the book aims to bring together diverse ESP practices and different aspects of relevant issues that relate to the development and administration of ESP programs, teachers and learners in a coherent fashion.

## 2 Short Summaries of the Chapters

This book has four strands including *Materials design and development in ESP, ESP Teacher Development, Curricular Issues in ESP,* and *ESP, CLIL and EMI*. These strands represent several emerging perspectives in the field of ESP. In Part I, for example, the four chapters contributed from various countries emphasize the need for materials designed for ESP targeting different language skills within sub-fields. Helen Başẗurkmen and Bocanegra Valle in chapter "Materials Design Processes, Beliefs and Practices of Experienced ESP Teachers in University Settings in Spain" highlight the processes in ESP materials design explicated through interviews with experienced ESP teachers who reveal their beliefs and explore their teaching practices. In asking teachers to describe successful materials, *Baştürkmen* and *Valle* identified three emerging processes used by the teachers: *identifying suitable source materials*, *deciding how to use authentic texts,* and *thinking of real-world tasks*.

These processes clearly indicate how teachers view the decision-making process of ESP instruction. The researchers also revealed the stated principles and implicit beliefs reported by the participants, which helps present a teacher perspective ESP materials development. In chapter "Innovative ESP Teaching Practices and Materials Development", Fredricka Stoller and Marin Robinson not only propose but also justify specific scaffolding instruction, with the aim of increasing discipline literacy of chemistry students through engagement with ESP language skills. The chapter reveals the learning challenges that ESP students experience in developing productive written skills and describes two approaches – *read and notice*, and *read, analyze and write*, which integrate multiple language skills into ESP learning. Stoller and Robinson provide strategies that could be potentially used in various academic disciplines. In chapter "Using a Corpus-Based Approach to Select Medical Vocabulary for an ESP Course: The Case for High-Frequency Vocabulary", Betsy Quero and Averil Coxhead conduct a corpus-driven research with a view to identifying and incorporating medical vocabulary in ESP reading courses. Quero and Coxhead highlight four vocabulary-related considerations by Nation (2008) including planning, strategy training, testing and explicit teaching of vocabulary. The vocabulary sets extracted from various medical corpora are suggested for instruction, according to four strands proposed by Nation (2007). Quero and Coxhead argue that high-frequency lexis could facilitate learning as they increase the chances of repetitive encountering and provide contexts for deeper processing. Similarly, Hossein Farhady, Kobra Tavassoli and Fariba Irani examine EAP- and ESP-based corpora in order to identify grammatical structures. With its 150-million-word corpus, the study is characterized by its depth (size of corpus) and breadth (variety of disciplines). Farhady, Tavassoli and Fariba reveal a high level of similarity in the variety of commonly-used grammatical structures in EAP and ESP materials. This leads them to propose that the limited grammatical structures should be integrated into instructional materials, which teachers need to be aware of in order to promote effective strategies.

In Part II, chapters are concerned with ESP teacher development. Various perspectives and strategies are investigated in this part. Chapter "Lesson Study in Higher Education: A Collaborative Vehicle for Professional Learning and Practice Development of Teachers of English for Specific Purposes" by Julie Norton introduces lesson study as a collaborative professional development tool, which could be used within the ESP domain in England. Norton uses Desimone's five principles to draw upon key characteristics of ESP-oriented lesson study. Norton argues for holistic approaches – as opposed to acquisition of specific discrete competencies – which could support life-long learning from multiple perspectives with the ESP domain. In chapter "The Processes Behind RA Introduction Writing Among Turkish Arts and Science Scholars", the order of the authors should be as follows: Demey Yaylı and Suresh Canagarajah discuss how scholars at universities write research articles with specific reference to processes they allude to via self-reporting in interviews. Considering that these scholars are graduates of EAP, investigating their writing processes could provide implications for EAP programs in EMI-oriented higher education institutions. The authors provide an insider perspective on the instruction of academic writing with reference to the challenges and strategies of non-native English writers regarding publishing in international English medium

journals. Chapter "Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use", authored by Tuula Lehtonen, similarly, concerns itself with understanding the kind of language ESP graduates need and how they use language in their workplace following graduation. Lehtonen conducts this investigation as an example of practitioner research. Based on her observations, she argues that a life-long learning perspective should be followed in teacher development, which creates a liberating sense of engagement in developmental activities. In chapter "Expanding Possibilities for ESP Practitioners Through Interdisciplinary Team Teaching", Tim Stewart, focuses on and discusses the potential impact of interdisciplinary team-teaching among ESP practitioners. He introduces collaborative interdisciplinary team teaching and describes how this practice is implemented by highlighting the notions such as status, professionalism, and mutual respect, required for successful implementation of interdisciplinary teach teaching. Chapter "Perceptions of Students, Teachers and Graduates About Civil Aviation Cabin Services ESP Program: An Exploratory Study in Turkey", by Enisa Mede, Nergis Koparan and Derin Atay, investigates multi-layered perceptions for the ESP teachers, students and graduates to ensure triangulation of the impact of the civil airline cabin services ESP program delivered at their school. Mede, Koparan and Atay suggest that students' needs triangulated with those of actively working graduates should be central to curriculum development of such ESP programs. Their approach could ensure a realistic means to addressing the needs of the students at the curriculum development stage.

Part III includes chapters related to *Curricular Issues in ESP.* In chapter "Introducing Innovation into an ESP Program: Aviation English for Cadets", Mustafa Er and Yasemin Kırkgöz evaluate an ESP curriculum currently used for training potential combat pilots. Er and Kırkgöz reveal and discuss the challenges in the implementation of the curriculum, with a view to restructuring and developing new curriculum in the same context. This could set an example for curriculum designers in varying contexts. Er and Kırkgöz suggest a curriculum that prioritizes the needs of the institution and those trained in the program for a more effective set of outcomes. In chapter "From EFL to EMI: Hybrid Practices in English as a Medium of Instruction in Japanese Tertiary Contexts" Naoki Fujimoto-Adamson and John Adamson, similarly, discuss pedagogical issues required when transitioning from EFL-oriented language teaching to EMI-orientation in a Japanese context, where EMI is a government-mandated top-down practice. The resistance from implementers and the alignments tailored for the contextual realities are discussed at micro and macro levels, drawing on data collected from two different Japanese contexts. They argue for *hybridity* in practice, which involves L1 inclusion for accessing linguistic meaning through *translanguaging*. Chapter "Fostering Active Learner Engagement in ESP Classes" by Nemira Mačianskienė and lma Bijeikienė investigate how an ESP program designed to promote active learner engagement is implemented with a program evaluation design. They report on successful ESP practices in their university, with contextual evidence, highlighting active student participation as a facilitative factor in the implementation of ESP programs. They provide several implications for locally developing contexts, particularly in collaboration with the students to adjust instruction for maximum efficiency. In chapter

"Are We Really Teaching English for Specific Purposes, or Basic English Skills? The Cases of Turkey and Latvia", Servet Çelik, Anna Stavicka, & Indra Odina report on a comparative study that investigated instructor roles in multiple contexts by considering backgrounds, contextual experiences, and classroom instructions. Çelik, Stavicka, and Odina discuss a major difference between the ESP instructors in Turkey and Latvia. They report that the former externalizes the deficiencies and attributes failure to the system of education, whereas the latter follows a more constructive approach to understanding and overcoming challenges in their local contexts. In chapter "Listening Comprehension Strategies of EMI Students in Turkey", Adem Soruç, Asiye Dinler, and Carol Griffiths report on a study which deals with micro-linguistic abilities of ESP students particularly for listening comprehension strategies employed. They find critical results from the quantitative analysis with refence to gender, contexts, grades, classes and departments. These could provide valuable specific implications for ESP curriculum designers and instructors. Soruç, Dinler, and Griffiths also discuss several evidence-based suggestions and implications which could inform ESP researchers.

In Part IV, the chapters focus on *ESP, CLIL,* and *EMI,* perspectives from different countries. Concerned with the need for teacher development in ESP-related programs, chapter "ESP/EAP in University Programs in a Non-target Language Community – Issues and Challenges", contributed by John O'Dwyer and Hilal Atlı, discusses the issues and challenges encountered in these programs in a Turkish context. O'Dwyer and Atlı describe the state of such programs at higher education institutions stressing the need for training instructors who teach ESP and EAP courses in order to enhance the quality of instruction. O'Dwyer and Atlı conclude the chapter by drawing on the fact that EMI universities need to expand their resources including materials and professional development options for their instructors. Chapter "The C of Cognition in CLIL Teacher Education: Some Insights from Classroom Based Research", by Isabel Alonso-Belmonte and Maria Fernandez-Agüero, reports on foreign language CLIL teaching practices as perceived by teachers working at state bilingual schools. They reveal common practices and propose that teachers be provided with relevant training for learning teaching CLIL. They draw attention to the role of activation of prior knowledge through training lower order thinking skills, which, they argue, fosters language development and thinking skills. In chapter "The Changing Roles of EMI Academics and English Language Specialists", Julie Dearden provides research evidence to discuss assumptions regarding EMI contexts, such as student proficiency as a factor in success, and a shift from L1-based instruction to L2-based instruction. Dearden provides a detailed discussion related to sustaining that shift, describing the changes and requirements that would support this process. She suggests a developmental model that includes professional support for language specialists and academics as well as for EMI students. In the final chapter, Donald Staub argues that EMI universities should develop EAP quality assurance programs supported by an accreditation model, which provides a tool through which program stakeholders can assess the quality of their program, while also improving practice and assessment. He sees the use of external

models as a means to validate of local practices, which could result in higher quality and minimized internal challenges.

*Key Issues in English for Specific Purposes* aims to bring together the latest research-based studies in higher education from diverse contexts across the world, as well as exploring the future developments for the field. In this respect, the book makes an original contribution to the field in that it focuses on research studies, as opposed to mere theoretical arguments, general guidelines for course design, or program descriptions in ESP. Emphasizing teacher learning and teacher development in ESP is also a welcome angle.

The wide range of topics and multiple perspectives presented in these chapters have the potential to contribute to the development of ESP practices and theoretical underpinnings. The issues included ESP materials, ESP teachers' development particularly based on inquiry-based strategies, and topics that could inform curriculum designers and policy makers. The variety of context across Europe and beyond also contributes to the multiple perspectives as well as to the diversity of the experiences from different local contexts.

We hope that this collection on the key issues in ESP will serve as a source of inspiration to many ESP practitioners, teacher educators, MA and PhD students working in the context of higher education, policy-makers, ESP program coordinators, academic researchers, especially those interested in ESP research in the international contexts. Our desire is that the book is an interesting and enlightening read.

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# Part I
# Materials Design and Development in ESP

# Materials Design Processes, Beliefs and Practices of Experienced ESP Teachers in University Settings in Spain

**Helen Başt**ürkmen and Ana Bocanegra-Valle

**Abstract** This chapter focuses on English for specific purposes (ESP) teachers' materials design processes and their beliefs and practices about teaching and learning. It reports a case study of experienced ESP teachers in two Spanish university settings and draws on data from interviews collected as part of that study. In the interviews the teachers discussed samples of materials they had developed for their lessons and which they perceived to be particularly successful. They also responded to direct questions about their teaching principles. The interview data was examined for information on the processes the teachers highlighted in reporting the development of the materials and for the teachers' stated principles, or explicit beliefs, about teaching and learning. During the interviews, the teachers explained why they evaluated the sample materials as successful. These evaluations provided some insights into the teachers' implicit beliefs about teaching and learning ESP.

**Keywords** Experienced ESP teachers · Materials · Design processes · Beliefs · Principles · Teaching practices

## 1 Literature Review

There is a considerable body of research and literature in English for specific purposes (ESP) on linguistic description. This research has provided descriptions of how language is used in professions, workplaces and disciplines. A second body of literature concerns teaching and learning ESP. This has included a large body of

H. Başt**ürkmen (✉)**
Faculty of Arts, Department of Applied Language Studies and Linguistics, University of Auckland, Auckland, New Zealand
e-mail: h.basturkmen@auckland.ac.nz

A. Bocanegra-Valle
Department of English Philology, University of Cadiz, CASEM, Campus Universitario, Puerto Real (Cadiz), Spain
e-mail: ana.bocanegra@uca.es



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literature on learners' needs (Flowerdew 2013; Bocanegra-Valle 2016). Literature on teaching often concerns products for or products of teaching, such as proposals for curriculums, methodologies and materials. There has been little literature on ESP teachers, however. In fact, it has been argued that "the community that ESP professionals know least about is their own" (Belcher 2013). Many ESP teachers have direct involvement in designing courses and materials as published courses and materials tend not to be directly relevant to the needs of their specialised groups of learners. However, studies of how ESP teachers develop such materials have been scarce. This is surprising given the range of teaching roles that ESP practitioners tend to assume. They may be called on to "become researchers as well as teachers" (Hall 2013: 5537) as they often need to investigate learners' needs and specialist discourse. They are often involved in developing the kinds of in-house courses and materials that are characteristic of ESP teaching. ESP teachers thus often carry out multiple teaching functions, including "needs assessor, specialised syllabus designer, authentic materials developer and content-knowledgeable instructor" (Belcher 2006: 139). In discussion of future research in ESP, Paltridge and Starfield (2013) argue that there needs to be research to provide better understanding of learner and teacher factors that influence the teaching and learning of ESP. The present study, which examines teachers' beliefs and practices, aims to contribute to an understanding of teacher factors in ESP.

The ESP literature includes descriptions of materials and how they were evaluated – see for example, Trabelsi (2010) and Tsuda (2011). The literature also includes discussions of the important role ESP teachers play in developing materials – see for example, Barnard and Zemach (2003) and Bocanegra-Valle (2010). Accounts of how ESP teachers go about developing materials are limited, although see Hidalgo et al. (1995) and Baştürkmen (2010).

Johnson (2003) used think-aloud protocols to investigate the processes that groups of specialist and non-specialist (more and less experienced) materials designers (not ESP teachers) used when presented with a "materials design brief" (p. 28). The study found differences in the kinds of considerations that preoccupied the groups. The present study investigated the processes recalled when highly experienced ESP teachers discussed particular samples of the teaching material they had developed in an interview setting.

In recent years the topic of teacher cognition has drawn considerable research attention. The importance of understanding the cognitive bases of teaching has been acknowledged and a number of studies have sought to contribute to this understanding by means of exploring teachers' beliefs. It is understood that teacher thinking guides teachers' classroom actions and what teachers do reflects what they know and believe (Richards and Lockhart 1994). Also, the ideas teachers hold about language teaching and learning influence any number of classroom-related practices including choices for methodology, types of teaching and learning activities, the aims of instruction and how they interact with learners.

Teachers' beliefs have been described as "propositions that individuals regard as true and that have a strong affective component" (Graus and Coppen 2016: 573). It

has long been argued that beliefs act as a guide not only to teachers' thoughts but also to their behaviours (Borg 2001) and that beliefs motivate action and impact on decision-making (Isikoglu et al. 2009). However, the relationship between beliefs and practices is not one-directional. Beliefs may impact on practice but practice can impact on beliefs. For example, a decision that the teacher makes in designing the curriculum can be informed by the teacher's experiences of teaching a specific component of the curriculum in the past (MacDonald et al. 2001). Research has indicated the network of beliefs, assumptions and knowledge teachers have that is grounded in routine classroom practice (Woods 1996). Teachers' beliefs are thought to be partly experientially-based, or derived from their experiences of learning and teaching and partly theory-based, that is, derived from ideas in the literature, teacher education programmes, conferences and workshops.

Various terms have been used in the literature to refer to the cognitive bases of teachers' decision making, such as teachers' personal theories (Breen et al. 2001). Grotjahn (1991: 188) uses the term *teachers' subjective theories* to refer to "complex, cognitive structures that are highly individual, relatively stable, and relatively enduring, and that fulfil the task of explaining and predicting such human phenomena as action, reaction, thinking, emotion and perception." Borg (1998: 9) uses the term *teachers' pedagogical systems* to refer to "the cognitive bases of teachers' instructional decision-making (…) the stories of beliefs, knowledge, theories, assumptions and attitudes that play a significant role in shaping teachers' instructional decision." The present study uses the term *beliefs*, which is defined as statements teachers make about and evaluations of what should be done, what is preferable and what should be the case (Baştürkmen et al. 2004).

Published research into the beliefs of ESP teachers appears very limited. One study (Alexander 2012) investigated the beliefs of two teachers about teaching English for academic purposes (EAP) at low proficiency levels. The study elicited the teachers' views on the differences between general Communicative language teaching (CLT) and EAP contexts for low level learners and their experiences in piloting and evaluating a new course book. Statements elicited from the teachers were used to compile survey items to investigate teacher beliefs about teaching academic English to students with low levels of proficiency.

The literature makes a distinction between explicit and implicit beliefs. Teachers' explicit, or espoused, beliefs are those they are aware of having and which they articulate. Teachers also have implicit, or tacit beliefs, which they may not necessarily articulate but which can be inferred from their practices. Although it is relatively straightforward to investigate teachers' explicit beliefs by means of direct questions, it is less straightforward to investigate teachers' implicit beliefs. As implicit beliefs are only potentially conscious, introspective methods may be possible. Possibilities include stimulated recall (Basturkmen et al. 2004) and other introspective data collection methods, such as Grotjahn's (1991) suggestion of attempting to render implicit subjective theories' explicit by means of reconstruction through a consensus-in-dialogue between the teacher and the researcher.

## 2 The Study

The study reported in this chapter was part of a wider case study using in-depth interviews with 21 experienced ESP teachers working in two universities and across three campuses in Spain, one in Southern Spain and one in a major city in central Spain. In this context, both EAP and ESP courses are taught. EAP is taught across different levels of study and ESP is taught often in the final year(s) of undergraduate study in order to prepare students for their professional careers. The study was a collaborative research project involving this chapter authors: a researcher in Spain and a visiting researcher from New Zealand. The study involved two strands of enquiry, one concerned with understanding the teachers' perspectives on their professional development needs and one concerned with their beliefs and practices of teaching ESP. The first strand of the enquiry is reported in Bocanegra-Valle and Basturkmen forthcoming. This chapter reports the second strand of enquiry. It draws on evidence from a set of interview transcripts with 17 of the teachers. Table 1 provides background information about the teachers. Not all 21 transcripts have been included in the data set because some interviews did not lead to discussion on the topics as anticipated.

The interview protocol was emailed to the teachers prior to the interview. The teachers were asked to bring a sample of instructional material they had designed or adapted and which they evaluated positively – that is, they saw as having led to a particularly successful lesson. Appendix shows the prompts used as a springboard for discussion in the interviews. We engaged the teachers in dialogues, or discussions, of the sample material. These discussions served a dual purpose. They were a trigger to prompt the teachers to recall key materials development steps, or processes that stood out in their recollection of developing the material. They were also a means of exploring the teachers' tacit beliefs. The teachers told us of why they had developed such material and why they felt the material had led to successful

**Table 1** Teachers and branches of ESP

| Gender | Years of ESP teaching | Years of teaching a particular branch of ESP | Branches examples |
|---|---|---|---|
| 4 male & 13 female | 13–40 | 2–32 | EAP |
| | | | Writing for academic publication |
| | | | Industries: tourism, logistics & ports, wine industry |
| | | | Medicine, physiotherapy, nursing |
| | | | Business, marketing |
| | | | Electronics & computing |
| | | | Engineering: agricultural, aeronautical |
| | | | Naval architecture, ship-building & marine engineering |
| | | | Social studies, criminology |

teaching. In this way, the discussion provided a window onto the teachers' implicit criteria for what ESP teaching should be or should include.

Direct questions about the teachers' principles for teaching and learning were used to elicit their explicit beliefs. These prompts were used in a later part of the interview. The direct questions aimed to elicit the teachers' general, or abstract, principles. As the teachers had been given the interview protocol in advance they had time to consider the responses they would give. The principles elicited thus provided evidence of their explicit beliefs, the stated beliefs which they were aware of having.

The interviews were audio recorded and transcribed. For the analysis, each transcript was firstly read in its entirety to gain a general, global understanding of the content and the teacher's perspectives about ESP teaching. A second, close reading was carried out to identify specific details regarding the teachers' materials development processes and beliefs about teaching.

We would like to illustrate our approach with reference to part of the interview in which we discussed the sample of successful teaching material that Alvaro, one of the four male teacher participants, had brought to the interview. The material introduced "how to name different types of crime" for a vocabulary-focused lesson. In this part of the interview, Alvaro talked at length of how he endeavoured to increase his knowledge of field-specific (technical) vocabulary for his lesson on an English for Law Studies course. He described the "responsibility" he felt in general to learn technical words from the students' field of study and devise teaching materials around them. He recalled an early teaching experience in which a student asked for the English equivalent of a legal Spanish term but Alvaro could not answer the question as he neither knew the English translation of the term or even the legal concept it denoted. He told us that following the incident he "spent the whole weekend googling it (the term) in order to know what it meant." He also talked of his wish to develop materials in collaboration with a law lecturer so that the expert in Law could "explain the concepts." Researching technical words and the concepts they denote were the processes he recalled in particular when he looked back at how he had developed the ESP materials he had brought to the interview.

We recorded the principles each teacher stated in the later part of the interview. Identification of explicit, or stated beliefs, was relatively straightforward. Identification of implicit beliefs by nature is less straightforward and requires a more interpretive approach. Again we would like to illustrate our approach with reference to our interview with Alvaro. In the first part of the interview, Alvaro showed us the material he had developed, which focused on technical vocabulary. While discussing this material, he talked keenly of his wish to provide his students with "the opportunity to show the sound knowledge (they have) of laws" and of the knowledge they acquired in their law studies. He was pleased with the material because he felt it enabled students to display their technical knowledge of legal concepts. As he said, it gave his students the opportunity "to show off", for example to show that they knew the difference between "burglary and robbery". This discussion revealed that the teacher designed the material in the way he did in order to provide opportunities for his students to display their technical (subject) knowledge

through the medium of English. Alvaro did not state this idea as a principle in the later part of the interview (in the section when we asked the teachers about their principles for teaching). It was thus not one of his explicit, espoused beliefs. Rather it was a tacit belief that appeared to guide his practice.

While examining the transcripts we noticed the items *important* or *it is important to* as a preface when the teachers described why they had devised the material as they did (implicit beliefs). We noticed also the use of *should* or *I think we should* in references to the teachers' stated principles. Therefore, some computer-based word searches (search words: *important, should, have to*) were used to supplement the analysis. The excerpt below shows Alvaro's use of *should* and *have to* in talking about a principle for teaching.

> Alvaro: The first principle we *should* have in mind is the language is meant for speaking or communicating. … I mean we *have to* focus on speaking all the time in our classroom
> Interviewer 1: Because?
> Alvaro: Writing is secondary. It's a secondary form of representation, so I think the natural order of skills *should* be listening, speaking then reading and writing.

## 3 Findings and Discussion

Summaries and paraphrases of the ideas and information elicited in the interviews are shown in Tables 2, 3 and 4. The tables include some direct quotes, or expressions and articulations used by the teachers. These are in speech marks.

### *3.1 Materials Development Processes*

The focus of the sample materials and the material development processes highlighted by the teachers are shown in Table 2. As can be seen, many teachers (seven) brought in materials that focused on vocabulary related to the disciplinary or work-related area of the students. The teachers highlighted how they had investigated the vocabulary items to make sure that their materials accurately represented how the words were used in the disciplinary or professional contexts. Their investigations had included consultations with subject experts, such as colleagues in the disciplines or workplaces (Stoller and Robinson provide an account of interdisciplinary collaboration, see chapter "Innovative ESP Teaching Practices and Materials Development" in this volume), and checking how the words were used or what they denoted by searching on the internet or in textbooks. The teachers reported having gone to some lengths in these regards.

Many of the other teachers brought in samples of materials that focused on language skills, such as writing, speaking or integrated skills. The main processes that these teachers recalled were (1) identifying suitable source materials, (2) deciding how to use authentic texts and (3) thinking of real-world tasks. David, for example,

**Table 2** Processes of materials development highlighted by the teachers

| Teacher | Focus of the sample material brought to the interview | Material design processes |
|---|---|---|
| Alberto | Video (sourced from You Tube) on racism | Finding materials to spark genuine communication. Material was "so shocking that students started talking a lot" |
| Alvaro | Technical vocabulary | Researching technical vocabulary. Finding out about lexical forms and concepts they denote in field of study |
| Antonio | A multi-task worksheet for use with a video (about lives of prison inmates) | Spending a lot of time just searching for the video |
| Blanca | Writing a c.v. & interviews | No discussion |
| Claudia | Discourse features in a text (blended classroom/online instruction) | No discussion |
| Cristina | A reading text about the listening skill | No discussion |
| David | Integrated skills and technical vocabulary | Considering the kinds of topics, texts and tasks that students will find motivating. "I was really worried about which type of topics or contents and the variety of materials" |
| Esther | Technical vocabulary | I had to ask experts about technical terms especially when just starting teaching ESP. Basing materials on a book by a subject professor. "In the beginning I had to ask about everything. Now I know enough to be able to do it (label parts of a propeller and describe their functions) myself." |
| Eva | Creating a glossary of technical words | Drawing on her doctoral study. Getting ideas for the material from a study reported in research literature |
| Ines | Group-work on discussion (about selling a product) | Talking to colleagues. Drawing on past experiences of kinds of activities that motivated students |
| Laura | Technical vocabulary | Adapting activities and material to the "level of the students". Checking meaning of technical words on internet and textbooks. "I don't really design that much material, I usually adapt" |
| Lucia | Politeness in conversational exchanges | Sourcing ideas for activities from existing works (books on English for Tourism). "I just try to observe what other people do and do the best I can." |
| Mario | Integrated skills work | Devising materials at the "right level" for the students' in terms of their current level of content knowledge of their field. Drawing on introductory books as possible sources of authentic texts. Textbooks are "not too specialised for this level" (1st year students) |
| Monica | Writing a summary | Sourcing material from existing general materials and adapting them to the specific field (tourism sector) |
| Teresa | Writing abstracts of a research study | Trying to think of real-world tasks. Finding tasks relevant to the students' professional future |

(continued)

**Table 2** (continued)

| Teacher | Focus of the sample material brought to the interview | Material design processes |
|---|---|---|
| Victoria | Students develop a corpus and search for word collocations | Considering how the student likes working/learning (in this case, by using computers). Finding resources the students will find motivating |
| Yolanda | Preparing oral presentations following integrated skills work | Devising classroom activities tasks that are similar to real life activities. Using authentic materials. Devising tasks and activities based on the materials provided by the aircraft manufacturer. |

highlighted how he had spent time thinking about which topics and texts his learners would be most interested in. David and Ines had considered what kinds of learning activities to use. Laura highlighted how she had worked to adapt the authentic text she used to the level of her students and Teresa and Lucia told us how they had tried to think of tasks and activities.

## *3.2 Stated Principles*

Table 3 shows a synopsis of the teaching and learning principles expressed by the teachers. A number of the principles concerned views of the language learning process. Alvaro, for example, talked about the importance of a learning/teaching sequence that goes "from things we know" to new information. Eva felt particular language forms should be directly targeted in instruction and that learners' attention should be explicitly drawn to these forms and that there was not time for learners to acquire them over time through exposure. She argued that "incidental learning is too slow for ESP." Both Eva and Lucia referred to the importance of practice activities for learning, which according to Eva can transform knowledge about linguistic forms to "procedural" knowledge (the kind of knowledge that can be drawn on automatically in production). The importance of motivation was highlighted by others. Monica, Mario, Yolanda and Cristina expressed the view that learning occurs on condition that learners are motivated.

Some principles concerned the role of the learner, or what the learner should do. Learners should actively engage in learning, either by using/producing the language (Laura, Yolanda, Mario and Claudia) or by engaging mentally in class activities (Teresa). Some teachers expressed the view that it was of key importance that their students should become independent language learners (Esther, Monica, Victoria, Eva, Mario and Monica).

Some principles concerned the content of instruction, what should be taught. These included the importance of targeting language needs relating to the learners'

**Table 3** Explicit beliefs as evident in the teachers' responses to direct questions about their principles for teaching/learning

| Teacher | Principles |
|---|---|
| Alberto | Raising awareness of the ESP course aims and content so students understand what is taught and what they will be assessed on. |
| | Developing the core competencies' students will need for their future professional field, for example group-work competency. |
| Alvaro | Most time should be devoted to speaking for communication; writing is secondary. |
| | Using what students already know as a basis for teaching new material, "we should go from things we know to new." |
| Antonio | It is important to focus on developing comprehension skills. There "should be a big focus on comprehension." |
| | Finding texts at the right level for learners. There needs to be "easy" reading and listening. |
| Blanca | Adapting teaching (materials/lessons) to the learners' knowledge level. |
| | Selecting topics (for materials/lessons) relevant to the learners' professional futures. |
| Claudia | Although it is a monolingual setting, it is still important for teachers and students to "always" use English in the classroom. |
| | It is "important that they (students) have a clear idea" of the focus and reason for classroom activities. |
| Cristina | Students "have to be happy". They need to enjoy the lessons "doing something they really like" otherwise they "don't learn much." |
| | The teacher "has to start by making it (learning the language) easy." |
| David | Planning (of teaching). |
| | Reviewing lesson content. |
| | "I thinking planning is essential … (and) they (the students) have to go back and then see what I did two days ago … that's essential I think." |
| Esther | Using class time effectively. |
| | Understanding the students' approach to learning. |
| | Giving students tools for independent learning. |
| Eva | Focusing on form as a prelude to meaning-focused activities. "Incidental learning is too slow for ESP." |
| | Using skills practise so learners can make their knowledge of forms procedural. |
| | Raising learners' awareness of metacognitive learning strategies. |
| Ines | All activities must relate to the students' future professional lives. |
| | Integrating culture into language teaching. |
| Laura | Students need to participate by speaking because "English classes are not lectures" and "everybody has to contribute." |
| | Organising group work by proficiency levels in the class "I know everyone doesn't agree with that but that works." |
| | Students should have some basic knowledge of English before starting ESP classes. |
| Lucia | Minimising teacher talk. |
| | Speaking in English all the time. |
| | Important to get students to use what they have learnt (about language use and vocabulary) in speaking and listening in "real situations." |

(continued)

**Table 3** (continued)

| Teacher | Principles |
|---|---|
| Mario | Important to help students understand how important learning to communicate (in English) is. The teacher needs to motivate students to understand this. |
| | The teacher must "give students learning strategies to study by themselves." |
| Monica | Finding activities the students enjoy. If they are motivated, they learn more. "My main task is trying to motivate them." |
| | Teacher should make content "easy and understandable" for the learners (for example, provide many examples to illustrate). |
| | Students need to do some autonomous work (outside class) to apply what they have learnt. |
| Teresa | Vocabulary is the "main feature of ESP" so we (the teacher) "should sometimes translate these words" as learners "should not ignore these words." |
| | Using real-world materials – authentic materials or adapting them. |
| | Devising activities that get students to think and be creative "this is the only way to learn. They have to make an effort if you make them think." |
| Victoria | Teachers need to consider the progression for learning English during university, not just over a single course. |
| | Learners need to be self-sufficient. |
| Yolanda | Students should be motivated to "engage in" the lessons and practise the language. |
| | If you want to be motivated you need to use authentic materials, you have to use tasks that lead to real life. |
| | Teachers should not lead the lesson but be facilitators so "tell the student what to do and let them work." |

disciplinary or professional worlds (Ines, Alberto, Teresa and Yolanda), use of authentic texts and tasks (Teresa, Lucia, Ines, Blanca and Yolanda), language learning strategies (Esther, Monica, Victoria, Eva and Mario) and language forms (Eva). Whatever the content, it was important, some felt, for instruction to be geared to the learners' linguistic level (Blanca, Monica, Cristina and Antonio). Other teachers highlighted their role in the overall planning of instruction (Victoria, Esther, David and Victoria) and in ensuring learners were clearly informed of the aims of instruction and the rationale of teaching activities (Alberto and Claudia).

## *3.3 Implicit Beliefs*

A summary of the implicit beliefs that emerged through discussion of the sample materials is shown in Table 4. In some limited cases, there was an obvious correspondence between these and the perspectives the teachers stated in response to direct questions about their principles for teaching and learning – see, for example, the similar perspectives of Laura and Claudia.

Generally however, different perspectives emerged, which provided different, additional insights into ideas about teaching and learning that guided the teachers' practices.

**Table 4** Implicit beliefs: views of what should be the case that emerged through dialogue about their sample materials

| Teacher | Criteria teachers reported when they evaluated and explained the design of their teaching material |
|---|---|
| Alberto | Students should feel a real desire to communicate. |
| Alvaro | Giving students opportunities to display their subject knowledge. |
| Antonio | Using quality authentic materials that match the learners' linguistic level ("video that is beautiful and not too difficult"). |
| Blanca | Students have to enjoy it (materials/lessons) they "love this kind of thing." |
| Claudia | "I like it (the material) because it works … they (students) feel motivated and can see that they are going to learn something." |
| Cristina | Activities need to be exciting and memorable. *"Something is successful when they (the students) like doing it a lot and they can remember because they liked doing this activity." |
| David | Comprehensive coverage of skills (that material is multi-skills focused). |
| | Teaching incidentally some subject content alongside language. "My aim is not teaching what an operating system is but if you get a little bit of content as well as language that's good." |
| Esther | Active student participation. |
| | Giving visual support to help learners understand technical vocabulary. |
| | Connecting the vocabulary to what they know in Spanish. |
| Eva | Active student engagement (students searching, researching and selecting words to create a resource (the glossary). |
| Ines | Active student participation, students should be "really" involved in communication. |
| Laura | *We need to include enjoyable speaking tasks "I think it is good because when they are having fun they don't remember they are talking in English and they aren't shy." "Learning a language should be fun … not all the time, there is grammar, there are things that are not fun but in general yes, why not? That's what I think." |
| Lucia | The importance of students learning by noticing and talking about differences between Spanish and English, such as politeness routines. |
| Mario | Teaching some subject content. The text he had chosen as a basis for his teaching material was "good" because it "allows you to explain types of disorders and causes." |
| Monica | Students advance "from not knowing to knowing how to" (produce a text) and they "feel proud." |
| Teresa | Students have to be interested in the content (of instruction) and see that they "can apply" to their subject disciplines. |
| Victoria | Teaching should provide activities that allow students to talk about the things they are supposed to be expert in and are "very dear to them." |
| | Using texts that reflect the students specialised field (such as, texts with an interaction between textual and visual material). |
| Yolanda | Students should become involved/engaged in the activity so the activity needs to be purposeful. The students should have a "reason for reading" or there is an "information gap." |

The discussions about sample materials with some teachers revealed their ideas about the relationship between ESP teaching and disciplinary or professional content knowledge. Alvaro talked about his students' subject content knowledge. He told us that he evaluated the material positively on the grounds that it provided opportunities for the students in his English for Law Studies class to display their knowledge of legal concepts through the medium of English. Similarly, David, who referred to the importance of planning and reviewing in his principles for teaching and learning (as abstract principles) explained how his material included a "bit of (computer science) content". An implicit belief that emerged through our discussion with David was his view that his ESP teaching could usefully include some "incidental" teaching of subject content alongside teaching of language to express subject content, subject knowledge "as well as" linguistic knowledge.

Likewise, the discussion with Mario about his sample material brought to light that he valued the material because it "allowed" him "to explain certain types of (medical) disorders and causes", a view that he did not express as a stated principle. In her stated principles for teaching and learning, Teresa had talked about the importance of technical vocabulary, authentic materials and instruction that mentally engages learners. In our dialogue with her about the sample material, her ideas about the learners' disciplinary subject areas loomed large. She saw her material as successful because her learners could clearly see how they could apply the information/skills in the material to their subject disciplines. Similarly our dialogue with Victoria about her sample material revealed her thinking about the importance of the materials in terms of enabling her students to talk about things "they are supposed to be expert in" and that the text the material included reflected the students' specialised field.

A belief that emerged through our discussions with nearly all the teachers about the sample materials concerned affective aspects of teaching/learning. For example, Alvaro referred to his students feeling proud of the knowledge they had developed of legal concepts and terms. Terms the teachers used to denote these affective aspects included a *beautiful* video (Antonio), feeling *really involved* (Ines), a *real desire* to communicate (Alberto), students *love* it (Blanca), *dear* (Victoria and Monica), *feel proud* (Monica and Alvaro), *feel engaged/involved/interested* (Yolanda and Teresa), *liking* (Claudia) and *enjoyable* (Laura). The importance of motivation, which was a stated principle for teaching and learning in the responses of some teachers (Monica, Mario, Yolanda and Cristina) also emerged in our discussion about the sample materials with many of the teachers (Ines, Blanca, Yolanda, Teresa, Alberto, Cristina, Claudia and Laura). As a stated principle, teachers largely talked about the role of motivation as a learning theory, or motivation as a condition for learning. In our discussions about sample materials, teachers talked about motivation as a feeling or as a response. Teachers positively evaluated their materials on the grounds that the students enjoyed using them. As Blanca said "the students have to enjoy it (the material/lesson) and they love this kind of thing", or as Claudia revealed "I like this material because it works; students feel motivated."

## 4 Conclusion

The materials development processes the teachers reported related to the particular sample of material that they brought in. It is possible that different processes would have been reported if the teachers had selected a different sample of materials (most materials focused on specialist vocabulary and language skills, which have been noted in this volume as two relevant issues in ESP instruction – see Quero and Coxhead (see chapter "Using a Corpus-Based Approach to Select Medical Vocabulary for an ESP Course: The Case for High-Frequency Vocabulary"), and Stoller and Robinson (see chapter "Innovative ESP Teaching Practices and Materials Development"). Nevertheless, the processes they highlighted indicate important processes that are sometimes present in ESP materials development and which may not have drawn much consideration thus far in the ESP literature. For the teachers in this context, conducting some form of investigation into the meaning and uses of vocabulary in disciplinary or professional contexts, and searching for appropriate authentic texts and thinking of real-world tasks appeared to be important design considerations. The study did not attempt to identify all the materials design processes that the teachers used. The study sought simply to understand the processes the teachers highlighted, that is, the processes of material development that stood out in their recollections. It can be suggested that it was these processes that presented a particular challenge even for these experienced ESP teachers and that teacher professional development in this setting could target these topics (specialist vocabulary and using authentic texts and tasks).

We also noted what was absent. There was only one example of material that highlighted grammar or discourse features in language use in the specialist domains. Yet the teachers were not unaware of the importance of this focus in ESP teaching. Alvaro, for example, told us that conditionals are used in particular ways in legal texts but he felt he did not know how to "explain grammar if it's not in the traditional way." It is thus suggested that developing material with this focus could be a further topic for teacher professional development in this setting (see Farhady et al., chapter "Selecting Corpus-Based Grammatical Structures for ESP/EAP Materials" in this volume).

The perspectives that emerged through the discussion of the materials provided additional insights about the teachers' views on what "should be the case" in their ESP teaching (Basturkmen et al. 2004). These implicit beliefs only partially mirrored the stated principles the teachers expressed later in the interview. This may be due to the concrete focus on a particular sample of teaching material nature in the earlier part of the interview compared to the general focus in the later part of the interview, when the teachers were asked to state their principles in the abstract. It is possible that some of these differences may relate to different sources of the teachers' beliefs. The implicit beliefs that emerged through discussion of the materials may have brought to light experientially-based beliefs, beliefs based on the teachers' experiences of teaching and learning. For some of the teachers in this case study these experientially-based beliefs included the view that ESP teaching could use-

fully introduce some subject content alongside language content and that learner factors (affective factors) were of major importance in ESP teaching. When asked for their principles, the teachers may have drawn on ideas they derived from theory (literature or teacher education) such as theories of language learning processes and the roles of learners and teachers. It is suggested that others investigating teachers' beliefs distinguish the kind of beliefs (explicit and/or implicit) they aim to investigate and recognize that different methodologies are generally needed to elicit data on implicit compared to explicit beliefs.

## Appendix: Interview Prompts (Adapted)

**Materials Design** Note: Each teacher was asked to bring to the interview samples of EAP/ESP teaching materials that the teacher has developed/designed recently including one sample that the teacher was particularly satisfied with and saw as successful.

1. Did you design the material from scratch? Or, to what extent did you develop or adapt it from previously existing material?
2. Please tell us about the satisfactory sample teaching material you brought to the interview.

   Why do you see it as successful?
   Why was it developed?
   How was it developed?

**Principles** What are your principles for teaching? Can you identify 2–3 core principles that are important for you as a teacher?
What is the principle?
Why is it important?

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# Innovative ESP Teaching Practices and Materials Development

**Fredricka L. Stoller and Marin S. Robinson**

**Abstract** As tertiary-level students progress in their studies, they reach a point where they need to read and write the genres valued in their chosen disciplines. The transition from general academic English to English for specific purposes (ESP) begins at this juncture. ESP instruction facilitates this transition by equipping students with the language and genre-analysis skills needed to access their respective disciplinary genres. In this chapter, we introduce two approaches to ESP instruction that can be sequenced to ease students' progression toward disciplinary literacy. With the *read–and–notice* approach, ESP students are guided in noticing, comparing, and contrasting written disciplinary conventions. This pre-production stage serves as preparation for the later *read–analyze and write* approach. To illustrate what can be accomplished with both approaches, we highlight innovative teaching practices and materials developed specifically for students in an organic chemistry lab and in a subsequent reading-and-writing intensive course for chemistry majors. Particular attention is paid to an online read-and-notice module integrated into an organic chemistry lab. Examples from ten online assignments are provided, and implications for other disciplines are discussed.

**Keywords** Chemistry-specific writing · Disciplinary genres · ESP materials · ESP pedagogy · Genre-analytic skills · Genre-based instruction · Writing conventions

## 1 Introduction

As tertiary-level students progress in their studies, whether they are native or non-native speakers of English, they arrive at a point when they need to read and write the genres valued in their chosen areas of study. These disciplinary genres are

F.L. Stoller (✉)
Applied Linguistics, Northern Arizona University, Flagstaff, AZ, USA
e-mail: Fredricka.Stoller@nau.edu

M.S. Robinson
Environmental and Organic Chemistry, Northern Arizona University, Flagstaff, AZ, USA
e-mail: Marin.Robinson@nau.edu



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challenging for them in part because they differ substantially from the general academic English, and corresponding texts, that they were exposed to at earlier stages in their studies (in high school, university-level English preparation programs, first-year composition classes, and other introductory university classes). As university students transition from general English for academic purposes (EAP) to English for specific purposes (ESP), they have a lot to learn. That they have to master disciplinary subject matter, including key terminology and concepts, goes without saying. They also need to gain access to and control of valued disciplinary genres and the linguistic variation that exists within them (Nesi and Gardner 2012; Paltridge 2013; Swales and Feak 2012; Tardy 2009). ESP classes can facilitate students' transition from EAP to ESP by helping students become (a) more skilled readers and writers in their chosen disciplines (Hirvela 2013, 2016; Hyland 2013) and (b) more self-regulated, autonomous learners (Andrade and Evans 2015). One major goal of ESP instruction is to equip students with language and genre-analytic skills that permit them to continue to learn on their own as they encounter new genres, and corresponding literacy expectations, during their academic and professional lives (Johns 2007).

ESP courses take on many different configurations. Some are taught by ESP faculty; some are taught by disciplinary faculty; and others are team taught by interdisciplinary teams, comprising an ESP specialist and discipline-specific instructor. Some ESP courses are geared toward students just entering their academic fields; others are geared toward students at more advanced levels of disciplinary study. ESP instruction sometimes is the sole focus of the course; in other settings, ESP is addressed as one component of a discipline-specific content class or lab. Instructional practices and materials used in this range of ESP classes vary, in part depending on (a) whether the class comprises students from one overarching discipline (e.g., chemistry), one sub-discipline (e.g., organic chemistry), or multiple disciplines (e.g., chemistry, engineering, forestry, psychology); (b) what the language-skill emphases are (e.g., reading, writing, speaking, and/or listening); and (c) which genres are targeted for instruction (e.g., engineering design reports, journal articles, law briefs, scientific posters). What these varied ESP contexts have in common, despite their differences, is the goal to tailor pedagogy, and corresponding instructional materials, to students' pressing discipline-specific language-skill and genre needs.

In this chapter, we focus on ESP at two different points in university students' progression toward disciplinary literacy, specifically at what we call the *read–and–notice* (pre-production) stage and the *read–analyze and write* stage (cf. Basturkmen 2006, who discusses input and input-to-output methods of teaching ESP). To illustrate what can be accomplished at these two different stages of ESP instruction, we highlight innovative teaching practices and materials developed specifically for chemistry students, though parallels certainly exist in other fields. We begin by providing some background on our interdisciplinary efforts. Then we explain briefly our read–analyze and write pedagogy (which has been documented elsewhere, as noted below). We then turn to a more extensive discussion of our read–and–notice pedagogy, supported by examples of ESP tasks developed for chemistry students enrolled in an organic chemistry lab. Our discussion is sequenced in this way, even

though students benefit from the read–and–notice pedagogy first, because it is in the order in which we have developed these approaches to ESP. We conclude with implications for ESP across the disciplines.

## 2 Background

We have worked as an interdisciplinary ESP team, one applied linguist and one chemist, for more than 15 years. We have collaborated on chemistry-specific ESP research, the conceptualization of instructional approaches for ESP literacy-skill instruction, and the development of print and online instructional materials to support chemistry students' discipline-specific literacy-skills development. Our interdisciplinary collaboration has allowed us to combine our distinct areas of expertise and, at the same time, our shared interests in students' disciplinary literacy needs (Horn et al. 2008). Early on in our joint efforts, we analyzed the language of chemistry in four key disciplinary genres (journal articles, conference abstracts, posters, and research proposals) to ascertain their defining linguistic and nonlinguistic features (Stoller et al. 2008; Stoller and Robinson 2013, 2014a). From the findings of our analyses, we envisioned a context-specific teaching pedagogy (an iterative read–analyze and write approach) and developed corresponding instructional materials (Stoller and Robinson 2014b, 2015). The final outcomes of our efforts include a discipline-specific ESP textbook *Write Like a Chemist* (Robinson et al. 2008), an accompanying website (http://www.oup.com/us/writelikeachemist), and a discipline-specific ESP course offered at our university. Our subsequent efforts have been directed at the read–and–notice (i.e., pre-production) stage, which has been integrated into an already existing organic chemistry lab, taken by students before they enroll in the Write Like a Chemist course.

## 3 Read–Analyze and Write Approach to ESP Instruction

Our *read–analyze and write* approach to ESP instruction, and corresponding materials, was developed for 3rd year university students. In U.S. university contexts, it is at about this point when students (a) have acquired sufficient disciplinary content knowledge to begin to read and write in select disciplinary genres and (b) are prepared for an inaugural ESP course in disciplinary literacy skills. The textbook that we authored (*Write Like a Chemist*) was written specifically for such a course; the read–analyze and write approach (Fig. 1) runs throughout textbook materials and the course. Students read and analyze authentic passages (entire texts, full sections, excerpts, and textual elements, such as figures and tables) from professional chemistry genres. The read–and–analyze tasks are followed by a series of scaffolded writing assignments, during which students compose targeted genres (i.e., journal-quality papers, conference abstracts, scientific posters, and/or research proposals)

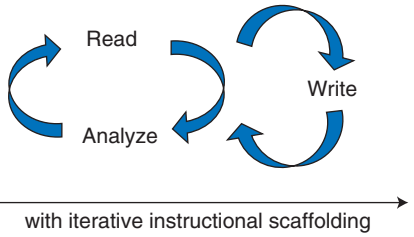


**Fig. 1** Depiction of the iterative *read–analyze and write* approach (adapted from Stoller and Robinson 2015)

following a step-by-step process. When possible, students write about their own undergraduate research projects or, alternatively, they are provided with data from fictitious (though realistic) projects, making the writing experience more authentic. Following guided peer review and instructor feedback, students revise and edit their work, underscoring the importance of revision in the writing process.

The key characteristics of the read–analyze and write approach, though initially developed for ESP in chemistry contexts, are applicable, with adaptation, across the disciplines. Some distinguishing characteristics of the approach include the following:

- Before introducing students to the disciplinary genres targeted for instruction, students are introduced to the *read–analyze and write* approach by means of familiar, everyday genres (e.g., menus, used car ads, internship application letters). The early read–analyze and write tasks introduce students to the approach and guide them in looking at familiar written genres in new ways. To ease the transition from everyday genres to valued disciplinary genres, the same steps are taken with discipline-specific genres that students are already familiar with (e.g., in chemistry, this could be Safety Data Sheets [SDS], a genre that chemistry students commonly encounter in labs). In our context, we then juxtapose two articles—one written for a general audience and the other for an expert audience—on the same topic (one that we are certain that students have encountered in introductory chemistry courses). Students read and analyze both texts, iteratively, to identify similarities and differences. Such systematic scaffolding prepares students to read, analyze, and write the disciplinary genres targeted for instruction.
- By means of read–analyze tasks (with everyday genres, familiar disciplinary genres, and new disciplinary genres), students gain an understanding of the defining linguistic, non-linguistic, and organizational features of the target genres. More specifically, the approach guides students in discovering how five essential writing components (i.e., audience and purpose, organization, field-specific writing conventions, grammar and mechanics, and content) manifest themselves in different genres. As a result of these analyses, students learn to identify and appreciate the various aspects of writing that must coalesce, in different disciplinary genres, for written work to meet disciplinary expectations. Instructionally, these five writing components offer students (and instructors) a manageable way to break down larger analytic tasks into more manageable ones.

- After reading and analyzing multiple examples of target genres (section by section), students begin to write, using excerpts as models. While writing, students are encouraged to return to sample texts for additional rounds of reading and analysis to check and verify disciplinary practices or seek further insights about the genre that they are trying to emulate.
- Throughout the read–analyze and write cycle, there is explicit instruction, teacher modeling, class discussion, practice, teacher and peer feedback, and student reflection. The cycle, with time, helps students gain access to and control of target genres (Tardy 2009).

## 4 Read–and–Notice Approach to ESP Instruction

Recently, we have shifted our attention from read–analyze and write ESP instruction (with 3rd year, and more advanced, university students) to read–and–notice ESP instruction for 2nd year university students, who are ready to notice disciplinary conventions, but not ready to produce them. This stage serves as a useful "training ground" for the later read–analyze and write cycle. Our specific goal has been to integrate read–and–notice instructional materials into an already existing organic chemistry lab. Unlike the Write Like a Chemist course, described above, the read–and–notice ESP writing module has been developed to be delivered online via a Learning Management System (i.e., BlackBoard Learn). The writing module comprises short (15 min) weekly assignments, all scored electronically. Students complete the assignments entirely on their own, outside of lab. The online tasks guide students in noticing disciplinary conventions and are set up to provide immediate feedback upon task completion (both positive and corrective), without direct faculty assistance. The primary learning objective of the module is a simple one: to raise students' awareness of writing conventions in organic chemistry. Unlike our course centered around the read–analyze and write cycle, this module is intentionally pre-production; students are eased into disciplinary writing through activities that promote observational skills (e.g., noticing, comparing, contrasting), with no formal writing assignments. The module is intentionally low stakes, and students are allowed unlimited attempts to complete each task correctly. To encourage successful completion, the module comprises 10% of students' final grade in the lab. We envision the read–and–notice module to be a prerequisite for the reading and writing intensive Write Like a Chemist course.

With over a decade's experience in teaching our Write Like a Chemist course, we have learned that most 3rd year university students entering the course know very little about chemistry-specific writing. Moreover, they often believe that they know more than they do, in part due to their experience in preparing lab reports (see Parkinson 2017; cf. Kelly-Laubscher et al. 2017) in first- and second-year chemistry labs. They have been instructed in how to prepare these reports, so it is not surprising that they assume that a professional-level research paper is simply a more extensive version of a lab report. The goal of our read–and–notice module is to dispel

such beliefs and to help students develop a clearer understanding of the differences between a lab report (a genre for students learning chemistry) and a journal article (a genre for expert chemists), without actually asking them to produce close approximations of the latter. Instead, we engage students in simple assignments designed to raise their awareness of these differences. Such increased awareness can serve as a right-of-passage and foster a sense of belonging to the discipline. Knowing, for example, that the Experimental section (akin to the Methods section in an applied linguistics journal article) comes at the end of an organic chemistry journal article (not after the Introduction), that nuclear magnetic resonance (NMR) data are presented in the Experimental section in prose (not as spectra, that is, as graphic displays, in the Results section), and that chemicals are written in lower case (not capitalized) enhances a student's right to membership as an organic chemist. Awareness of these conventions is akin to knowing a secret password or handshake for entrance into a club or organization.

In the sections that follow, we provide an overview of the read–and–notice module and give examples of tasks assigned to increase students' awareness of disciplinary conventions. Although the examples are all specific to organic chemistry, the approach can be easily adapted to other disciplines, including other areas within chemistry. We begin by describing a pre-assessment task (which students complete again later as a post-assessment task) and then describe 10 read–and–notice assignments.

## *4.1 Pre-assessment Task*

The module begins with a pre-assessment task. Students are asked to answer 15 multiple-choice questions designed to assess what they already know about writing conventions in organic chemistry. Upon completion of the task, students are told only how many questions they answered correctly; they do not see the correct answers, nor do they see the questions that they answered incorrectly. At the end of the semester, students repeat the task as a post-assessment. Only the post-assessment is graded (the equivalent of one homework assignment).

It is worth noting that when we piloted our materials, the pre-assessment task was completed by three students enrolled in an organic chemistry lecture and lab; they all ultimately received A grades in each course. All three scored below 20% on the pre-assessment task, confirming our assumption that students are not likely to have learned these conventions in other courses or through the writing of lab reports.

## *4.2 Read–and–Notice Assignments*

Following the pre-assessment task are 10 read–and–notice assignments that are designed to be completed by students online. The sequence of assignments is outlined in the course syllabus (see Table 1 in the Appendix). The assignments center around excerpts from three different chemistry journals: two are published by the American Chemical Society (ACS), *The Journal of Organic Chemistry* (*JOC*) and *Organic Letters* (*Org. Lett.*); the third, *Tetrahedron,* is published by Elsevier. We intentionally used different publishers and genre types (research articles and letters) to help students recognize that conventions vary across journals. The articles that were selected from the three chemistry journals addressed content parallel to the lab experiments in the organic chemistry lab; the experiments involve "named" reactions in organic synthesis, specifically the Diels-Alder, Wittig, Friedel-Crafts, and Grignard reactions. The selected articles each refer to one of these reactions, enticing perhaps the more motivated student to explore the articles for the science, too! We assumed, while selecting articles for the read–and–notice assignments, that very few students, in their second year of university study, will have read anything from these journals (or other peer-reviewed journals). Thus, it is our intention, with these low-stake read–and–notice tasks, to offer a gentle introduction to the professional literature and corresponding disciplinary conventions.

In the sections that follow, we describe read–and–notice tasks that can be adapted by ESP practitioners working in other disciplinary contexts. In the examples provided, we use italics to share correct answers with our readers; these answers are not provided to students. Also, standard chemistry language is used in the examples (e.g., MW for molecular weight and mp for melting point); these terms are not spelled out because it is assumed that students know them. At various points, "Your thoughts?" questions are embedded into the tasks to help students reflect on what they have learned. Students are expected to share their thoughts (in writing) to receive credit, although the content of their responses is not graded. At other points in the read–and–notice module, students encounter "Did You Know?" questions. These questions too require student responses, for which students are given credit for correct or incorrect answers.

**Assignment 1: Sections of a Journal Article** In the first task, students are asked to browse three journal articles and list by name, or number in the correct order, the major headings used in each article. By means of this task, students learn that *Org. Lett*. has no headings in the main body of the paper, whereas both *JOC* and *Tetrahedron* place the Experimental section after the Conclusions (a common practice among organic chemists). To further raise students' awareness, the first Did You Know? task asks students to respond *true* or *false* to the following assertions:

- It is not the scientist's responsibility to format references so that they adhere to the journal's guidelines. This is done by the journal's editorial staff. (*false*)
- If a submitted manuscript exceeds the word limit, it may be returned unread. (*true*)

- Many journals charge scientists to publish their work, although ACS does not. (*true*)
- *JOC* editors and peer reviewers judge articles primarily on the quality of the science. Problems with grammar, spelling, formatting, etc. are corrected by editors. (*false*)

In line with the approach used in *Write Like a Chemist*, the remaining activities are grouped by major sections of a journal article. We begin with the Experimental section (four tasks), and continue with Results and Discussion (three tasks), Introduction (one task), and References (one task). We follow this sequence not because it reflects the order of sections in a chemistry journal article, but because the Experimental section includes the information most familiar to students. It is also the section many chemists write first, when preparing a manuscript for publication.

**Assignments 2–5: Experimental Section** The read–and–notice tasks associated with the Experimental section of a journal article center on disciplinary conventions associated with (a) using capitalization and abbreviations, (b) describing materials, (c) describing methods (or procedures), and (d) presenting NMR data. Examples A1–A4 (in Appendix) illustrate the types of questions incorporated into these tasks. For most tasks, students are given feedback for correct and incorrect answers. Correct feedback is used to reinforce the key concept (e.g., Right! Chemicals are not capitalized unless they are named after a person); hints are given for incorrect responses (e.g., Check the article again. What do you notice about the capitalization of chemical names?).

**Assignments 6–8: Results and Discussion Section** To raise students' consciousness about disciplinary conventions in Results and Discussion sections of journal articles, read–and–notice tasks focus on tables and on the use of prose to communicate findings (results) and interpretation (discussion). We begin with a task that requires students to interpret a table from *JOC*. Our goal is to raise students' awareness about how the results of multiple reactions can be reported concisely in a single table (12 reactions are summarized in the *JOC* table that is provided). We also prompt them to think about how the authors organized the table. We lead students to discover that the authors conducted the reaction 12 times (and probably dozens of times more that are not reported), each with a slightly different ligand. A reaction included above the table illustrates the structures of the various ligands, each with a unique label. We contrast the *JOC* table with a table in their lab manual, which describes the results of only one reaction. In a "Did You Know?" question, we ask students to think generally about how authors report their results—in chronological order or in a way that leads readers logically to the conclusions of the work, with the latter being correct. In the second task, students are shown two tables—one that is correctly formatted (from *Tetrahedron*) and one that is not. Students are asked to select (from a list) attributes that are wrong in the incorrect table (e.g., inclusion of gridlines, bolded headings).

In a task centered on the prose of the Results and Discussion section, students are asked to distinguish between the purpose of a Results section (to present results) and a Discussion section (to interpret results), even though these two sections are most often combined in organic chemistry journals. In a follow-up task (Example A5), students are asked to select which sentences convey "results" (presentation of findings) and which convey "discussion" (interpretation of findings).

**Assignment 9: Introduction Section** To raise students' consciousness about the characteristics of journal article Introductions, we focus largely on organization and authors' "moves" (following the seminal works of Swales 1990, 2004). We begin with a multiple-choice question (ungraded) that asks students to select the sentence that is most likely the opening sentence of an Introduction (Example A6). We expect that many students will select (incorrectly) a sentence in which the authors introduce the work presented in the paper (e.g., In this paper, we. ..) rather than a sentence that broadly introduces the research area. Students are then presented with seven excerpts from an Introduction (in correct order) and asked to match each excerpt with its purpose (Example A7). In a follow-up activity, students are given an abbreviated list of purposes in scrambled order and asked to order them correctly (Example A8). Lastly, they are asked to answer the first question again (Example A6), but this time students' responses are scored.

**Assignment 10: References and Citations** To raise students' awareness about in-text and end-of-text attribution conventions**,** students are introduced to the format followed by *JOC*, which is nearly identical to the formats used in *Org. Lett*. and *Tetrahedron*. To increase students' attention to detail, we ask them to identify the one correctly formatted reference in a list of eight references (Example A9). In a follow-up matching exercise, students are asked to identify the mistakes made in the other seven references (e.g., spaces should be used between initials in authors' names; semicolons (not commas) should be used to separate authors' names; page numbers should be inclusive; all authors' names should be listed). For in-text citations, we begin by asking students to identify which rules are correct for citations, using an excerpt from *JOC* for guidance (Example A10). The feedback given for incorrect answers helps students identify the correct rules (e.g., the feedback tells them that direct quotations should be avoided in chemistry writing). A follow-up exercise instructs them in the correct use of et al. (Example A11).

## 5 Conclusion

In this chapter, we have described two approaches to ESP instruction: the pre-production *read-and-notice* approach and the *read-analyze and write* approach. The two approaches, sequenced one after the other, can help students transition from general academic English to the language and genres of their chosen areas of study. By means of the pre-production approach, students develop observational skills that help them notice, compare, and contrast disciplinary conventions. These skills

prepare them for a later stage that involves an iterative series of read-analyze and write tasks centered around valued disciplinary genres. To illustrate both approaches, we provided examples from our experiences developing materials for and teaching ESP in a chemistry context. Parallels certainly exist in other ESP contexts.

Whether students are transitioning to the genres of, for example, architecture, biology, engineering, hotel-restaurant management, or law, they will all arrive at a point in their studies when they need access to disciplinary genres. ESP practitioners who want to ease the transition can adapt the approaches introduced here to meet their students' needs. Central to both approaches is the need for ESP practitioners to (a) identify the genres valued in the target disciplines; (b) analyze them to determine the linguistic, non-linguistic, and organizational features that characterize them (see also Quero and Coxhead, chapter "Using a Corpus-Based Approach to Select Medical Vocabulary for an ESP Course: The Case for High-Frequency Vocabulary" in this volume; Farhady, Tavassoli, and Irani, chapter "Selecting Corpus-Based Grammatical Structures for ESP/EAP Materials" in this volume); (c) select examples of authentic texts that are accessible to students in terms of disciplinary content; and (d) develop scaffolded instructional materials that guide students in developing observational skills (with the read-and-notice approach) and then engage students in more rigorous read-analyze and write tasks. The two approaches, when adapted to different academic disciplines, equip students with the language, genre-analytic, and writing skills needed for entrée into their chosen disciplines. Interdisciplinary collaboration—between ESP and disciplinary specialists—is a particularly effective way to achieve these aims.

## Appendix

**Table 1** Organic chemistry lab experiments and associated read–and–notice assignments

| Experiment # | Lab experiment | Online read–and–notice assignments |
|---|---|---|
| | Safety orientation, check-in | |
| 1 | Column chromatography | Pre-assessment |
| 2 (pt 1) | $^{1}$H NMR processing | 1. Sections of a journal article |
| 2 (pt 2) | $^{1}$H NMR interpretation | 2. Experimental: abbreviations and capitalization |
| 3 | $NaBH_4$ reductions | 3. Experimental: describing materials |
| 4 | Literature search | 4. Experimental: describing procedures |
| 5 | Grignard reaction | 5. Experimental: describing NMR data |
| 6 | Wittig reaction | 6. Results: tables (part 1) |
| 7 | Aldol reaction | 7. Results: tables (part 2) |
| 8 | Friedel-Crafts reaction | 8. Results and Discussion: present and interpret data |
| 9 | Diels-Alder reaction | 9. Introduction: organization |
| 10 (pt 1) | Luminol synthesis | 10. References and Citations |
| 10 (pt 2) | Luminol chemiluminescence | Post-assessment |
| | Final exam, check-out | |

Adapted from the syllabus for an organic chemistry lab

**Example A1: Experimental Section (Capitalization)**
Which of the following sentences use capitalization correctly? Use your lab manual and the *JOC* article as guides.

- High-purity $CH_4$ was used as the carrier gas. (*correct*)
- The more polar solvent was ethanol. (*correct*)
- Thin-layer chromatography (TLC) was used to separate a mixture of ferrocene and acetylferrocene. (*correct*)
- The eluent was collected in an erlenmeyer flask. (*incorrect – Erlenmeyer is capitalized because it is named after a person*)
- The gases used were Oxygen, Nitrogen, and Helium. (*incorrect, written-out names of elements or compounds are in lowercase*)

**Example A2: Experimental Section (Abbreviations)**
Chemists are expected to use standard abbreviations in their writing. To practice this skill, fill in the following blanks with the correct abbreviation using the attached list of abbreviations from *JOC*. Be sure to capitalize and punctuate correctly.

aqueous _____ *(aq)*
concentrated _____ *(concd)*
compound _____ *(compd)*
gas chromatography _____ *(GC)*
hour(s) _____ *(h)*
literature value _____ (*lit.*)
room temperature _____ *(rt)*
temperature _____ *(temp)*
thin-layer chromatography _____ *(TLC)*
volume _____ (vol)
weight _____ (wt)

**Example A3: Experimental Section (Describing Materials)**
In this exercise, we compare how materials are described in lab manuals and journal articles.

(1) Consider the Materials section of the Diels-Alder reaction in your lab manual. Which statements are TRUE about the ways in which materials are described? Select all that are correct. *(Correct answers are A, B, C, and F)*

(continued)

A. Physical properties of the reagents used, such as MW and mp, are listed in a table.
B. The amounts of reagents used are listed in a table.
C. Hazards associated with each reagent are listed in a table.
D. Physical properties and hazards of potential products are listed in a table.
E. The expected amount of each potential product is listed in a table.
F. The equipment you will use is reported in a bulleted list, for example:

- 25 mL roundbottom flask
- 250 mL beaker
- Büchner funnel

(2) Now let's examine how materials are described in an organic journal article. Browse through the following excerpt from *JOC* (adapted from Colomer et al. 2016).

**Materials and Methods.** Reagents and solvents were handled using standard syringe techniques. All reactions were carried out under an argon atmosphere. Diisopropylamine (i-$Pr_2NH$) was purified by distillation from $CaH_2$. Aldehydes were purified by distillation and stored over $Na_2SO_4$. Anhydrous solvents were purified by filtration on a solvent purification system (SPS). Crude products were purified by flash chromatography on 230–400 mesh silica gel with distilled solvents. Analytical TLC was carried out on silica gel plates with detection by UV light or 10% phosphomolybdic acid solution in ethanol. All reagents were commercial products. Through this section, the volume of solvents is reported in mL/mmol of starting material.

Which of the following sentences are TRUE in the *JOC* excerpt above? Select all that apply. (*Correct answers are A, D, F, and G.*)

A. Unlike the lab manual, chemical information about compounds is not listed in Tables.
B. A list of chemicals is included but in sentence format, for example: The following chemicals were used: (1) anhydrous ethanol, (2) THF, (3) $Na_2SO_4$, and (4) diisopropylamine (*i*-$Pr_2NH$).
C. Instead of tables, physical properties (e.g., mp, MW) are reported in the text.
D. Purification procedures are briefly described.
E. Vendor information is included (e.g., Sigma Aldrich).
F. The entire section is written in full sentences (no bulleted lists or fragments).
G. The section is largely written in past tense.

**Example A4: Experimental Section (Describing Procedures)**
This activity has four questions.

(1) Refer to the Grignard reaction in your lab manual. Go to Procedure, Preparing the Grignard Reagent. The procedure is described in 15 numbered steps. What verbs are used at the start of the first five steps? (*The answers are Pack, Obtain, Assemble, Remove, and Weigh.*)
(2) Journal articles describe procedures quite differently than lab manuals. Here are three key differences:

- Steps are not numbered or listed. Everything is written in prose (full sentences).
- Imperatives (verbs such as Weigh, Add, Stir, Combine) are not used.
- Sentences are written primarily in the past tense.

With that in mind, compare these two sentences:

Lab manual: 1. Stir the mixture at 0 °C for 20 min.
Journal article: The mixture was stirred at 0 °C for 20 min.

Using the example above, rewrite the following sentence for a journal article. Type your answer in the box provided. Be sure capitalization, units, punctuation, and spelling are correct. (You can copy and paste as needed.) (*Answer: The mixture was refluxed at 140 °C for 10 min.*)

Lab manual: 4. Reflux the mixture at 140 °C for 10 min.
Journal article: _____

(3) Consider the following six-step procedure from a lab manual:

1. Obtain 15 mL of ethanol and place it in a 125 mL Erlenmeyer flask.
2. Obtain 20 mL of 2.5 M sodium hydroxide and add it to the Erlenmeyer flask.
3. Obtain approximately 2.0 mL of benzaldehyde and place it in a small vial or test tube.
4. Obtain approximately 1.0 mL of acetone and add it to the benzaldehyde in a vial or a test tube.
5. Using a Pasteur pipet, add the benzaldehyde/acetone mixture slowly (a drop or two at a time, over a period of 5 min) to the ethanol/sodium hydroxide mixture.
6. Allow the reaction to stir at room temperature for 30 min.

In a journal article, these steps would be condensed to no more than two sentences! We have provided an example below; however, some information is missing. Using the lab manual excerpt, fill in the blanks in the journal article excerpt. Your answer must be an exact match and use capitalization, abbreviations, spelling, and punctuation correctly. Note how the authors use parentheses to achieve conciseness.

(continued)

Benzaldehyde (____) in ____ (1.0 mL) was added dropwise over 5 min to a mixture of ____ (15 mL) and ___ (20 mL, 2.5 M). The reaction was ____ at room temperature for 30 min.

*Answer*: Benzaldehyde *(2.0 mL)* in *acetone (1.0 mL)* was added dropwise over 5 min to a mixture of *ethanol* (15 mL) and *sodium hydroxide* (20 mL, 2.5 M). The reaction was *stirred* at room temperature for 30 min.

(4) Your thoughts? What key differences did you notice between how procedures are described in a lab manual versus a journal article? Why do you think these differences exist?

**Example A5: Results and Discussion Section (Present and Interpret Data)**

In exercise A4, you learned that in the Results section, results are shared, and in the Discussion section, results are interpreted. However, because these two sections are combined, results and interpretative remarks are often intertwined. Nonetheless, it is usually possible to distinguish the two. Here are some guidelines:

In the Results, authors highlight the results presented in tables (without repeating them) by

- Calling out the table in the text (e.g., "As shown in Table 1")
- Describing the results in the table (without repeating the values)
- Summarizing important findings

In the Discussion section, authors

- Interpret their results (often using phrases such as "The results indicated" or "The results suggested")
- Compare their findings to others' works
- Propose mechanisms to explain their results

Below we present excerpts from a *JOC* Results and Discussion section (adapted from Wang et al. 2016). Determine which excerpt is a Result (R) and which is a Discussion (D).

1. As shown in Table 1, the desired product could be obtained in moderate yield (68–78%) with varying levels of enantioselective excesses. *(R)*
2. The results indicate that the rate-determining step of the dinuclear zinc catalytic asymmetric reaction may change when the substrate bears a strong electron-withdrawing group. *(D)*

(continued)

3. To our surprise, when Trost's ProPenol dinuclear zinc catalyst **7a** was examined under the same condition, the enantiomeric excess of the product was up to 97% (Table 1, entry 2). *(R)*
4. Among the ligands screened for the Friedel-Crafts reaction, $\mathbf{L}_1$ afforded the best results in terms of yield and enantioselectivity (Table 1, entry 2). *(R)*
5. These results suggest that THF not only serves as the reaction media but also acts as a weak catalytic auxiliary in the reaction. *(D)*
6. In further investigation, we used **7a** as the catalyst for the Friedel-Crafts alkylation process and various reaction conditions were examined (Table 2). *(R)*
7. When the temperature was raised to 40 °C, ee dropped to 86% (Table 2, entry 7). *(R)*
8. Therefore, the optimal conditions for the enantioselective Friedel−Crafts reaction were as follows: 10 mol% ligand $\mathbf{L}_1$, 20 mol% $ZnEt_2$, 2 equiv. of indole **8a** to imine **9** in THF at room temperature for 12 h. *(R)*
9. In accordance with the report by Wang,[11] when N-methylindole **8w** was examined in the catalytic system, no reaction was observed. *(D)*
10. A plausible mechanism for the Friedel−Crafts alkylation process is proposed on the basis of Ding's X-ray analysis of the zinc complex and our observed results (Scheme 4).[8,9,11] *(D)*

**Example A6: Introduction (Opening Sentence)**
Consider the following three sentences from an Introduction in *JOC* (adapted from Lakshmi and Ravikanth 2013). Which sentence do you think is the first sentence of the Introduction (the opening sentence of the paper)? Your answer will not be graded, but please let us know what you think! We will ask you this question again at the end of the activity. Note: citation numbers have been replaced with "#" to make this more challenging.

A. Recently, we reported on 3,5-diformyl BODIPYs and demonstrated their use as a pH sensor,[#] cyanide sensor,[#] and in other applications.[#]
B. In this paper, we report the synthesis of conjugated BODIPYs by carrying out a reaction between formyl BODIPYs and alkyl or aryl ylides under the Wittig reaction conditions.
C. Among the numerous classes of highly fluorescent dyes, conjugated BODIPY is known to be a versatile and robust fluorophore due to its novel characteristic features and numerous useful applications. (*Correct answer*)

(continued)

**Example A7: Introduction (Purposes)**
The following excerpts are from a *JOC* Introduction (adapted from Wang et al. 2016). They are in the correct order (that is, the order in which they appeared in the actual article); however, some sentences have been omitted. Your task is to determine the purpose of each excerpt. The purposes are listed below in scrambled order. Match each excerpt with its correct purpose. Each purpose is used only once.

(*Answers*: 1 = E, 2 = B, 3 = D, 4 = G, 5 = A, 6 = C, 7 = F)

1. _____ Optically active nonproteinogenic amino acids have captivated chemists for their biological activities and chemical transformations.[1] (paragraph 1, sentence 1)
2. _____ 3-Indolylglycine derivatives can be used as important synthetic intermediates and building blocks in natural and man-made products.[2] (paragraph 1, sentence 2)
3. _____ Several strategies have been reported for their stereoselective synthesis, including asymmetric catalysis,[3] use of chiral auxiliaries,[4] enzymatic resolution,[5] and dynamic kinetic resolution.[6] Among these methods, asymmetric catalysis is the most significant and effective approach to prepare these compounds because only a limited quantity of the chirality controlling element is used. (paragraph 1, sentences 3 and 4)
4. _____ Wanner et al. developed chiral phosphoric acids 1 and 2 catalytic process for the synthesis of 2-nitrophenylsulfenyl-protected (S)-indolylglycine and triphenylmethylsulfenyl-protected (R)-indolylglycine (Fig. 1).[3a] The enantioselective Friedel–Crafts reaction of indoles with ethyl glyoxylate imines utilizing chiral phosphoric acid 3 was described by Kang and co-workers.[3b] (paragraph 1, sentences 5 and 6)
5. _____ Dinuclear zinc catalysts have also shown excellent performance on asymmetric Friedel–Crafts alkylation reactions … (For example,) Wang et al. reported the Friedel–Crafts amidoalkylation of indoles with aryl aldimines catalyzed by **7a**, affording 3-indolyl methanamine derivatives.[11] However, only aryl aldimines were tested in their work. (last paragraph, first sentence)
6. _____ Herein, we report the dinuclear zinc catalyst system for asymmetric Friedel–Crafts alkylation reaction between indoles and ethyl glyoxylate imine. (last paragraph, next to last sentence)
7. _____ What's more, the products are 3-indolyl α-amino esters. In the presence of 10 mol% catalyst, a series of 3-indolylglycine derivatives were synthesized in moderate to good yields and excellent ee (up to >99%) under mild conditions. (last paragraph, last sentence)

Purposes (in scrambled order)

A. Identify a gap (or gaps) (i.e., shortcomings) in previous works, suggesting the need for further research.

(continued)

B. Highlight the importance of the research area.
C. Introduce the current work (i.e., the work presented in the article) as a way to fill gaps left in others' works.
D. Provide essential background information (previous accomplishments in this area).
E. Introduce the general research area.
F. Preview key findings of the current work.
G. Highlight and cite previous works in the research area.

**Example A8: Introduction (Scrambled Purposes)**
Consider the purposes of the Introduction again, this time reduced from seven to four. Based on your answers to the previous question, arrange these purposes in their correct order. *(Answer: 3, 1, 4, 2)*

1. Provide background information and cite others' works.
2. Introduce the current work (that will fill the gap).
3. Identify the general research area and its importance.
4. Identify a gap in the research area (work that still needs to be done).

**Example A9: References**
*JOC*, *Org. Lett*., and *Tetrahedron* all recommend similar guidelines. Here are three examples of a reference format used in *JOC* (from Kumar et al. 2017):

(1) Koelle, P.; Noeth, H. *Chem. Rev.* **1985,** *85,* 399–418.
(2) Piers, W. E.; Bourke, S. C.; Conroy, K. D. *Angew. Chem., Int. Ed.* **2005,** *44,* 5016–5036.
(3) Hayashi, Y.; Rohde, J. J.; Corey, E. J. *J. Am. Chem. Soc.* **1996,** *118*, 5502–5503.

Examine the three *JOC* references above, paying careful attention to detail (e.g., spacing and punctuation). Below we have listed eight references (adapted from Georgiou et al. 2017), but only one matches the *JOC* format above. Which one is it? Note the differences are quite subtle! Assume that all articles are at least three pages in length. *(Answer: reference 5)*

(1) Pelly SCA; Govender S; Fernandes MA; Schmalz H-G; de Koning C. *J. Org. Chem.* **2007**, *72,* 2857–2861.
(2) Habib A. M., Masuda S., McCloud T. *J. Org. Chem*. **1987**, *52,* 412–415.

(continued)

(3) La Forge F. B.; Haller H. L.; Smith L. E. *Chem. Rev*. **1933**, 181.
(4) Pastine S. J.; Sames D. Concise Synthesis of the Chemopreventitive Agent (±)-Deguelin. *Org Lett.* **2003**, *5,* 4053–4055.
(5) Akselsen O. W.; Skattebol L.; Hansen T. V. *Tetrahedron Lett*. **2009,** *50,* 6339–6342.
(6) Büchi G.; Crombie L.; Godin P. J.; Kaltenbronn J. S.; Whiting D. A. *J. Am. Chem. Soc.* **1961**, 2843–2848.
(7) Undeani G. O. et al. *Cancer Res.* **1997**, *57,* 3424–3428.
(8) Alonso, Rafael; Campos, Pedro. J.; Garcia, Barabara; Rodriguez, Miguel A. *Org. Lett.* **2006**, *8,* 3521–3526.

**Example A10: Citations**

Immediately below the following *JOC* excerpt (adapted from Lakshmi and Ravikanth 2013), we list 10 rules regarding in-text citations. Some are correct and some are incorrect. Using the *JOC* excerpt for guidance, which rules are correct for *JOC*? There is more than one correct answer. *(Answer: 2, 3, 5, 6, 10)*

*JOC* excerpt (from the Introduction)

Among the numerous classes of highly fluorescent dyes, 4,4-difluoro-4-bora-3a,4a–diaza-s-indacene (BODIPY) is known to be a versatile and robust fluorophore due to its novel characteristic features and numerous useful applications. The novel features of BODIPY include robustness against light and chemicals, relatively high molar absorption coefficients and fluorescence quantum yields, negligible triplet formation, narrow emission bandwidths with high peak intensities, good solubility, resistance toward self-aggregation in solution,[1] excitation/emission wavelengths in the visible spectral region (>500 nm), and fluorescence lifetimes in the nanosecond range.[2] BODIPY dyes have been shown to be promising for a variety of applications including use as biological labels,[1,3] electroluminescent devices, tunable laser dyes,[4] potential candidates for solid-state solar concentrators,[5] fluorescent switches[6] and fluorophores in sensors, and potential photosensitizers in photodynamic therapy of cancer.[1,7] Moreover, the spectroscopic and photophysical properties of BODIPYs can be fine-tuned by attachment of ancillary residues at the appropriate positions of the BODIPY core[8] by carrying out various synthetic reactions on BODIPYs. The various synthetic strategies available for the modification of the BODIPY core are electrophilic substitution,[9] condensation reactions,[10] substitution of the fluorine atoms,[11] direct substitution of the hydrogen atoms,[12] and transition-metal catalyzed reactions through the use of halogenated systems.[13–17]

(continued)

Which of the following rules are correct? There is more than one correct answer.

____1. Citations are placed only at the end of a sentence.
____2. Citations can be placed in a sentence.
____3. Citations are placed after commas, not before.
____4. At the end of the sentence, citations are placed before the period.
____5. A work should be cited each time it is referenced, not just the first time.
____6. Two citations that are not sequential are separated by a comma.
____7. The authors' names must be included in the sentence that cites their work.
____8. Only one work should be cited in a sentence.
____9. Direct quotes (where an author is cited word-for-word rather than paraphrased) are common in chemistry writing.
____10. Citations are numbered in numerical order (1, 2, 3, …).

**Example A11: Use of et al.**

Although most citations omit the names of the authors (for conciseness), authors' names are occasionally included. In such instances, et al. (meaning "and others") is used if the cited work has at least three authors. For one or two authors, the last names of the authors are written out. Consider the following examples (adapted from Wong and Wong 2007):

> Inoue et al.[3] achieved *anti*- and *syn*-aldol products of carboxylic esters using combinations of a boron triflate and an amine.
>
> Ohkouchi et al.[17] have shown that the silver(I) carboxylate-BINAP catalyst coordinated to the nucleophile in Mukaiyama aldol reactions; the activated complex then attacked the aldehyde to afford the aldol adduct.
>
> Solid-state characterization of a trichlorotitanium aldolate has been reported by Cozzi and Floriani.[13]

Using the sentences above for guidance, correct the following citations if necessary. Copy and paste the underlined passage into the box (correct or incorrect), then edit the citation if necessary. (*Correct answers are shown in italics.*)

(1) Rurack, Kollmannsberger, and Daub[20] extended pyrroles from 2-formyl pyrroles using Wittig conditions.

*Rurack et al.*[20] *synthesized*

(continued)

(2) Wong and Thurman[4] ab initio calculations to investigate the mechanism of the metal chloride-promoted Mukaiyama aldol reaction between trihydrosilyl enol ether and formaldehyde.

*Wong and Thurman[4] employed (correct as is)*

(3) When Yanai, Yoshino, Takahashi et al.[15] used $Tf_2CHCH_2CHTf_2$, the Mukaiyama aldol reaction of R-substituted cyclohexanones with 2-silyloxyfurans gave the aldol products in excellent yield without loss of diastereoselectivity.

*When Yanai et al.[15] used*

(4) In particular, Mühlthau et al.[11] have reported a highly diastereoselective Friedel–Crafts alkylation of 1-arylalkanoles via the formation of chiral benzylic carbocations.

*Mühlthau et al.[11] have reported*

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# Using a Corpus-Based Approach to Select Medical Vocabulary for an ESP Course: The Case for High-Frequency Vocabulary

**Betsy Quero and Averil Coxhead**

**Abstract** This chapter focuses on the use of multiple corpora and word lists made from corpora to select ESP vocabulary and on the integration of that lexis into an English for Specific Purposes (ESP) course. The first part of the chapter discusses the compilation of a corpus of medical textbooks in English which are commonly used in many Latin American countries, such as Venezuela, in undergraduate medical courses. A second corpus, this time of general English, was used as a comparison to the medical textbook corpus. Both corpora were analyzed for vocabulary load using Nation's (2012) BNC/COCA lists, Coxhead's AWL (2000) and Coxhead and Hirsh's (2007) Science List. The study found that the first 3000 words constitute a vital set of vocabulary for ESP medical students at the beginning of their studies and that the vocabulary load of the medical textbooks is far greater than the loads of university texts (see Nation 2006). Bringing these corpus-based findings into ESP courses is an important task. The second part of the chapter discussed integrating these findings into an ESP course for medical students, using Nation's (2013) framework of planning, strategy training, testing, and teaching vocabulary.

**Keywords** Corpus linguistics · High frequency vocabulary · Medical word lists · English for medical purposes

## 1 Introduction

The motivation for the present study originates from the constant need in English for Specific Purposes (ESP) research to identify which are the most frequent general, academic and discipline-specific (technical) words worth focusing on in ESP

B. Quero (✉) · A. Coxhead
School of Linguistics and Applied Language Studies, Victoria University of Wellington, Wellington, New Zealand
e-mail: Betsy.Quero@vuw.ac.nz; averil.coxhead@vuw.ac.nz



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courses at university level. With one particular ESP sub-field, medicine, in mind, this investigation provides guidelines for the creation of discipline-specific word lists organized by levels of frequency and salience. Medical texts are characterised by their large amount of Graeco-Latin vocabulary (Ferguson 2013). A corpus comparison approach (see Gardner and Davies 2014) was used to investigate the lexical coverage and semantic nature of the medical vocabulary, focusing on the first 3000 most frequent words for first year English for Medical Purposes (EMP) reading courses. With this goal in mind, this investigation looks at the most appropriate vocabulary to be included in high-frequency discipline-specific (medical) word lists. Additionally, this study addresses the pedagogical value of using high-frequency medical word lists for ESP readers of medical textbooks. While this study focuses on medical texts, these research approaches could be useful for analyzing texts from any discipline or area of interest in ESP.

## *1.1 Description of the Context for the Study*

The present study took into consideration a specific undergraduate population of ESP students, those in EMP reading classes at Spanish medium universities in Venezuela. These ESP courses focus predominantly on the development of the discipline-specific reading skills of these learners. ESP instruction at university level is a common subject for most university degrees in Latin America these days (see Salager-Meyer et al. 2016, for an overview of EAP/ESP in Latin America). ESP is a compulsory subject, particularly for the more science-oriented university degrees. It is optional in other programs. This instruction in Venezuela takes place for at least 1 year. The second year is optional for most ESP programs.

In the specific case of the ESP learners enrolled for an undergraduate degree (e.g., Bachelor of Health Sciences, Bachelor of Dental Surgery, Bachelor of Science in Human Nutrition, Bachelor of Science in Bioanalysis, and Bachelor of Pharmacy, among others) in the Faculty of Medical and Health Sciences in Venezuela, many of them take their first ESP course usually in the first year of their bachelor degree.

First language (L1) Spanish speakers in Venezuela are not very likely to need English as a means of communication in their habitual health and medical settings; however, this particular group of ESP learners needs to be able to read and understand specialized texts written in English to be able to keep up to date throughout their university degrees and future careers with the latest scientific breakthroughs which, in most cases, are first published in English. Even though the classroom discussions, explanations and assessment in these ESP reading courses are all conducted in Spanish (i.e., the L1 of the ESP students and most ESP teachers in Venezuela), English is used in the examples in the course handouts and worksheets, on the information written on the board and on the slides presented by the ESP teacher and learners. This situation is common in other English as a Foreign Language settings, not just Venezuela.

In the Venezuelan context, ESP teachers use a theme-based model of content-based instruction (CBI) (see Brinton et al. 2003). ESP reading courses are characterized by: (1) being content oriented rather than content focused, (2) taking into account the interests and needs of the ESP learners, (3) providing the ESP learners with opportunities to gain new knowledge on content area topics of their interest, and (4) being taught by language specialists. See Stoller and Robinson (this volume) for more on reading to write in ESP courses.

## *1.2 Vocabulary in Specialized Disciplines: Key Concepts and Studies*

Chung and Nation (2003) find that one word in three in an anatomy textbook for university study is technical. See Coxhead (2013) for other approaches to identifying vocabulary for ESP. The Chung and Nation (2003) finding suggests that the burden of learning vocabulary for specific purposes is quite high for ESP learners in medicine. Word knowledge is a key component of language acquisition, and without enough receptive vocabulary, it is not possible to achieve good reading comprehension of academic or specialized texts (Laufer 1989; Nation 2013). ESP students need to know or need to learn large numbers of words to be able to meet the lexical demands of discipline-specific texts, and gain good reading comprehension of this kind of texts at university level. See Basturkmen and Bocanegra-Valle, this volume, for more on ESP teachers' concerns about technical vocabulary.

### 1.2.1 Classifying Kinds of Vocabulary

Schmitt and Schmitt (2012) proposed a frequency-based classification consisting of the following three bands or levels, namely, high-frequency, mid-frequency, and low-frequency words. High-frequency words include the top 3000 most frequent word families. Mid-frequency words comprise those words which exist between the 4000 and the 9000 frequency bands. Low-frequency words refer to those words beyond the 9000 frequency level. The acquisition of high-frequency vocabulary is seen as being a major learning goal for foreign language learners (Nation 2013), because these 3000 words provide both language teachers and learners with good opportunities to promote the use and practice of words that are essential to continue with the acquisition of mid- and low-frequency vocabulary. Nation's (2013) classification of the levels of vocabulary, which is the most comprehensive classification of its kind up to the present, is both frequency and text type based. It includes high, mid, and low-frequency vocabulary levels as in Schmitt and Schmitt (2012) and two text types (i.e., academic, and technical vocabulary). *Academic vocabulary* is the term for a small number of words with higher frequency and a wider range of occurrence in a wide variety of academic texts, and *technical vocabulary* refers to a group

of subject-specific words that are related to a particular topic or content area. The focus of this chapter is lexis, but see Farhady and Tavassoli (this volume) for the use of corpora to investigate grammatical features in ESP.

From a frequency perspective, the present study looks at high-frequency words (i.e., the 3000 most frequent words) in medical written texts. Additionally, from a text type perspective, it focuses on identifying general academic, and technical words from a specific field (medicine).

### 1.2.2 High-Frequency Vocabulary Lists in English for Academic Purposes (EAP) and English for Specific Purposes (ESP)

High-frequency word lists in EAP and ESP have been created from various specialized corpora, using criteria such as frequency of occurrence, range, dispersion, lexical coverage, and ranked by frequency levels. They have been developed primarily for language learning and testing purposes. In the present investigation, we constantly refer to some existing general, academic, and scientific word lists, namely, the General Service List (GSL; West 1953) containing two word family lists of 998 and 988 word families, respectively, the Academic Word List (AWL; Coxhead 2000) comprising a total of 570 word families, the Pilot EAP Science List (EAP Science List; Coxhead and Hirsh 2007) including 317 word families, and the first 3000 British National Corpus/Corpus of Contemporary American English word lists (BNC/COCA lists; Nation 2012) containing 1000 word families each.

### 1.2.3 High-Frequency Vocabulary in the Medical and Health Sciences

The lexical text coverage of high-frequency vocabulary in the medical and health sciences has been the subject of a range of corpus-based studies on the vocabulary load in the specific fields of general medicine (Chen and Ge 2007; Coxhead and Quero 2015; Hsu 2013; Wang et al. 2008), nursing (Yang 2015), pharmacology (Fraser 2007, 2009), and anatomy (Cobb and Horst 2004). The researchers use corpora to investigate the percentage of high-frequency items in their texts. In these cases, the researchers have reported on (Table 1 below), the coverage of West's (1953) General Service List (GSL) which is presented along with Coxhead's (2000) Academic Word List (AWL). Note that the corpus contents are quite different in Table 1, and the size of the corpora differs also.

Despite the differences in size, sub-field, and coverage results shown by the specialized corpora summarized in Table 1, the lexical coverage results of the GSL in those studies range between 74.85% of tokens with a very small corpus of anatomy (Cobb and Horst 2004) to the low 60s, for example in the case of Fraser (2007). These figures suggest that the high-frequency items in the GSL are important for specialized purposes as well as for general purposes. Coxhead (2000)

**Table 1** Lexical coverage (%) of GSL and AWL over specialized texts from medical and health sciences organized by year

| Researchers | Year | Corpus | Text type | Number of tokens | GSL % of tokens | AWL % of tokens | Total % of tokens |
|---|---|---|---|---|---|---|---|
| Coxhead and Quero | 2015 | Medicine (Med1) | Textbooks | 5,431,740 | 61.59 | 8.23 | 69.82 |
| Coxhead and Quero | 2015 | Medicine (Med2) | Textbooks | 5,890,477 | 62.30 | 7.65 | 69.95 |
| Fraser | 2009 | Pharmacology | Research articles | 360,000 | 61.00 | 9.50 | 70.50 |
| Fraser | 2007 | Pharmacology | Research articles | 185,000 | 60.97 | 9.47 | 70.44 |
| Fraser | 2007 | Pharmacology | Textbook | 58,413 | 62.19 | 6.58 | 68.77 |
| Cobb and Horst | 2004 | Anatomy (Learned section Brown corpus) | Research articles | 2024 | 74.85 | 6.72 | 81.57 |

reported coverage of the AWL at 10% of her academic written corpus, and a slightly lower coverage of 9.1% over the science section of that corpus. The coverage results of the AWL range between 10.07% of tokens in Chen and Ge's (2007) medical corpus and 6.58% of tokens in Fraser's (2007) pharmacology corpus. Chen and Ge (2007) compiled a corpus of medical research articles (190,425 running words) and found the AWL had 10.07% coverage. This percentage is similar to Coxhead's finding. The AWL is not a specialized science or medical word list, but it does contain high-frequency vocabulary, as these results suggest. For more on the AWL in vocabulary research in ESP, see Coxhead (2013).

### 1.2.4 Investigating the Vocabulary of Medical Texts and Developing Specialized Word Lists

A number of studies have focused on investigating the vocabulary of medical texts. Several studies have built on existing general word lists such as West's GSL (1953), Coxhead's AWL (2000), and Coxhead and Hirsh's (2007) EAP Science List. Others have developed specialized word lists from corpora without drawing on such existing lists. Chen and Ge's (2007) investigation of medical vocabulary focused on identifying salient medical words in the AWL. They identified 471 word families in the AWL with medical meanings and found 292 of these word families (i.e., 51.2%) are frequently used in medical English.

Other researchers have used the GSL and the AWL as the basis for developing further specialized word lists. One is the Pilot EAP Science List (hereafter EAP Science List) (Coxhead and Hirsh 2007) and the Pharmacology Word List (hereafter PWL601) (Fraser 2007). The EAP Science List (Coxhead and Hirsh 2007) was

**Table 2** Lexical coverage of specialized word lists created to supplement the GSL and the AWL

| Researchers | Year | Corpus type | Number of tokens | Total GSL& AWL % | Specialized list % | Total % |
|---|---|---|---|---|---|---|
| Coxhead and Hirsh | 2007 | Science research articles & university textbook chapters | 1,761,380 | 80.48 | 3.79 (EAP Science) | 84.27 |
| Fraser | 2007 | Pharmacology research articles | 185,000 | 70.44 | 12.91 (PWL601) | 83.35 |
| Fraser | 2007 | Pharmacology textbook | 58,413 | 68.77 | 14.76 (PWL601) | 83.53 |

**Table 3** Lexical coverage of the EAP Science List (2007) medical textbooks and Science texts

| Researchers | Year | Corpus type | Number of tokens | Total GSL& AWL % | EAP Science list % | Total % |
|---|---|---|---|---|---|---|
| Coxhead and Quero | 2015 | Medical textbooks (med1) | 5,431,740 | 69.82 | 6.07 | 75.89 |
| Coxhead and Quero | 2015 | Medical textbooks (med2) | 5,890,477 | 69.95 | 5.89 | 75.84 |
| Coxhead and Hirsh | 2007 | University Science research articles & chapters | 1,761,380 | 80.48 | 3.79 | 84.27 |

developed as a science list for EAP based on a written science corpus of English comprising a total of 2,637,226 tokens. The complete pilot science corpus used to make the EAP Science List was developed by using the science sub-corpus of Coxhead's written academic English corpus (Coxhead 2000), and by adding a further seven new science subjects to the existing corpus developed by Coxhead and Hirsh (2007). Criteria of range, frequency and dispersion were considered for selecting the words to be added to the EAP Science List. The EAP Science List is included in this analysis because it is important to find out its coverage over specialized corpora. High coverage would suggest that this list contains lexical items which ESP learners need (Table 2).

Coxhead and Quero (2015) reported on the coverage of the GSL, AWL, EAP Science, and BNC/COCA word lists over two medical corpora (Med1 corpus and Med2 corpus) which had been compiled from medical textbooks. The Med1 corpus contains 5,431,740 tokens and Med2 corpus contains 5,431,740 tokens. Table 3 summarizes the lexical coverage of the EAP Science List over medical corpora (Coxhead and Quero 2015). When we compare the lexical coverage of the EAP Science List over two medical textbook corpora (Quero 2015), both containing over five million running words (see the Methodology section for more on these corpora: Med1 and Med2 corpora and the science corpus used to create the EAP Science List), we immediately notice a 2% higher coverage of this 317 word family list over

**Table 4** Lexical coverage results of specialized word lists created in the medical and health sciences

| Researchers | Year | Corpus type | Number of tokens | Headwords | Name of the list | Total coverage of list % |
|---|---|---|---|---|---|---|
| Yang | 2015 | Nursing research articles | 1,006,934 | 676 | NAWL | 13.64 |
| Wang et al. | 2008 | Medical research articles | 1,093,011 | 623 | MAWL | 12.24 |
| Hsu | 2013 | Medical textbooks | 15,016,553 | 595 | MWL | 10.72 |
| Fraser | 2007 | Pharmacology research articles | 185,000 | 601 | PWL601 | 12.91 |
| Fraser | 2007 | Pharmacology textbooks | 58,413 | 601 | PWL601 | 14.76 |

the medical corpora (see Table 3). This higher coverage of the EAP Science List over medical texts illustrates that this list includes a good percentage of relevant scientific words for EMP learners.

In another study involving high-frequency words and medical texts, Hsu (2013) drew on Nation's (2006) British National Corpus (BNC) word lists and a corpus of 15,016,553 running words (tokens) of medical textbooks. She found that the coverage of the first three BNC lists (70.68%) is similar to the 69.82% coverage of the GSL and the AWL for Med1 corpus and 69.95% for Med2 corpus (Coxhead and Quero 2015).

Several high-frequency specialized words lists have been created in the medical and health sciences and two of these specialized word lists were created beyond the GSL, namely, Yang's (2015) Nursing Academic Word List (NAWL) which contains 676 word families, and Wang et al. (2008) Medical Academic Word List (MAWL) which consists of 623 word families. Fraser's (2007) Pharmacology Word List (PWL601) was created excluding words in the GSL and AWL and contains 601 word families. Hsu's (2013) Medical Word List (MWL) list includes 595 word families beyond the first 3000 BNC lists.

Only one list was not created beyond another existing high-frequency word list. This list is Fraser's (2009) Pharmacology Word List (PWL2000). This list comprises the most frequent 2000 word families in the pharmacology corpus used to create it, using a different methodology from the Fraser (2007) study. The coverage of the PWL2000 is 89.10% over a corpus of pharmacology research articles and 86.30% over a corpus of pharmacology textbooks (Fraser 2009). Table 4 provides a summary of these medical and health science lists, their corpora, tokens, headwords and coverage.

In general, the wide variation observed in coverage figures in Tables 1, 2, 3 and 4, even among corpora studies closely related to medicine (Chen and Ge 2007; Coxhead and Quero 2015; Hsu 2013; Wang et al. 2008) has led us to explore further

the lexical coverage of existing high-frequency word lists (e.g., the GSL, AWL, EAP Science List, and first 3000 BNC/COCA lists) over a medical corpus in order to find out more about the nature and power of high-frequency vocabulary in EMP.

## 2 The Current Study

One of the main goals of this investigation is to create and validate a set of high-frequency and discipline-specific, in this case medical, word lists that include the 3000 most frequent words in medical textbooks. This kind of high-frequency word lists of medical texts can provide a useful lexical shortcut for EMP learners starting to read medical textbooks. In general, the findings of the present study provide answers to the following questions:

(a) What is the lexical coverage of the GSL, AWL and EAP Science List over a medical (i.e., Med1) corpus and a general corpus?
(b) What is the lexical coverage of the first 3000 BNC/COCA lists over a medical (i.e., Med1) corpus and a general corpus?
(c) What are the 3000 words with the highest coverage on medical texts?
(d) What is the behavior of the newly created high-frequency word lists on a different medical corpus (i.e., the Med2 corpus)?

This study focuses on receptive word knowledge by looking at a methodology to identify the most salient words needed by ESP students to be able to focus on the high-frequency vocabulary that provides the greatest return for EMP students.

## 3 Methodology

### *3.1 Corpora*

Three different corpora were compiled for this study: (1) a medical corpus (Med1 corpus) containing 5,431,740 tokens of medical textbooks, (2) a general corpus of the same size (5,431,740 tokens) as the Med1 corpus used as a comparison corpus, and (3) a second medical corpus (Med2 corpus) of 5,890,477 tokens with similar content and size to the Med1 corpus for validation purposes. The Med1 corpus was developed by combining the electronic versions of two medical textbooks: *Harrison's Principles of Internal Medicine,* 17th edition (Fauci et al. 2008), and *CECIL Medicine*, 23rd edition (Goldman and Ausiello 2008). These two textbooks were chosen because they include a comprehensive range of medical topics and are used from the first year of medical studies. Also, these books are commonly consulted by medical students from the beginning of their medical studies.

The Med2 corpus combined the electronic versions of two medical textbooks: the *Merck Manual of Diagnosis and Therapy*, 19th edition (Porter and Kaplan 2011) and the *Oxford Textbook of Medicine*, 5th edition (Warrell et al. 2010). These two textbooks cover a wide range of medical topics. This corpus is slightly larger than the Med1 corpus, because the textbooks contain more chapters. The specialized texts used to create the Med1 and Med2 corpora for the present study were downloaded from various publishers and databases made available by Victoria University of Wellington for research purposes.

A corpus of general English was compiled to serve as a comparison corpus for this study. The general comparison corpus was built using substantial sections of several well-known English corpora: the Freiburg-LOB corpus (FLOB corpus; Mair and Ludwigs 1999b), the Freiburg-Brown corpus (FROWN corpus; Mair and Ludwigs 1999a), the KOLHAPUR corpus (Shastri 1986), the Lancaster-Oslo/Bergen corpus (LOB corpus; Leech et al. 1978), the Wellington corpus of written New Zealand English (WWC; Bauer 1993), a standard corpus of present-day edited American English (BROWN corpus; Kucera and Francis 1964), and the Australian corpus of English (ACE; Peters et al. 1986). The learned section (section J) including general academic texts was removed from all the general corpora to avoid any overlapping topics in the general and medical corpora.

## *3.2 The Semantic Rating Scale*

The primary purpose of the semantic rating scale is to draw the line between (1) general purpose vocabulary, and (2) content area (technical) vocabulary in medical texts written in English. The scale was used to check the potential specialized words identified through the corpus comparison procedure. These potential specialized (medical) words need to be checked systematically to decide if they are truly specialized words. The starting point for the system was Chung and Nation's (2003) rating scale which was originally designed to identify the specialized vocabulary used in anatomy and applied linguistic texts. The Chung and Nation (2003) scale ranks words from the most general to the most specific, using a four step scale. This scale is useful for focusing on meaning as the main distinctive feature to classify the vocabulary in medical texts. For the purposes of our study, the Chung and Nation (2003) scale was simplified into two main levels: (1) general purpose vocabulary (Step 1 of Chung and Nation's rating scale) and (2) content area (technical) vocabulary (Steps 2, 3, and 4 of the same scale), as below:

1. *General purpose vocabulary* refers to the words needed to write or talk about a wide range of topics, disciplines or content areas. Chung and Nation (2003) defined them as words not semantically related to the particular specialized field they were investigating (anatomy). For instance, words like *because, outside, ignore* can be considered as general purpose words in medical texts.

**Table 5** Sub-levels of content area words in medical texts

| Sub-level 2.1 |
|---|
| Some topic-related words are also general purpose words used in the medical field with the same meaning they most frequently have in other general fields and everyday usage. Examples are words such as *nurse, pain.* |
| Sub-level 2.2 |
| Some topic-related words are general purpose vocabulary used in the medical field, but with a particular meaning not so frequently encountered in general fields and everyday usage. Examples are words such as *transcription, pressure.* |
| Sub-level 2.3 |
| Some topic-related words are associated with more than one particular specialized subject area with the same meaning. An expert in this particular field where these words come from would identify these words as words specific to their discipline. Examples are words such as *nitrogen, ethanol* from Chemistry; and *organisms, nature* from Biology. These words are also used to talk and write about health and medicine. |
| Sub-level 2.4 |
| Some topic-related words are unique to the medical field, and they are only associated with highly specialized medical topics. These medical words have a subject-specific meaning, and are very unlikely to be found in other disciplines. Examples of highly technical words in the medical field are *enteropathy* and *hemochromatosis.* |

2. *Content area (technical) vocabulary* refers to words whose meaning is related to a particular topic, discipline, field or subject domain. This content area vocabulary can include high, mid and low-frequency words.

The content or technical words display degrees of technicality, so it is useful to develop a scale to help decide how technical these words are. We can distinguish four sub-levels of such content area words related to the medical field (see Table 5). The criteria in Table 5 were used to decide whether (1) the words from the GSL, AWL, EAP Science List, and BNC/COCA lists and (2) the words in the medical word lists developed from the corpus comparison technique were general or medical words. The semantic rating scale enabled us to classify 32,194 word types in the medical (Med1) corpus as having medical meanings.

## 4 Results and Discussion

Here the lexical coverage of a set of well-known existing word lists such as the GSL, AWL, and EAP Science List over the medical and general corpora above mentioned is estimated. This particular set of high-frequency word lists was chosen because these lists have been traditionally used in several EAP and ESP studies. After that, the lexical coverage of a different set of existing high-frequency word lists (i.e., the first 3000 BNC/COCA word lists) is calculated. The decision to look at the lexical coverage of the first 3000 BNC/COCA lists is based on the findings of Dang and Webb's (2017) study. These authors reported that the headwords in the

**Table 6** Coverage of GSL, AWL and EAP Science List over Med1 and general corpora

| Word lists | # Types (med1) | # Types (general) | Med1% | General % |
|---|---|---|---|---|
| GSL 1000 | 3291 | 4053 | 55.62 | 76.79 |
| GSL 2000 | 2415 | 3605 | 5.97 | 5.79 |
| AWL | 2418 | 2830 | 8.23 | 4.24 |
| EAP Science List | 1288 | 1231 | 6.06 | 0.48 |
| Total | 9412 | 11,719 | 75.88 | 87.30 |

first 2000 BNC/COCA word lists tend to yield the highest coverage when compared with other existing high-frequency words lists.

Let's now look at the high-frequency items in the medical corpora, beginning with the existing high-frequency word lists.

### *4.1 What Is the Lexical Coverage of the GSL, AWL and EAP Science List over a Medical (i.e., Med1) Corpus and a General Corpus?*

Next, we compare the lexical coverage results of running the first thousand (GSL 1000) and second thousand (GSL 2000) of the GSL, AWL, and EAP Science List through the Med1 and general corpora, separately. The Range (Heatley et al. 2002) program was used to carry out the frequency comparison of these four lists in the medical and general corpora. The GSL, AWL and EAP Science List were used because these four lists together roughly include the first 3000 most frequent words in English, as mentioned above. Likewise, the AWL, and EAP Science List consist of general academic and scientific vocabulary that is very likely to be relevant (and be a shortcut) for EMP students reading medical texts.

Table 6 shows that the GSL lists cover much more of the general corpus than the medical corpus, and that the AWL and the EAP Science List cover more of the medical corpus than the general corpus.

Also, the consistently smaller number of word types in the Med1 corpus in comparison to the larger number of items in the general corpus illustrates the more restricted nature of the vocabulary found in this type of medical texts. An exception to this trend can be observed in the slightly larger number of word types (1288 vs. 1231) of the EAP Science List over the Med1 corpus. These results are useful, but they do not tell us about the semantic nature of all the word types occurring in the GSL, AWL, and EAP Science List. To do this, the semantic rating scale was applied.

To find out how many of the 32,194 medical word types appeared in the GSL, AWL and EAP Science List, we used Range (Heatley et al. 2002). We found that the EAP Science List contains the highest number of medical word types (64%) while the GSL 2000 has the lowest (10%) (see Table 7).

Out of the 2006 word types in the EAP Science List (from the 317 word families), a total of 1280 have a medical meaning (64%). This figure demonstrates the usefulness

**Table 7** Percentage of word types with medical meaning in the GSL, AWL, and EAP Science List

| Word lists | Percentage of words with medical meaning (%) | Percentage of words with general meaning (%) |
|---|---|---|
| GSL 1000 | 15 | 85 |
| GSL 2000 | 10 | 90 |
| AWL | 17 | 83 |
| EAP Science List | 64 | 36 |

**Table 8** Coverage of first 3000 BNC/COCA over the Med1 corpus and general corpus

| Word lists | # Types (med1) | # Types (general) | Med1% | General % |
|---|---|---|---|---|
| BNC/COCA 1000 | 3648 | 5924 | 51.96 | 75.59 |
| BNC/COCA 2000 | 3374 | 5435 | 11.68 | 8.55 |
| BNC/COCA 3000 | 3323 | 4981 | 10.46 | 4.89 |
| Total | 10,345 | 16,340 | 74.10 | 89.03 |

**Table 9** Percentage of word types with medical meaning in the first 3000 BNC/COCA List

| Word lists | Percentage of words with medical meaning (%) | Percentage of words with general meaning (%) |
|---|---|---|
| BNC/COCA 1000 | 15 | 85 |
| BNC/COCA 2000 | 13 | 87 |
| BNC/COCA 3000 | 17 | 83 |

of the EAP Science list for EMP learners, because it is a small list with a high number of medical word types (Coxhead and Quero 2015). The GSL is often criticized because of its age (see Read 2000, for example), so we investigated the first 3000 word lists of Nation's (2012) BNC/COCA lists to compare these general word lists.

## *4.2 What Is the Lexical Coverage of the First 3000 BNC/COCA Lists over a Medical (i.e., Med1) Corpus and a General Corpus?*

The lexical coverage of the first 3000 BNC/COCA lists is higher over the general corpus than the medical corpus, illustrating the general nature of these word lists. Note in Tables 5 and 8 that the first 1000 of the GSL has a slightly higher coverage over the medical corpus than the first 1000 of the BNC/COCA list (i.e., 55.62% for GSL 1000 vs. 51.62% for BNC 1000). The BNC/COCA 2000 and BCN/COCA 3000 contain a higher proportion of frequent words in medical texts (see Table 8).

When we analyze the percentage of word types with medical meaning in the first 3000 BNC/COCA lists, using the semantic scale, (see Table 9), we can see that the BNC/COCA 3000 list contains the highest percentage of medical word types (17%)

**Table 10** Coverage of the top 3000 general word types in both the Med1 and general corpora

| Word list | Med1% | General % | Example |
|---|---|---|---|
| GENM 1000 | 56.55 | 54.99 | Important, days |
| GENM 2000 | 3.60 | 8.63 | Reasonable, difference |
| GENM 3000 | 1.32 | 4.10 | Team, ends |
| Total | 61.47 | 67.72 | |

of these three BNC/COCA lists. The BNC/COCA 3000 has 2% higher than the percentage of word types in the BNC/COCA 1000.

Overall, the lexical profile results of the GSL/AWL/EAP Science lists and the BNC/COCA lists highlights the narrowly-focused nature of the word types in the Med1 corpus. It also shows that the GSL/AWL/EAP Science lists contain higher percentages of words with medical meanings than the BNC/COCA lists. That said, this research also shows that a large number of lexical items in these word lists are not medical, and there is room for the development of a high-frequency word list for EMP based on medical textbooks.

### *4.3 What Are the 3000 Words with the Highest Coverage on Medical Texts?*

In an attempt to look for the most efficient way to sequence the learning of high-frequency words for readers of medical textbooks, now we focus on the identification of the first 3000 word types that provide the greatest return for learning. That is, the smallest number of word types to obtain the highest coverage results over medical textbooks, for the benefit of EMP learners. With this purpose in mind, we created three sets of high-frequency word types in medical texts:

1. the most frequent 3000 word types with general meaning occurring both in the medical and general corpora (hereafter GENM),
2. the most frequent 3000 word types with medical meaning occurring both in the medical and general corpora (hereafter MEDG) and
3. the first 3000 word types with medical meaning occurring only in the medical corpus (hereafter MED).

In all cases, these three sets of word lists were ranked by the highest frequency in the medical corpus. The word type is the unit of counting for grouping the items and estimating the lexical coverage of these three sets of high-frequency word lists. The first analysis looked at the most frequent 3000 word types with general meaning occurring both in the medical and general corpora. Table 10 shows that the highest coverage of the general words occurring in both the medical and general corpora is yielded by the GENM 1000 list (56.55% in Med1 vs. 54.99% in general).

This same trend of the most frequent word list providing the highest coverage of the three lists, is predictively observed in the other two sets of word lists by the MEDG 1000 list (21.40% in Med1 vs. 4.10% in general) (see Table 11) and MED 1000 (5.29%) (see Table 12).

**Table 11** Coverage of the top 3000 medical word types occurring in both the Med1 and general corpora ranked by frequency in the Med1 corpus

| Word list | Med1% | General % | Example |
|---|---|---|---|
| MEDG 1000 | 21.40 | 4.10 | Disease, treatment |
| MEDG 2000 | 2.88 | 1.00 | Dehydration, vertigo |
| MEDG 3000 | 1.10 | 0.82 | Radicals, starvation |
| Total | 25.38 | 5.92 | |

**Table 12** Coverage of the top 3000 medical word types occurring only in the Med1 corpus ranked by frequency in the Med1 corpus

| Word list | Med1% | Example |
|---|---|---|
| MED 1000 | 5.29 | Hepatic, neurologic |
| MED 2000 | 1.51 | Cryptococcosis, prostatitis |
| MED 3000 | 0.84 | Inhalational, multinucleated |
| Total | 7.64 | |

**Table 13** Coverage of the most frequent 3000 word types occurring in the Med1 corpus

| Word list | Med1% |
|---|---|
| GENM 1000 | 56.55 |
| MEDG 1000 | 21.40 |
| MED 1000 | 5.29 |
| Total | 83.24 |

The GENM 1000 list with a coverage of 56.55%, the MEDG1000 list with a coverage of 21.40% and the MED 1000 list with 5.29% provide a cumulative coverage of 83.24% (Table 13). This coverage figure can be increased by grouping these lists into word families (from level 2 up to level 7; Bauer and Nation 1993). For Nation (2016), the decision on the best unit of counting for a particular group of learners needs to be based on the level of word knowledge they are expected to have.

The lexical coverage results of these three sets of word lists indicate that including the most frequent word list from each set provides the best return for learning. That is, the highest lexical coverage with the smallest number of word types. Appendices 1, 2 and 3 contain the first 100 words of the GENM 1000, MEDG 1000 and MED 1000 lists for reference.

## *4.4 What Is the Behavior of the Newly Created High-Frequency Word Lists on a Different Medical Corpus (i.e., the Med2 Corpus)?*

The main purpose for validating the new high-frequency word lists (see Table 14) in medical textbooks is to investigate the behavior of this new set of high-frequency word lists in medical texts in a different medical corpus (the Med2

**Table 14** Comparison of the coverage of the most frequent 3000 word types over the Med1 and Med2 corpora

| Word list | Med1% | Med2% |
|---|---|---|
| GENM 1000 | 56.55 | 55.44 |
| MEDG 1000 | 21.40 | 20.62 |
| MED 1000 | 5.29 | 4.24 |
| Total | 83.24 | 80.30 |

corpus). Table 14 shows that the lexical profiles of the new word lists over the Med1 and Med2 corpora are similar across the three new word lists, with a total coverage of 83.24% over the Med1 corpus and 80.30% over the Med2 corpus, and in each case, the coverage of each 1000 word list is higher over the source corpus than the validation corpus.

The cumulative coverage figures of running all the word lists through the two medical corpora yield a 2.94% difference in the total coverage between the two corpora. In short, these results demonstrate that the high-frequency word lists created as part of this investigation can be confidentially used to obtain reliable estimates of the high-frequency vocabulary in medical textbooks.

### *4.5 What Are the Implications of the Findings for ESP?*

The twofold (i.e., corpus comparison and semantic rating scale) approach adopted here for identifying the most frequency vocabulary in medical texts can also be used to construct high frequency words in other disciplines. The value of this methodology lies mainly in the fact that high-frequency word lists from a specialized subject area, such as the word lists created as part of the present investigation, provide the best return (that is, the smallest number of word types to obtain the highest lexical coverage) for high-frequency vocabulary learning and teaching in ESP. They provide a good lexical shortcut to discipline-specific word lists. Let's turn now to integrating the findings from this study into an ESP course.

## 5 Integrating the Findings into an ESP Course for Medical Students

From a pedagogical perspective, we believe that it is important that the ESP teachers approach vocabulary instruction of this high frequency vocabulary in a way that focuses students' attention on the vocabulary that is worth learning. The newly created set of high-frequency words in medical texts confirms the important role played by the high-frequency general academic, scientific, and technical words in medical texts. In order to help EMP learners cope better with the lexical demands of high-frequency vocabulary in medical texts, as shown by the results of the present study, EMP teachers need to perform various roles in the language classroom. According to Nation (2008, p. 1), the vocabulary teacher's jobs in order of importance are as follows: planning, strategy training, testing and teaching vocabulary.

## 5.1 Planning the Vocabulary Component of an English for Medical Purposes (EMP) Reading Course

According to Nation (2008, 2013), planning is the first and most important role of the L2 teacher. Planning is crucial when designing the lexical component of a language course, and involves deciding what needs to be learnt and how it is best learnt. It is useful for EMP teachers to gather information on the types of words occurring in medical texts, and the learning burden of the words chosen to be focused on in the EMP classroom. For learners who have a special purpose for learning English, a specialist focus reduces the amount of vocabulary to learn by avoiding general purpose vocabulary that is not relevant to the specialized subject area.

However, the learning of technical terms is not easily done in isolation, because in order to understand the terms, we need to understand the field of knowledge that they represent. This means that English teachers who are providing courses to support the study of medicine should largely focus their attention on developing the learners' skill in applying strategies to deal with the vocabulary they meet during their study.

### 5.1.1 The Four Strands of a Well-Balanced EMP Reading Course

The vocabulary component of a language course is only one part of that course. When planning a well-balanced course, there is value in considering the four strands of a language course, namely, meaning-focused input, meaning-focused output, language-focused learning, and fluency development (Nation 2007). Likewise, when planning the lexical component of an EMP course these four strands can be considered. In this respect, Nation (2013, p. 204) suggests that "when looking at the learning of a particular skill like reading, it is useful to look at what can make up such a course across the four strands."

Table 15 below includes some useful activities suggested by Nation (2008, 2013) for teaching vocabulary and reading that are also worth considering when planning an EMP reading course. In such a course, much of the time spent on meaning-focused output in a general course would be largely spent on meaning-focused input.

Nation (2013) repeatedly emphasizes the importance of maintaining a balance between the four strands of a course when looking at language learning in general, the learning of a specific language skill like reading, or the learning of specialized vocabulary from a particular subject field like medicine. In relation to the reading skill and the four strands, Nation (2013) recommends that 50% of the time in a reading course should be spent on meaning-focused input activities; that is, EMP learners should spend about half of the time paying attention to the message of their EMP readings.

Meaning-focused output activities can be promoted by encouraging EMP students to have group discussions and to prepare talks on the medical topics that they have been reading about. Learning activities in the language-focused output strand may

**Table 15** Suggested activities in an EMP reading course for each of the four strands

| Four strands | Examples of activities that can be used in an EMP reading course |
|---|---|
| *Meaning-focused input* focuses the learner's attention on the message of the reading materials | Extensive reading of medical texts |
| | Reading adapted medical texts |
| | Paired and group reading |
| *Meaning-focused output* focuses the learner's attention on discussing the messages of the written texts with others | Exchange of information on what was read or written |
| | Prepared talks |
| | Writing tasks |
| *Language-focused learning* focuses the learner's attention on the linguistic features of the written texts | Intensive reading of medical texts |
| | Deliberate study of reading strategies and vocabulary strategies |
| | Deliberate learning of vocabulary for reading medical texts |
| | Using word cards |
| *Fluency development* focuses the learner's attention on developing reading fluency | Speed reading |
| | Repeated reading |
| | Linked skills activities |

include the use of word cards or mnemonic techniques to deal with the learning of new medical words, and should certainly involve intensive reading of medical texts.

A total of 25% of the time in a course should be spent on fluency development. A way to promote fluency development is by engaging learners in linked skill activities. This type of activity provides opportunities for repeated encounters, through reading, writing, listening or speaking, with easy and familiar topic-related texts. The main goal of these repeated and linked skill activities is to encourage faster processing and faster retrieval of language items. See Hirsh and Coxhead (2009) for suggestions on using the four strands with specialized vocabulary.

## *5.2 Strategy Training for an EMP Reading Course*

Another role of the ESP teacher is strategy training. The most productive strategies for specialized medical vocabulary are likely to be (1) making use of definitions which occur in the text (a large proportion of technical words are defined as they occur in the text or through their appearance in diagrams and pictures), (2) making use of prefixes, suffixes and stems to reduce the learning burden of technical terms, (3) drawing on known cognates between the L1 and English, (4) making use of deliberate learning strategies such as flash cards and flash card programs, and (5) making use of medical dictionaries not only to look up the meanings of words but to make these lookups memorable.

## 5.3 Testing the Vocabulary Component of an EMP Reading Course

In descending order of importance vocabulary testing should be the third focus of a language teacher, after planning and strategy training. It is worth monitoring learners' vocabulary growth both as a way of motivating their learning and seeing how close they are getting to having sufficient knowledge of medical terms. See File (2014) for an example of a low risk vocabulary test which could be adapted for specialized vocabulary.

## 5.4 Teaching the Vocabulary Component of an EMP Reading Course

The fourth role of the L2 teacher is actually teaching. Vocabulary teaching can have the following focuses:

1. *Teach useful word parts.* By conducting word part analysis when teaching vocabulary, language teachers bring the learners' attention to frequent prefixes, suffixes and stems in medical texts. This gives learners the possibility of understanding a wider range of medical words using the same affixes.
2. *Teach high-frequency words that occur in medical texts.* This implies the rearranging of general, academic, and specialized word lists to include only the general and medical words occurring in medical texts. Once EMP students know the most frequent words in medical texts, the relisting of general and medical words based on their frequency and distribution, as well as the exclusion of general words that do not occur in medical texts, definitely increases the possibilities of focusing earlier on the medical words waiting to be learnt.
3. *Present the vocabulary in manageable formats.* Ideally, the focus on medical vocabulary should accompany the reading of medical texts. The frequent unknown words in the texts should then be the words focused on. Research on interference between items in lexical sets (Erten and Tekin 2008; Tinkham 1993, 1997; Waring 1997) shows that bringing related words together makes learning more difficult. It is safer to focus on vocabulary as it occurs in texts than to bring closely related items together.
4. *Promote the use of a variety of reference sources.* Show students various written sources (e.g., specialized dictionaries, glossaries, concordances, topic-related lists of words, affixes, abbreviations or acronyms) or more informal oral sources (e.g. other teachers, specialists in the field, native speakers or other learners).
5. *Present medical words in relevant topic-related contexts.* Introduce the meaning and use of medical words in meaningful contexts.

6. *Draw attention to words within their typical phraseological patterns.* It is important to look at the role played by medical words considering the context and phraseological patterns (such as definition, classification, process, description, comparison/contrast, cause/effect, problem/solution, and ordering) commonly used to organize the information in expository medical texts. For example, definitions are frequently found in medical writing, EMP students should be encouraged to identify and become familiar with the different ways how definitions are presented in medical texts.
7. *Promote extensive reading on medical topics.* EMP students should be encouraged to do extensive reading on topics that include the vocabulary they are trying to learn.
8. *Promote repeated encounters with useful words.* Repetition is important in helping strengthen word knowledge. By rereading familiar texts with known words, or reading different texts on the same topic, or using online concordance tools like WebCorp Live (http://www.webcorp.org.uk/live/), learners have practical opportunities to have repeated instances of words and phrases that need to be reinforced in appropriate topic-related contexts.

See Coxhead (2015) for more on teaching suggestions for specialized vocabulary.

The teaching in the EMP classroom can only cover a small proportion of medical words that need to be learnt. For this reason, it is important that the EMP teacher sets ambitious vocabulary learning goals for the students.

## 6 Conclusions

Throughout the present chapter we have looked at the most effective high-frequency word lists to move from learning more generally useful vocabulary as represented by the existing word lists, namely, the GSL, AWL and EAP Science List to focusing solely on frequent vocabulary occurring in medical texts. This change of focus enables both teachers and learners of ESP to concentrate on the teaching and learning of (1) appropriate useful general, academic, and technical words, (2) words that yield a good lexical text coverage in a particular discipline, and (3) the smallest number of word types with the highest lexical coverage. In other words, time is not spent teaching and learning words that do not occur in the medical texts.

In sum, it is essential for EMP teachers to promote the development of a variety of skills that equip medical students with goals, strands, testing, and strategies necessary to manage the acquisition of the enormous amount of words required to achieve good reading comprehension of medical textbooks. High-frequency vocabulary items with medical meanings identified in general and specific word lists can provide some shortcuts to learning and are vitally important for laying a solid foundation of medical word knowledge.

# Appendices

## *Top 100 GENM word types*

| | |
|---|---|
| the | increased |
| of | table |
| and | cases |
| in | severe |
| to | levels |
| is | who |
| a | all |
| with | include |
| or | used |
| are | during |
| for | use |
| be | no |
| as | however |
| by | although |
| may | only |
| that | including |
| an | they |
| have | there |
| can | both |
| from | their |
| not | years |
| on | low |
| at | many |
| this | present |
| most | into |
| but | type |
| these | specific |
| should | less |
| has | occurs |
| other | primary |
| which | well |
| also | those |
| been | loss |
| it | causes |
| more | small |
| such | agents |
| associated | studies |
| than | due |
| risk | its |
| usually | response |
| after | important |
| if | days |
| common | early |
| often | within |
| when | women |
| because | effects |
| chapter | individuals |
| high | about |
| cause | without |
| some | increase |

## *Top 100 MEDG word types*

| | |
|---|---|
| patients | time |
| disease | lung |
| treatment | see |
| therapy | virus |
| infection | cardiac |
| cells | tumor |
| cell | factor |
| clinical | gene |
| patient | care |
| blood | muscle |
| diagnosis | hosts |
| acute | oral |
| syndrome | inflammatory |
| normal | manifestations |
| symptoms | secondary |
| chronic | tumors |
| renal | respiratory |
| occur | hepatitis |
| pain | abnormalities |
| infections | receptor |
| one | hypertension |
| drug | plasma |
| pulmonary | positive |
| result | mutations |
| cancer | life |
| lesions | human |
| failure | fluid |
| function | elevated |
| liver | immune |
| dose | treated |
| disorders | health |
| serum | body |
| bone | children |
| skin | anemia |
| heart | surgery |
| protein | infected |
| drugs | vascular |
| two | disorder |
| tissue | addition |
| pressure | doses |
| factors | volume |
| age | ventricular |
| first | injury |
| rate | adults |
| results | brain |
| deficiency | peripheral |
| seen | medical |
| host | diabetes |
| diseases | genetic |
| acid | calcium |

## *Top 100 MED word types*

| | |
|---|---|
| systemic | dementia |
| hepatic | thrombocytopenia |
| neurologic | corticosteroids |
| myocardial | metastases |
| edema | esophageal |
| aortic | resection |
| asymptomatic | glomerular |
| ischemia | bilirubin |
| cutaneous | bacteremia |
| autosomal | hemolytic |
| neuropathy | parenteral |
| proximal | extracellular |
| endocarditis | neutrophils |
| pancreatic | creatinine |
| antigens | angiotensin |
| stenosis | histologic |
| pathogenesis | serologic |
| lymphocytes | pneumoniae |
| acidosis | nodules |
| ischemic | sarcoidosis |
| idiopathic | hypercalcemia |
| glucocorticoids | cortisol |
| airway | hemorrhagic |
| hypotension | cardiomyopathy |
| pancreatitis | sputum |
| prophylaxis | aldosterone |
| vasculitis | endoscopic |
| mucosal | autonomic |
| cytokines | hypersensitivity |
| hemoglobin | cobalamin |
| heparin | lymphadenopathy |
| physiologic | assays |
| mitral | ataxia |
| regimens | transcription |
| tachycardia | anatomic |
| estrogen | folate |
| alveolar | pharmacologic |
| epithelial | hemolysis |
| macrophages | echocardiography |
| lupus | intravascular |
| lipid | subcutaneous |
| recessive | immunocompromised |
| pleural | immunoglobulin |
| endothelial | phenotype |
| randomized | myeloma |
| dyspnea | androgen |
| mucosa | colitis |
| hypoglycemia | effusion |
| pathobiology | hypothalamic |
| kinase | malabsorption |

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# Selecting Corpus-Based Grammatical Structures for ESP/EAP Materials

**Hossein Farhady, Kobra Tavassoli, and Fariba Haghighi Irani**

**Abstract** Using corpus-based data to access authentic materials for instructional purposes has been receiving increasing attention in language education (Barnard R, Zemach D, Developing materials for language teaching. In: Tomlinson B (ed) Materials for specific purposes. Continuum, London, pp 306–323, 2003). However, despite considerable advancements in corpus-based vocabulary studies (Coxhead A, TESOL Q 34(2):213–238, 2000; TESOL Q 45(2):355–362, 2011), not much has been accomplished regarding the selection and incorporation of grammatical structures in ESP/EAP materials (Kennedy G, An introduction to corpus linguistics. Longman, London/New York, 1998). One reason might have been, in addition to the complexity of analyzing a corpus for grammatical structures, the common belief that different disciplines in ESP/EAP utilize different and diverse grammatical structures (Hyland K, Engl Specif Purp 4:149–161, 2002). Therefore, this study was designed to shed some light on the issue and to identify the most significantly frequent grammatical structures in ESP/EAP disciplines. To this end, first, a taxonomy of ESP/EAP disciplines was prepared using information from the literature on the history of classifications of science branches and existing ESP/EAP taxonomies. Cross checking the taxonomy with the university majors, a list of 6 macro disciplines with 29 micro disciplines and 399 university majors was prepared. Second, using a few software, a 150-million-word corpus that was collected from authentic ESP/EAP materials on these disciplines was analyzed for grammatical structures. Third, common grammatical structures with significant frequencies in each field were identified using Chi-square statistics. The findings revealed that contrary to the

H. Farhady (✉)
Yeditepe University, Istanbul, Turkey
e-mail: hossein.farhady@yeditepe.edu.tr

K. Tavassoli
ELT Graduate Department, Karaj Branch, Islamic Azad University, Karaj, Iran
e-mail: kobra.tavassoli@kiau.ac.ir

F.H. Irani
Islamic Azad University, Tehran, Iran
e-mail: far_haghighi@yahoo.com



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common expansionist view that ESP/EAP fields use diverse grammatical structures, many disciplines use a set of limited number of grammatical structures. The findings are promising for developing instructional materials and designing teaching strategies.

**Keywords** Materials development · Authentic materials · Corpus collection · Corpus analysis · ESP/EAP · Grammatical structures

## 1 Introduction

It is believed that the field of ESP/EAP has been evolving around three general dimensions of specifications, namely the specification of learner needs, the specification of the target situations where the learners are expected to use language, referred to as disciplines, and the specification of the content of the instructional materials for the disciplines. The field has witnessed remarkable developments since 1960s and early 1970s on all three dimensions intended to achieve communicative goals of language teaching in an economical way by focusing on learners' needs (Hutchinson and Waters 1993; Hyland 2006). One direction of progress intended to facilitate achieving such an ambitious goal was to reexamine, redesign, and replace the instructional materials offered in ESP courses believing that using appropriate, especially authentic materials would bridge the gap between learners and teachers (Hamp-Lyons 2011; Harwood and Petric 2011; Nour El imane 2013). In fact, it is commonly believed that appropriate ESP courses designed based on authentic materials can help students' transition from general English to ESP, and make them more competent in reading and writing in their specific disciplines (Also see Stoller and Robinson, chapter "Innovative ESP Teaching Practices and Materials Development" this volume).

In addition, the advent of technology facilitated accessing authentic materials by using and analyzing large corpora that led to another dimension of research in selecting authentic instructional materials. However, due to varying degrees of complexity in analyzing the corpus, such studies have not been evenly distributed among language components. For instance, work on vocabulary took precedence and corpus-based vocabulary lists became quite widespread. Examples include academic vocabulary lists (Coxhead 2000; Nation 2006), varieties of dictionaries, and frequency lists of idioms (Conrad 2005). However, despite the growing interest in teaching grammar in communicative contexts in recent years (Kern 2013; Stranks 2013; Yin 2016), not much of serious research is reported on the selection and incorporation of corpus-based grammatical structures in ESP/EAP instructional materials (Kennedy 1998).

To address the issue, this paper is a report on a research project designed for selecting corpus-based grammatical structures for different ESP/EAP disciplines at the university level. More specifically, first, an overview of relevant corpus-based

studies used for selecting authentic materials in ESP/EAP is provided. Second, the process of domain specification and preparing a taxonomy of ESP/EAP fields is explained. Third, the process of collecting and analyzing a 150-million-word corpus on the specified domains and disciplines is discussed. Finally, the findings of the corpus analysis regarding the most significantly frequent grammatical structures are presented and applications and implications of the findings are discussed.

## 2 An Overview of the Corpus-Based Studies in ESP/EAP

Using corpus-based materials has been quite popular because it is believed that a corpus is a more reliable guide than human intuition to what language is like (Harwood and Petric 2011; Hyland 2006). As Hyland (2006) argues, "even the best teachers are often unable to explain to their students why some phrasing or expression is preferred over another in a given context" (p. 58). On the other hand, corpus analysis provides materials developers with authentic information about the frequency of words and structures that would help learners move towards meaningful communication in the target language use contexts (Hamp-Lyons 2011; Kern 2013; Tomlinson 2013). Therefore, corpus compilation projects of different sizes have been designed and conducted for a variety of purposes to serve as the sources of information in preparing authentic materials.

Along with the popularity of corpus collection projects, various types of software have been developed to analyze corpora. Among the corpus analysis tools, concordancing has been frequently and extensively used in ESP/EAP contexts to help materials developers in selecting language items for instruction (Conrad 2005; Flowerdew 1998; Jafarpour and Boroujeni 2005; Kern 2013; Thurnstun and Candlin 1998). Concordancing provides teachers with useful information regarding the frequency and content of lexico-grammatical patterns occurring in natural language environments. This is particularly important for ESP teachers as many of them are directly involved in designing materials and courses relevant to the needs of their particular students (Also see Basturkmen and Bocanegra-Valle, chapter "Materials Design Processes, Beliefs and Practices of Experienced ESP Teachers in University Settings in Spain" this volume. In addition, concordancing reveals discrepancies between authentic language use and the recommended patterns to ESP/EAP students regarding vocabulary and grammar (Thurnstun and Candlin 1998). As Kern (2013) states, the results of concordance studies were used in many cases for developing instructional materials in ESP contexts. Examples include Johns (1991) who used concordancing for teaching postgraduate ESL students and Thurnstun and Candlin (1998) who used concordancing in developing vocabulary materials for classroom use.

Besides, using corpus-based data, some scholars have developed discipline-based wordlists in a variety of fields such as engineering, nursing, and medicine (Harwood and Petric 2011) believing that such academic lists would enable teachers to prioritize the specific technical items in specific disciplines. Further, it is believed

that a list of high-frequency words in a specific discipline can provide some shortcuts to learning for the students (Also see Quero and Coxhead, chapter "Using a Corpus-Based Approach to Select Medical Vocabulary for an ESP Course: The Case for High-Frequency Vocabulary" this volume. In fact, the idea of developing discipline-specific wordlists is supported by Durrant (2009) and Hyland and Tse (2007) who argued that academic vocabulary varies across disciplines. That is probably why developing new vocabulary lists has continued. For example, Lei and Liu (2016) have recently developed a new Medical Academic Word List (MAWL) by combining Gardner and Davies' (2014) method with Coxhead's (2000) wordlist. They claim that the new list is shorter than the previous ones and better serves the needs of medical English learners. In addition to concordancing, varieties of other software programs have been developed to supplement and improve concordance programs. Examples are *WordSmith tools* and *MonoConc Pro*, web-based concordance programs such as *Wmatrix* and *Just the Word*, open slot patterns such as *KfNgram* and *ConcGrams*, programs for showing semantic associations like *WordNet*, and experiment generator packages such as *E-Prime* and *DMDX* (Schmitt 2010).

However, despite the growing interest in pedagogical applications of corpus-based materials and its advantages, it has been under criticism from various aspects as well. The first line of argument has addressed the issue of authenticity that has been claimed to be a significant feature of corpus-based materials. Prodromou (1996a and 1996b cited in Adolphs and Lin 2011) argues that authentic language is not always interesting for language learners because the real discourses such as advertisements or train timetables are meaningful only to the speakers of their own speech community. He believes that authenticity is a matter of 'here and now' and when it is presented in a corpus, it automatically loses its naturalness. Similarly, Widdowson (2000 cited in Adolphs and Lin 2011) shows concern about the decontextualization of the corpus-based materials and their lack of authenticity. He believes that corpus-based data is partially real and needs to be recontextualized for language learners. He further warns that the reconstructed context is not always the same as the original one. Along the same lines, some scholars including Barnard and Zemach (2003) and Tsou and Chen (2014), while appreciating the importance of authenticity, suggest that the selected texts should be manipulated and reproduced so that they can be understood by ESP learners. On the other hand, proponents of authentic texts suggest differentiating the complexity of the tasks associated with texts instead of manipulating the content of the texts (Adolphs and Lin 2011). They claim that in developing ESP/EAP materials, it is not easy to design materials to meet all the criteria relevant to real-life situations, language teaching principles, and learners' needs. The field needs more research and discussion on the issue to come up with a consensus.

The second line of argument against corpus-based materials is the unpreparedness of the field to utilize the findings of corpus analysis efficiently. Although Adolphs and Lin (2011) claim that corpus is increasingly becoming an accepted basis for the development of English language teaching materials, some scholars believe that corpus-based materials have not been implemented enough in the field

of language education. They believe that even though recent advancements and facilities in corpus analysis have been directing materials developers towards incorporating more data-driven materials into instructional textbooks (Basturkmen 2006; Hyland 2006; Tomlinson 2013), ESP/EAP has not been much concerned with these opportunities since many ESP/EAP textbooks are still being written based on the writers' experience and intuition (Flowerdew 1998). They also argue that there are still considerable mismatches between naturally occurring language in a corpus and the grammatical models presented in instructional textbooks (Romer 2006 cited in Tomlinson 2013). Kern (2013), in line with Thompson (2006) believes that despite having many corpora available online freely and despite having easy access to corpus analysis tools, there seems to be a lack of knowledge among ESP/EAP teachers about the principles of corpus creation, the criteria for evaluating the data extracted through concordancing, and the appropriate use of corpus-based data both in classroom and in materials development. Some scholars like Timmis (2013) attributes a type of 'resistance' in language teachers and practitioners in applying corpus-based data in teaching materials.

The third line of argument directly addresses the issue of overemphasis on the findings of concordance studies. For example, as early as 1991, Widdowson argued that only frequency of certain aspects of language in a corpus cannot be taken as a criterion in giving priority to them in the language teaching syllabuses. Further, Conrad (2005) shows concern with the lack of corpus-based materials on other aspects of language beyond vocabulary. He attributes some parts of this gap to the fact that many areas of language especially grammatical structures do not lend themselves to the analysis with concordancing software. For instance, he refers to the analysis of adverbials like *therefore* that includes associations among several variables and is difficult and time-consuming to be analyzed either mechanically or automatically. That is why some scholars have called for more efforts on developing software programs for analyzing grammatical structures. Although prominent works have been done on developing reference books on grammar, such as the *Survey of English Usage Corpus* and the *Longman Grammar of Spoken and Written English* (Harwood and Petric 2011), none suggests the procedures of the selection of structural patterns for developing materials. In addition to the complexity of corpus analysis for grammatical structures, one reason may be the overemphasis of vocabulary over grammar by scholars (Schmitt 2010).

From the arguments, both in favor and against corpus analysis, it can be concluded that there is still need for more empirical studies on preparing and using corpus-based materials for teaching grammatical structures and the order in which they should be taught. As Widdowson (1990 cited in Stranks 2013) states, materials for grammatical structures should not be limited to practices on forms but should be directed towards developing contextualized materials with focus on meaning. Besides, it is worth mentioning that using corpora and technological advancements does not dictate the practitioners how to select appropriate materials or how to teach them. Materials writers need to use information obtained from corpus analysis by integrating their logical and intuitive judgement in designing instructional materials. Therefore, one of the issues that needs attention is to determine the specific

target situation language use contexts to make the instructional materials specific to those contexts. That is, identifying the diversity of target situation contexts seems important to make the materials as specific to those situations as possible. In the next section, the procedures for determining the variety of contexts, referred to as domain specification, is explained.

## 3 Domain Specification: Developing the ESP/EAP Taxonomy of Disciplines

Most scholars would agree that ESP is built on the concept of specification of various dimensions of instruction to make the teaching and learning experience as effective as possible (Dudley-Evans and St John 1998; Hyland 2006). In the process of materials development in ESP, one of the important dimensions of specification is 'Domain 'Specification', which refers to specifying the target situation domain, area, discipline, or major field of study where learners will use the language. The assumption is that the kind of language used in each domain is specific to that domain. Although scholars have documented different domains such as EAP, EOP (English for Occupational Purposes), EPP (English for Professional Purposes) in the ESP field, a comprehensive taxonomy that is developed by triangulation of data from multiple sources does not exist yet. Therefore, it was necessary to explore the diversity of the domains for which instructional materials should be developed before collecting and analyzing the corpus. To this end, three sources of data were explored.

The first source of information to refer to was a review of the historical development of science classifications documented by scholars and philosophers along with the information provided in Encyclopedias of Encarta, Britannica, Eurasia, Macmillan, and Random House. All the disciplines mentioned in different classifications (Dampier 1942; Durant 1927; Nordwall 1980; Sarton 1952; Watkins 2003) were documented. Then, the frequency of each discipline across classifications was counted and a list of disciplines was prepared. The second source of information to examine was the existing taxonomies suggested in the ESP/EAP literature (Flowerdew and Peacock 2001; Hutchinson and Waters 1993; Jordan 1997; Strevens 1980; Widdowson 1984). All the taxonomies were cross checked, refined, and merged to prepare the second list of disciplines. The third source of information to examine was the number of disciplines or majors for which main universities admitted students at the undergraduate levels and to prepare the third list of disciplines.

It should be mentioned that all pieces of information from different sources were documented following a non-interventionist approach. That is, no value judgement was exercised or justification was made on the accuracy or validity of the classifications. The main purpose was to prepare as comprehensive a list of target language use domains as possible and leave the validity question to corpus analysis results. Therefore, the three lists were carefully examined, the differences and the common-

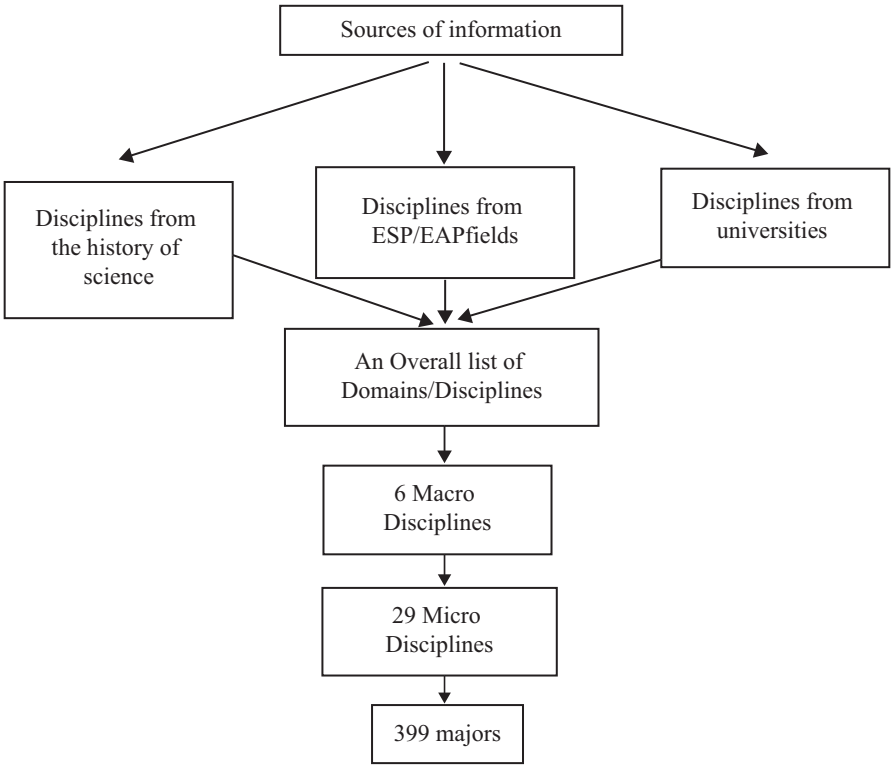


**Fig. 1** Schematic representation of the domain specification stage

alities were identified and repetitious names and categories were eliminated. Finally, they were merged to prepare the intended comprehensive taxonomy of the disciplines. An example may help clarify the procedures. A main category mentioned in most of the classifications was 'Art Sciences' with many sub-disciplines such as 'architecture', 'music', etc. under this main category. To provide an easy reference to these categories, the main area, i.e., 'Art Sciences' was named 'macro discipline' and its subcategories, i.e., 'architecture', etc. were named 'micro disciplines'. Besides, within micro disciplines, the university 'majors' were listed. Figure 1 shows the schematic representation of the 'Domain Specification' hierarchy.

In the overall taxonomy, there were 6 macro disciplines including *Art Sciences*, *Earth Sciences*, *Life Sciences*, *Physical Sciences*, *Social Sciences*, and *Technology*, each including some micro disciplines. Under these macro disciplines, there were 29 micro disciplines with 399 university majors. Table 1 below shows the macro disciplines along with their corresponding micro disciplines and the number of university majors in each micro discipline shown in parentheses. This data-driven taxonomy served as the basis for collecting the corpus for this research which is explained below.

**Table 1** Overall taxonomy of domains/disciplines

| Macro disciplines | Micro disciplines and university majors shown in parentheses |
|---|---|
| Art Sciences | Architecture (7), Music (4), Theatrical sciences (2), Visual arts (11) |
| Earth Sciences | Agriculture (37), Geographical sciences (13), Geological sciences (8) |
| Life Sciences | Biological sciences (20), Medical sciences (21) |
| Physical Sciences | Chemistry (19), Mathematics (4), Physics (5) |
| Social Sciences | Applied linguistics (23), Economics (14), Education (11), History (10), Law (9), Management (5), Military sciences (7), Philosophy (8), Physical education (2), Political sciences (11), Psychology (6), Religion (16), Sociology (10) |
| Technology | Computer (8), Electronics (14), Engineering (78), Mechanics (16) |

## 4 Corpus Collection and Analysis

Specifying the content of the instructional materials, known as 'Content Specification', is closely related to and follows the findings of the domain specification. It is another important step during materials development in ESP/EAP because the frequency and the diversity of the disciplines serve as the basis for collecting corpus on the disciplines. In this project, the corpus was collected from authentic and representative materials on the 29 micro disciplines within the 6 macro disciplines. The size of the corpus for each micro discipline was set at minimum 5 million words to ensure its authenticity and representativeness. The resultant corpus was therefore more than 150 million words. In the collection process, various Internet engines and databases were used by a team of trained researchers. The corpus was collected from authentic sources including e-books, professional journals, published articles, unpublished theses, dissertations, and reports.

Once the corpora were collected, the advertisements, diagrams, pictures, etc. were deleted because they did not include language relevant to the related micro discipline. In addition, the different electronic formats of the corpora including WORD, PDF, HTML, etc. were converted into TEXT format to be used in the intended software programs for analysis. Then, the corpus was analyzed for grammatical structures. Literature on the analysis of grammatical structures was not conclusive (Harwood and Petric 2011; Hyland 2006; Kennedy 1998), and many issues have remained unanswered regarding intra- and inter-disciplinary comparisons of the grammatical structures. Nor were there conclusive research reports concerning the differences between grammatical structures used in academic versus general purpose texts. Therefore, the focus of corpus analysis in this project was to prepare a frequency list of grammatical structures used in the corpus of each micro discipline.

To be as systematic as possible in the process of corpus analysis and to avoid potential pitfalls, first, a comprehensive list of grammatical structures was prepared based on the available grammar reference books (Biber et al. 1999; Frank 1993; Hewings 1999; Parrott 2000; Schrampfer Azar 1989; Swan 1995). The list was revised and finalized by experts in successive meetings and the finalized list with 59

grammatical structures was prepared and used for analyzing the corpus. Meanwhile, efforts were made to find appropriate software programs capable of analyzing large corpora for many grammatical structures in the finalized list. Examining the capabilities of different software programs, *MonoConc Pro, MP 2.2* was selected as the most powerful available program.

To use the program, it was necessary to develop certain code systems. For this purpose, codes were written for the 59 structures in the finalized list so that the software would identify and differentiate them from one another to provide their frequency in each corpus. In addition to writing codes for each grammatical structure to be fed into the system, in many cases, more than one set of codes was needed to identify a particular structure. Overall, to analyze the 59 structures, 94 sets of codes were prepared in 94 files to be fed into the software. In writing the codes, special characters such as '*', '?', '@' (known as *wild cards*), which were identifiable for the software, were also used. As an example, the set of codes *am @ going to*, *are @ going to*, and *is @ going to* were written for the patterns related to the structures with "*be going to*". The software would identify the codes with the corresponding structure in each corpus and compute the frequency of that structure. To have refined lists of grammatical structures, in some cases, up to five sets of codes were used for a specific structure. In addition to coding the patterns, since the software was not capable of identifying parts of speech, several lists of verbs, adjectives, etc. were also prepared and fed into the software. For instance, for the structure *passive future continuous*, an exhaustive list of past participles of verbs was prepared and used.

Even though the *MonoConc Pro, MP 2.2* software was a capable program, it had a limitation as it only worked with certain symbols and codes. To overcome the problem, an additional program, named *TextAnalysisG,* was developed exclusively for this study by a computer specialist. The software was designed to find the frequency of the structures such as "*active simple present*, *imperative*, and *be + adjective + to*".

To make sure that the programs would work with the large corpus, it was piloted on a small-size sample corpus. The purpose was to check the accuracy of the codes and the appropriateness of the outcomes to remove any potential bugs. The piloting was performed several times and necessary adjustments were made until the codes resulted in acceptable identification of the intended grammatical structures. When all the codes were finalized and the accuracy of the results were optimized, the final analyses were done with a ten percent margin of error.

## 5 Results of Corpus Analysis

As the first step of the analysis, a list of the frequency of the grammatical structures in each micro discipline was prepared and rank ordered. To identify the grammatical structures with statistically significant frequencies, a cut-off point was calculated for each corpus using the Chi-Square formula. Besides, to be conservative and not

to lose any potentially important structures, the minimum value for observed frequency of the structures in a micro discipline to show statistical significance was calculated at the .01 level of probability. After determining the cut-off point for the observed frequency for each corpus, the structures whose frequencies were above that point were kept and the rest were removed for subsequent analyses. By doing so, a list of statistically significant grammatical structures was prepared for each micro discipline.

Of course, due to the different nature of each corpus in the micro disciplines, statistically significant grammatical structures had different rank orders in each micro discipline. Therefore, it was not possible to merge the frequencies to find the total frequency of each structure. To resolve the issue, average frequency of each structure across the micro disciplines was calculated. Further, it would be helpful for scholars concerned with a specific micro discipline to have access to the frequency list of structures in that field. For this project, identifying statistically significant grammatical structures across all micro disciplines was important because it would provide materials developers with the grammatical structures that are common to all micro disciplines. By cross checking the grammatical structures across the disciplines, it was revealed that they all shared the following nine grammatical structures: **Active simple present, Possessive of and 's, Adverb clause, Active simple past, Adjective clause, Passive simple present, Active present modals, Noun clause, and Gerund.**

It is also worth mentioning that the frequencies of several structures were significant in some micro disciplines but not in the others. To keep these structures and to avoid losing potentially important structures in some of the micro disciplines, the structures whose frequencies were beyond the cut-off point in some but not all micro disciplines were also listed for later use. They include the following seven grammatical structures: **Passive simple past, Infinitive, Active present perfect, Passive present modals, Active simple future, Conditional type 1 real, and Active past perfect.**

Table 2 presents all grammatical structures common to all or some of the micro disciplines and Table 3 shows the same common grammatical structures which are ordered based on their average frequency across the micro disciplines. It should be noted that among the 59 grammatical structures, the same 16 common grammatical structures had the highest average frequencies. In addition, **Active simple present** and **Possessive of and 's**, which have the highest average frequencies in Table 3, also had the highest frequencies in each micro discipline. This shows the importance of these two structures across the ESP/EAP fields.

Finally, the lists of grammatical structures obtained from analyzing the corpus of micro disciplines were cross compared at the macro discipline level. That is, the frequencies of all the significant structures in the micro disciplines of a macro discipline were listed and compared within each macro discipline. The results showed that the same grammatical structures were common across all macro disciplines as well with the addition of only one grammatical structure, namely, Passive simple past.

**Table 2** Common grammatical structures in the micro disciplines

| | | Grammatical structures | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Macro disciplines | Micro disciplines | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Art Sciences | Architecture | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |
| | Music | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |
| | Theatrical Sciences | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | √ |
| | Visual Arts | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | | |
| Earth Sciences | Agriculture | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | |
| | Geographical Sciences | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |
| | Geological Sciences | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | |
| Life Sciences | Biological Sciences | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | | | |
| | Medical Sciences | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | √ | | | |
| Physical Sciences | Chemistry | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | √ | | | |
| | Mathematics | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | | √ | √ | |
| | Physics | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | |
| Social Sciences | Applied Linguistics | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |
| | Economics | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |
| | Education | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | |
| | History | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | | √ |
| | Law | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |
| | Management | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | | √ | √ | √ | |
| | Military Sciences | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | | √ |
| | Philosophy | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | | | √ | | √ |
| | Physical Education | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | | |
| | Political Sciences | √ | √ | √ | √ | √ | √ | √ | √ | | √ | √ | √ | | | | |
| | Psychology | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | √ |
| | Religion | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | | |
| | Sociology | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | |

(continued)

**Table 2** (continued)

| | | Grammatical structures | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Macro disciplines | Micro disciplines | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Technology | Computer | √ | √ | √ | √ | √ | √ | √ | √ | √ | | √ | | √ | √ | √ | |
| | Electronics | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | | √ | √ | √ | |
| | Engineering | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | √ | √ | | |
| | Mechanics | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | | | √ | | √ | |
| **Total number of micros** | | 29 | | | | | | | | 28 | 24 | 22 | 17 | 11 | | 5 | |

1. Active simple present
2. Possessive of and 's
3. Adverb clause
4. Active simple past
5. Adjective clause
6. Passive simple present
7. Active present modals
8. Noun clause
9. Gerund: Common across all except one micro discipline, i.e., political sciences
10. Passive simple past: Common across all macro disciplines even though it is not present in all micro disciplines
11. Infinitive
12. Active present perfect
13. Passive present modals
14. Active simple future
15. Conditional type 1 real
16. Active past perfect

**Table 3** Common grammatical structures ordered based on average frequency across the micro disciplines

| Grammatical structure | Average frequency across the micros rounded |
|---|---|
| Active simple present | 162,247 |
| Possessive of and 's | 112,343 |
| Adverb clause | 53,548 |
| Active simple past | 52,920 |
| Adjective clause | 40,637 |
| Passive simple present | 34,865 |
| Active present modals | 29,332 |
| Passive simple past | 27,756 |
| Gerund | 26,206 |
| Noun clause | 25,718 |
| Infinitive | 15,931 |
| Active present perfect | 13,348 |
| Passive present modals | 11,236 |
| Active simple future | 10,705 |
| Conditional type 1 real | 9133 |
| Active past perfect | 8939 |

## 6 Conclusions, Applications, and Implications for Further Research

This is not the first, nor will it be the last report on any of the three dimensions addressed here. Corpus-based research is just getting momentum and is receiving wide applications in language education. Identifying the target situation use domains will expand as new interdisciplinary fields emerge. What may not change very much is the nature of grammatical structures to be included in the instructional materials though their selection for specific fields may vary. However, this research had certain valuable contributions to the field.

First, a new approach in identifying the potential target language use domains was used by triangulating data from three different sources of information rather than depending on only names of the fields or the intuition of practitioners. We hope that the taxonomy prepared here will serve as the basis for other projects in the future. The taxonomy included 6 macro disciplines, 29 micro disciplines, and 399 majors that seems to be the most comprehensive taxonomy in the field so far. The efforts made here will save time and energy for the future researchers. Although counterarguments for the validity and stability of this classification cannot be ruled out, it will certainly provide a valid guideline for such a process.

Second, corpus collection in this study was different from that of other similar ones in the sense that it was data informed. That is, the corpus was collected on already research-informed classification of target language use domains. Such a corpus would not only allow the analysis of texts collected from a specific domain, but it would also allow comparison of the outcomes, either vocabulary or grammatical

structures, across the domains at both specific, i.e., micro discipline, and more general layers, i.e., macro discipline, of target language use. Further, since there was a hierarchy of classification from macro to micro and to the major fields of study, the corpus provided a chance to examine the corpora at the level of micro disciplines, and then at the level of macro disciplines and vice versa. The comparison provided information on whether the ESP fields should be treated in a wide-angle or narrow-angle perspective (Basturkmen 2003; Hutchinson and Waters 1993; Jordan 1997). Of course, the findings of this research implied that the wide-angle approach is more appropriate because there is a significant commonality of grammatical structures across the disciplines even at the macro levels.

Further, despite a considerable amount of discussion in the field about the diversity of learner needs that would require different selections of language elements in ESP/EAP contexts, there seems to be more commonality than diversity, at least at initial stages of ESP instruction. Considering time and resource limitations, even fulfilling this limited set of common needs across different micro disciplines in an ESP course may seem ambitious. More importantly, following the two approaches of reductionism and expansionism, the results of corpus analysis on the grammatical structures in this research supported the principles of reductionism (Farhady 2008). More specifically, the findings of corpus analysis on grammatical structures showed that only 9 grammatical structures were common in the corpora collected from 29 micro disciplines that itself included 399 university majors. Therefore, the current diversity in ESP/EAP fields, at least at the initial stages of tertiary level instruction, may not be sound. This also suggests that in developing ESP/EAP materials for university students, priorities should be given to these 9 primary structures first, and then to the 7 secondary structures that were common among some but not all micro disciplines. As Tomlinson (2013) mentioned, it is the responsibility of materials developers to integrate their intuition and the results of corpus analysis to design more localized materials for different contexts regarding grammatical structures. In other words, materials developers can select samples of authentic texts from specific disciplines and design grammatical tasks for their instructional contexts (Also see Stoller and Robinson, chapter "Innovative ESP Teaching Practices and Materials Development" this volume).

Finally, with the lack of sufficient corpus-based information on the frequency and/or hierarchy of grammatical structures in the field, and with the significance of teaching grammar in ESP/EAP classes, the findings of this research could help materials developers to put more emphasis on introducing common grammatical structures first. Then, they might want to present other less frequent grammatical structures that may be more specific to a particular discipline at advanced or professional levels of language ability. Further, the procedures followed in this research could serve as a starting point for more comprehensive studies in the field dealing with identification and utilization of grammatical structures in ESP instructional materials.

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# Part II
# ESP Teacher Development

# Lesson Study in Higher Education: A Collaborative Vehicle for Professional Learning and Practice Development of Teachers of English for Specific Purposes

**Julie Norton**

**Abstract** Collaboration amongst teachers is considered a crucial way to foster professional development and improve classroom effectiveness. An increasing number of studies reveal the benefits of participation in Lesson Study, a highly collaborative form of teacher professional development, which originates from Japan. Working together in Lesson Study groups has been shown to enhance teachers' engagement with teaching and learning. Lesson Study, however, has been mostly exploited within mainstream educational contexts in mathematics and science education, and has received little attention to date within English Language Teaching. This chapter examines the potential of Lesson Study for English for Specific Purposes (ESP) teacher professional development, particularly in terms of the structure it provides for subject-specialists and language specialists to work together to grow professional content knowledge, and improve student and teacher learning. Drawing critically upon a core conceptual framework for teacher development, I argue that ESP teachers can develop professionally through participation in Lesson Study by sharing subject-specific and pedagogic content knowledge and by jointly developing resources. Lesson Study provides a framework for teachers to engage in richly contextualised discussions about pedagogy which are directly relevant to their classroom practice.

**Keywords** Lesson study · Teacher professional development · English for specific purposes · Teacher collaboration

J. Norton (✉)
Applied Linguistics, University of Leicester, Leicester, UK
e-mail: jen7@leicester.ac.uk



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## 1 Introduction

Tsui and Law (2007: 1294) describe Lesson Study (LS) as "a systematic investigation of classroom pedagogy conducted collectively by a group of teachers rather than by individuals, with the aim of improving the quality of teaching and learning". As such, LS is said to lie at the heart of teacher development (Lewis 2000). LS involves a cyclical procedure whereby teachers plan, teach, observe and evaluate lessons together, within a supportive atmosphere of 'unconditional positive regard' (Rogers 1956). Teachers are encouraged to become reflective practitioners to improve their classroom practice with a view to fostering student-learning (Fernandez 2005). Lesson Study differs from many other forms of professional development in that there is no performative agenda in terms of observing teachers teach and then evaluating their performance. The focus of classroom observations within LS is on student learning. Post-lesson discussions of observations within the LS group then focus on how aspects of the collaboratively planned lesson, which is known as the 'research lesson' (RL), can be revised to improve student learning in subsequent iterations of the lesson, leading to insights which underpin and inform learner-responsive teaching (Fernandez et al. 2003; Saito et al. 2012). Greater understanding of student learning, therefore, comes through the close observation of 'case students', rather than the teacher, during the RL. Case students are selected according to the focus of a particular RL (see Sect. 2 for further discussion). Engagement in the LS process thus offers opportunities for teachers of all levels of experience to learn to 'read' their classrooms more effectively (Ainley and Luntley 2007). Given the simplicity and flexibility of the LS model, it is possible to appropriate it in a wide range of educational and cultural contexts.

In this chapter, I explore the potential of LS for professional development in ESP contexts, drawing upon Desimone's (2009) core conceptual framework for teacher development, and focussing particularly on two areas which remain relatively under-researched within ESP: teacher collaboration and specialist content knowledge. 'Collaborator' (usually with a subject or vocational specialist) is listed as one of the five key roles undertaken by ESP practitioners; the others being: teacher, course designer/materials developer, researcher and evaluator (Dudley-Evans and St John 1998:13–17). I argue that greater teacher collaboration could be fostered in ESP contexts through the adoption of LS, and this would have a positive impact upon developing expertise in the other four roles listed above. The chapter is organised into six main sections. In Sect. 2, I briefly outline the origins of LS, what it is and its role as a vehicle for professional learning. I make links between the use of LS and Desimone's (2009) core conceptual framework for teacher development and consider how these two approaches might usefully complement each other. In Sects. 3 and 4, I examine the efficacy of LS and some of the benefits reported for teacher learning in the literature. Then in Sect. 5, I explore why LS is useful for the professional development of ESP practitioners in particular. I conclude, in Sect. 6, by summarising key arguments, before suggesting future directions for LS in ESP and English Language Teaching (ELT) contexts more generally.

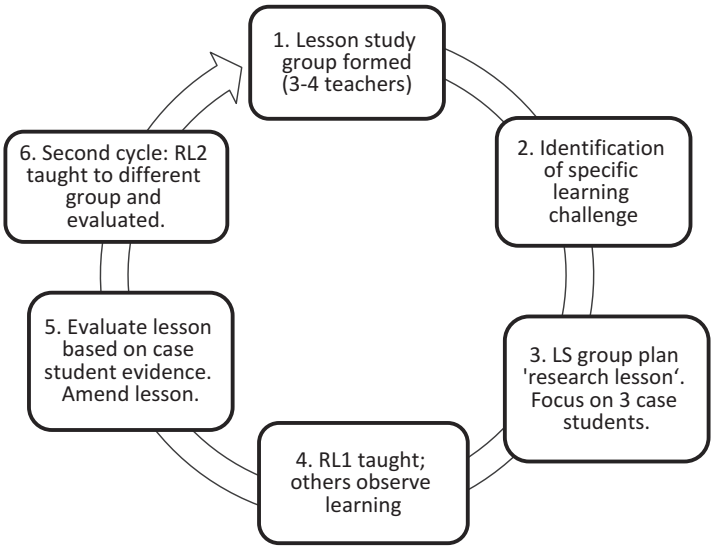


**Fig. 1** The lesson study cycle (Adapted from Dudley 2011)

## 2 What Is Lesson Study?

Lesson Study ('kenkyuu jyugyou') is an approach to teacher professional development that originates from Japan (Abiko 2011), although variations of it exist and are practiced globally (e.g. in China, Hong Kong, Singapore, Indonesia, Turkey, the USA and the UK). LS first attracted interest in the USA after publication of *The Teaching Gap* (Stigler and Hiebert 1999) and was introduced into the UK by Pete Dudley in the *National Primary Strategy* (DCSF 2008).

In a typical LS cycle, three or four teachers meet together to plan and deliver a 'research lesson' (RL). The LS cycle, based upon Dudley (2011), is presented in Fig. 1 above.

The LS team begin by articulating a learning challenge for their students. For example, within an ESP teaching context, this could be helping students to paraphrase text more effectively. The group then jointly plan a RL to address the agreed learning challenge, and one member of the team teaches the RL, whilst the others observe a small number of case students during the lesson. Teachers choose the case students depending on the focus of the particular learning challenge. In the above example, they might choose case students depending on their level of language proficiency (low, middle and high); but if the lesson had a different focus (e.g. developing confidence in giving oral presentations), they might choose case students based upon different criteria (e.g. their willingness to speak in class). Observation data of the case students is then used as the basis for critical discussion in a post-lesson evaluation meeting which involves all teachers in the LS group (see step 5 in Fig. 1 above). As previously noted, what distinguishes LS from other forms

of professional learning is the focus on student learning rather than on teacher performance, and this is reinforced by the fact that the 'RL' has been collaboratively planned by all members of the LS group, so they share joint ownership of the lesson. The LS cycle is usually repeated at least two or three times (RL2 and RL3) to refine the lesson further before it is taught again to different groups of students. Dudley (2011) also recommends interviewing the case students, if this is feasible, to take their views into account when revising the RLs.

In a typical Japanese-style LS, the group may disseminate their findings with colleagues by writing them up and this can be a valuable step in crystallising the professional learning that has taken place. Dissemination of LS findings can also take other forms, such as oral or poster presentations, and this has the potential to impact upon the culture of professional learning within a whole school or institution. As LS situates teacher professional development within a specific work setting, its relevance to each context is ensured, and teachers can gain greater criticality through joint reflection with their colleagues and learners on the learning that is taking place. According to Fernandez et al. (2003), this will eventually help the teachers to become more effective within their own workplace.

## *2.1 Lesson Study and Desimone's (2009) Core Conceptual Framework for Teacher Development*

The steps of the LS process align well with Desimone's (2009: 183) core conceptual framework for teacher development, which is based upon evidence from empirical research, and includes:

- a content focus (e.g. subject matter content and how students learn content)
- active learning (e.g. observation)
- coherence (e.g. the extent that teacher learning is consistent with teachers' knowledge and beliefs)
- duration (e.g. professional change requires engagement over time)
- collective participation (e.g. interaction between teachers)

Desimone (2009:181) acknowledges that it is extremely challenging to measure teacher learning, given the 'myriad of experiences' that might contribute towards this, from more formal, subject-specific, expert-led workshops to informal conversations with colleagues in the corridor or learning experiences within one's own classroom. She claims, however, that professional development activities which include the above features will help teachers increase their knowledge, develop skills, change their attitudes, beliefs and instruction, and as a result, improve student learning. The two approaches, LS used in conjunction with Desimone's framework, could provide a powerful tool and a more rigorous, theoretical basis to teacher development than adherence to a craft-oriented approach. Their application within ESP contexts is considered in Sect. 5 of this chapter.

## 3 Does LS Really Work?

Ming Cheung and Yee Wong (2014) conducted a systematic review of journal articles on LS published between 2000 and 2010 to find out what benefits LS had for teachers and learners. They identified 74 articles, screened 20 but found only nine studies which fully met their review criteria and which were therefore included in the final review. Despite the small-scale nature of their study, they report that LS improved student learning outcomes and that eight out of the nine studies found that LS had a positive effect on teachers. Saito and Atencio (2013) claim LS opens a space for professional dialogue between teachers, leading to teacher improvement. Similarly in the context of ELT, Tan-Chia et al. (2013: 272) found that co-construction of a 'RL' was important because teachers built 'collective wisdom', identified gaps in learning and developed 'eyes for student learning'. In Cajkler and Wood's (2015) research with student teachers in an Initial Teacher Education (ITE) programme in a tertiary institution in the UK, the researchers used Communities of Practice (CoP) (Wenger 1998) as a theoretical lens through which to examine the impact of LS on professional learning. Members of a CoP share ways of thinking and interacting which allows them to develop a 'shared repertoire' (Wenger 1998: 73). Novice members of the community start on the periphery but become more central as their expertise grows. Cajkler and Wood (2015: 119) found that when trainee teachers and their mentors focussed on the improvement of pedagogy in LS groups, professional learning took place for both mentors and trainees, accelerating the induction of the trainees:

> This not only permits student-teachers to move more rapidly towards the centre of the community of practice, both conceptually and linguistically, but also opens up the complexity of the pedagogic process to detailed scrutiny, resulting in greater understanding and confidence.

## 4 What Are the Benefits of LS for Professional Learning?

In the Lesson Study Research Group (LSRG) at the University of Leicester, UK, we have been involved in LS research at primary, secondary and tertiary levels of education since 2011. A particular strand of our research has sought to answer the following questions:

- How does participation in LS impact on teachers' professional development?
- How does LS influence teachers' thinking about classroom teaching and learning?

Although, this chapter does not aim to present the details of the empirical studies we have conducted, the main findings from this body of research, which are more fully reported elsewhere (Cajkler et al. 2013, 2014, 2015; Tas 2014), can usefully be summarised and drawn upon here to illustrate the discussion, because they offer compelling evidence of the positive impact of LS in the following areas:

1. Teacher collaboration
2. Student learning
3. Developments in teacher knowledge and practice
4. Risk-taking
5. Improvements in teaching and learning

This claim is illustrated below with reference to and with brief excerpts from interviews with modern foreign languages (MFL) and mathematics teachers who participated in one of our studies at a secondary school in the East Midlands in the UK. The teachers' names have been changed to protect anonymity and the full study, with details of the research methods, can be accessed here (Cajkler et al. 2015).

**Teacher Collaboration** Secondary teachers in our study reported benefits of engaging in the LS process in terms of planning together and the importance of group support for professional development.

> So that's made me think a lot and I think a lot of that thinking we, all four of us, brought to this process, so I think planning with other people definitely very helpful. (Chloe, mathematics, newly qualified teacher)

> Uhm, well I'm supposed to develop like, as an individual, it seems like a lot of work on your own, but definitely when you're sitting around a group with other teachers in the maths faculty, there's a lot more collaboration and I think that's the most important thing. (Sam, mathematics, 3 years' teaching experience).

**Insights About Student Learning** One teacher talked about how the LS process allowed her to see her students with fresh eyes:

> I think you sort of assume with shy students or lower ability students oh I just won't push them. I won't make them speak too much because it makes them uncomfortable and actually if you give them support then they're away with everybody else and you don't really notice a difference between the shy and the confident student which was a massive shock to me. (Jenny, MFL, 3 years' teaching experience).

**Developments in Teacher Knowledge and Practice** One newly qualified teacher (Carla) reported that when planning the lesson they spent a significant amount of time clarifying the learning challenge, discussing mathematical concepts, agreeing objectives and exploring the processes associated with pupils' learning.

**Risk-Taking** Another newly qualified teacher explained how LS led to greater risk-taking in her classroom practice:

> I've actually now just dared to try something and actually seen that it does work, and I think from that it's a huge positive, because now I can take this template for learning, and adapt it to whatever topic, whichever class, … we've dared to do it and it's gone well. (Sandra, MFL, newly qualified teacher)

**Improvements in Teaching and Learning** Other teachers reported that they evaluated their lessons more critically, noted benefits for the whole department beyond the LS group and claimed LS had helped them increase their teaching repertoire:

> I think what I would have said would be an alright lesson, I would now look at and think that's a really boring lesson, how can I make it more interactive or more involved, or more real world … I think it's kind of set my bar higher, and so all my other lessons are… they're not still at the top but they're a lot further there. (Chloe, mathematics, newly qualified teacher).

> It's increased my teaching repertoire. … And it's benefited the whole department rather than just one individual teacher. (Patti, head of MFL, 9 years' teaching experience).

> … definitely beneficial for me as a teacher but something that everybody can take and use in their lessons. (Sarita, mathematics, deputy head of mathematics, 6 years' teaching experience).

Our research suggests, therefore, that LS allows teachers, at all levels of experience, including Newly Qualified Teachers, to experiment with different ways of 'being a teacher'. According to Tan-Chia et al. (2013), this leads to greater professionalism and develops an evidence-based habit of thinking and decision making when planning teaching and learning.

## 5 Why Is LS Useful for the Professional Development of ESP Practitioners?

In this section, I consider the potential of LS for the professional development of ESP practitioners, organising the discussion around Desimone's (2009) core features and common conceptual framework for teacher development, which, to recap, include: (1) content focus, (2) active learning, (3) coherence, (4) duration, and (5) collective participation.

### *5.1 Content Focus*

Content focus covers several related issues, including what the content of lessons should be, how to teach that content (cf. Shulman's (1987) pedagogic content knowledge or 'PCK'), which perhaps also overlaps with how to help learners learn that content. Each of these aspects holds relevance in terms of the professional expertise required of ESP teachers and also significant challenges, as Belcher (2013: 545) highlights:

> With limited awareness of how learners learn in ESP classrooms, promoting advancements in ESP professional expertise would seem to be a fairly utopian goal.

Belcher (2013) notes that, with the exception of Cheng (2008, 2011), few ESP studies have examined teacher efficacy or closely focussed on the relationship between teaching and learning. Much of the published research on ESP still tends to focus upon needs analysis, genres within ESP, or the substantive development of curriculum and materials to address specific learner needs. In addition, a particularly problematic issue for ESP practitioners, which has also been under-researched,

is specialist content knowledge (Demirbulak 2011). Belcher (2013: 545) summarises this as follows:

> One of the most vexing issues for ESP praxis is the need for at least some specialist knowledge.

Demirbulak (2011) reports, for example, that ESP teachers in her study found their lack of subject-specific knowledge problematic: they needed to collaborate with instructors with a business background to be able to implement an ESP lesson in business management. Similarly, Mede, Koparan and Atay, (chapter "Perceptions of Students, Teachers and Graduates About Civil Aviation Cabin Services ESP Program: An Exploratory Study in Turkey" this volume) comment on the critical importance of greater collaboration with subject specialists in their study which focuses upon aviation English.

In many ways, it is surprising that so little attention has been given to the professional knowledge required by ESP teachers and how best to develop it. Yet ESP is such a diverse field, with sub-areas, including English for Academic Purposes (EAP), English for Professional Purposes (EPP) and English for Occupational Purposes (EOP) (Basturkmen 2010), and even within those fields, the focus of the learning can be more or less 'specific'. (e.g. 'English for General Academic Purposes' compared to 'English for students of law'). It is unlikely, therefore, that a 'one-size-fits-all' approach to developing praxis would be effective.

Hutchinson and Waters (1987: 19) define ESP as an approach to language teaching where "all decisions as to content and method are based on the learner's reason for learning." As learners' reasons for learning English around the world are multiple and diverse, however, ESP's remit becomes ever broader. Within the sub-areas mentioned above, there is also enormous variation regarding the language and communication skills required. Academic literacy skills, for instance, vary considerably from one discipline to another. With this in mind, it is important to acknowledge that the 'ESP practitioners' mentioned in the title of this chapter do not form a homogenous group. Their professional development needs are neither easy to identify nor address, because they represent a diverse group of language teaching professionals, operating in a wide range of social and cultural settings with highly contextualised needs. This inevitably brings challenges in terms of articulating expertise and developing ways to foster it.

The few commentators who do address the issue of professional content knowledge include Wu and Badger (2009) who explore ESP teachers' strategies for dealing with unpredicted problems in subject knowledge during class, and Ferguson (1997: 85), who identifies three key areas of 'specialised knowledge' required by ESP teachers:

(a) a knowledge of disciplinary cultures and values; a form of knowledge which is essentially sociological or anthropological
(b) a knowledge of the epistemological basis of different disciplines; a form of knowledge which is philosophical in nature
(c) a knowledge of genre and discourse, which is mainly linguistic in character.

According to Wu and Badger (2009), however, knowledge of disciplinary cultures and values must exclude the actual content knowledge of the subject, because this is the domain of the subject specialist. Specifying to what extent specialist subject knowledge is required by an ESP practitioner is virtually impossible as it is highly context-dependent, although Harding (2007: 7) does identify "understanding the nature of the material of the ESP specialism" as an essential role of the ESP teacher.

LS has the potential both to address the highly contextualised needs of ESP practitioners and to equip them with the greater subject content knowledge they might need. It facilitates this by providing a structure for collaboration between ESP teachers and subject specialists, and embedding professional learning within their workplace, taking into account local, cultural sensitivities, and thereby giving the professional learning immediate relevance (cf. also Stewart's model of Collaborative Interdisciplinary Team Teaching (CITT) which offers another possible framework and is reported in chapter "Expanding Possibilities for ESP Practitioners Through Interdisciplinary Team Teaching" of this volume). Teachers can thus deepen their subject content knowledge, gain insights into their students' thinking and learn from each other according to what occurs in the classroom (Wang-Iverson 2005).

LS groups aiming to foster professional development in ESP would ideally include language and subject specialists who together plan the most effective way to address a specific learning challenge for a particular group of students. The students themselves could also be viewed as a resource due to their specialist subject knowledge and could be invited to participate in the LS group if appropriate. Whilst it is not unusual for some form of collaboration to take place between language and subject specialists in UK universities, this is often organised in a rather ad hoc way, as a result of workload and time constraints, and the nature and depth of the collaboration is often rather limited. In my experience, working at a university in the UK, it is also relatively rare to include students in this form of collaboration.

In some EAP contexts, such as university pre- and in-sessional language preparation courses in the UK, subject specialists might try to provide insights into the linguistic demands of their discipline, but they may only have a partial understanding of the linguistic challenges that their students face, due to their limited language awareness. They might, consequently, struggle to make the content accessible to students whose first language is not English. Equally EAP teachers who have only limited specialist knowledge of a particular field might aim to compensate for this by attending lectures in the subject areas of their students, such as law or marketing, and try to familiarise themselves with the discipline-specific academic literacy requirements. They might then analyse their students' needs before developing materials and curriculum which address these needs in as authentic a way as possible. Where this type of collaboration has been identified, it is generally perceived as useful (Morley 2008; Thesen and van Pletzen 2006; Paxton 2011), but it may be insufficient to allow EAP practitioners to develop appropriate resources which cover all areas of the curriculum. In-depth, meaningful collaboration with subject specialists over a period of time would, therefore, seem a pre-requisite to developing materials which ensure access to the curriculum, parity in terms of student experience and support student learning. Establishing LS groups in such contexts could

potentially bridge the gap between language and subject specialists more effectively by providing a context and structure to discuss appropriate pedagogy which would facilitate ESP practitioners in their roles as course and materials developers.

## *5.2 Active Learning*

Active learning can take different forms, including the observation of teaching with feedback and discussion; reviewing student work on a particular topic, and leading discussions (Desimone 2009). These kinds of activities are commonly employed to help teachers develop as they progress through their careers. It must be noted, however, that we know very little about how general English teachers develop professionally and make the transition to become ESP practitioners during their career path. This is another area of ESP research which is not particularly well-documented in the academic literature, and Belcher (2012) lists the following relevant research questions:

How do those interested in language education become ESP specialists?
How do those actively engaged in ESP praxis exercise and hone their experience?
How do ESP practitioners know that what they do results in the learning outcomes that they and their students desire?

Rather limited time is devoted to ESP on pre- or in-service teacher training courses for English language teachers, such as the Cambridge Certificate in Teaching English to Speakers of Other Languages (CELTA) or Diploma in Teaching English to Speakers of Other Languages (DELTA), due to their relatively short, intensive nature and packed syllabuses. LS has the capacity to promote greater active learning among ESP teachers by closing the gap between theory and practice:

> … lesson study provided the needed structure and routines which helped teachers to translate theory into practice with the immediacy of enactment. (Tan-Chia et al. 2013: 273)

As Lewis and Hurd (2011) point out, there is a lot more to LS than simply producing a lesson. The planning and evaluation of the lesson provides teachers with a window into each other's classrooms, opportunities to share expertise, co-construct knowledge, and form relationships which are crucial elements of improving instruction and sustaining teacher learning. The realisation that "a single lesson contains many (if not all) of the critical components that teachers must consider to improve instruction" (Sims and Walsh 2009: 725) could potentially be revelatory for ESP practitioners and inspire their professional curiosity and active learning.

In addition, LS can support the role of 'ESP teacher as researcher' by demystifying what it means to research one's own classroom. It is widely acknowledged that busy teachers may view research as an additional burden upon their time, which is often not a priority, given the myriad of daily pressures and tasks that they face. The fact that LS is driven by practitioners rather than external researchers is important because the research then becomes "professionally meaningful as well as intellectu-

ally accessible." (Demirbulak 2011: 492). This aspect of LS links effectively with ESP which is essentially a practitioner-led movement within ELT (Johns 2013).

### 5.3 Coherence

Coherence refers to "the extent to which teacher learning is consistent with teachers' knowledge and beliefs" (Desimone 2009: 184). During their careers, teachers are often tested, or 'performance-managed', through observation rather than helped to become better teachers, so observation may be associated with inspection rather than learning. As LS focuses on student learning, it has the potential to change teacher beliefs about the role of observation and bring greater awareness of the complexities inherent in observing classroom learning. Stillwell (2009: 361) reports on the value of peer observation for professional learning in an EAP context in a Japanese university:

> Insofar as it is a form of collaborative professional development, it brings peers together to talk shop and tap into one another's experience, breaking down barriers and giving novice teachers a chance to learn from the pros, and vice versa.

Stillwell et al.'s (2010) experience of LS in this context not only led to the professional development of the LS group but also to the creation of resources, supporting the role of ESP practitioner as materials developer.

### 5.4 Duration

According to research, professional development activities must be of sufficient duration, including span of time and hours spent on them, to facilitate pedagogical and intellectual change (Desimone 2009; Fullan 1993). Desimone (2009) suggests that a minimum of 20 h is required for professional learning to become embedded. LS does not offer a 'quick-fix' approach to teacher professional development. In fact, it can be better understood as a 'slow-burn' solution, which is demanding on teachers' time and resources. For this reason, it requires the backing of the school or institutional management to facilitate its effective implementation. If ESP practitioners can see that engaging in LS might have a range of benefits, including: enhanced student learning; long-term professional development and personal enjoyment, as many participants report greater collegiality and the development of close friendships as an added bonus of participation in LS groups, they may become more willing to invest time in this activity.

### *5.5 Collective Participation*

Teacher collaboration is more effective if it is concrete and has a clear goal (Wang-Iverson 2005). It may then have a knock-on effect throughout the school beyond the LS group, leading to a more widespread sharing of ideas and resources. This was certainly our experience when conducting LS research with 38 EAP teachers in a Turkish University between 2015 and 2016 (cf. also Lehtonen, chapter "Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use" this volume). It is important to acknowledge that teachers do not enter the profession with all the knowledge that they need (Lewis and Hurd 2011), and participating in LS can help teachers feel less isolated as it provides an escape from 'pedagogic solitude' (Shulman 1993). 'Pedagogic solitude' is a term that captures the isolation that many teachers feel, as they conduct their work behind closed doors, often with little support. This solitude may be heightened in ESP contexts where teachers are working on highly specialised courses, making it even more difficult for them to collaborate, share resources and discuss learning challenges. LS may thus provide a much-needed support network for ESP practitioners who feel they are working in relative isolation.

## 6 Conclusion: Future Directions for LS in ESP and ELT

In this chapter, I have argued that LS can foster collaborative engagement, active learning and challenge ESP practitioners' traditional perceptions of classroom observation, both strengthening and deepening their subject knowledge and PCK, and increasing their awareness of student learning. Belcher (2006: 150) calls for "research-based definitions of community specific expertise" with regard to ESP listening and this type of data could effectively be collected by LS groups, developing teachers as researchers. Technology could also support and facilitate collaboration within LS groups, as it has never been easier to produce and share resources, edit texts produced by others, and contribute to wikis etc. LS, therefore, has the capacity to strengthen and support the aforementioned five key roles that ESP practitioners play: teacher, course designer/materials developer, collaborator, researcher and evaluator (Dudley-Evans and St John 1998).

As previously noted, it is essential to recognise the variety of demands placed upon ESP practitioners and the diversity of their individual teaching contexts. For this reason, we cannot reduce this type of professional learning to a list of competencies, as is sometimes implied in lists of professional standards for teachers. Whilst standards may provide useful guidance about what aspects of teacher learning are important, they often fail to take into account the specific demands of a particular context. A more holistic approach is, therefore, needed where reflection and collaboration are taken as pre-requisites for enhanced professional learning and improved student outcomes (Korthagen 2004).

LS does, however, present certain challenges to ESP practitioners and ELT professionals more generally For this reason, it needs to be embedded within institutional cultures rather than perceived as an additional burden. For example, Wingate (2016) found that although collaboration between EAP practitioners and subject lecturers in her study led to gains in academic literacy, it was problematic and required persistence due to stakeholders' time and workload pressures. Whilst significant and fast-paced change in British university culture seems unlikely, with the support of university management and funding bodies, prioritising EAP teacher professional development through LS might be possible, particularly if impact on student learning can be evidenced. According to Wingate (2016), we particularly need to take action to improve academic literacy support in Anglophone universities, given the high student fees, greater competition in the sector, and, most importantly, because the remedial model of EAP/Study Skills that is currently practiced often fails to address the discipline-specific needs of international students and raise their academic literacy in English.

International research in LS in a diverse range of educational contexts has provided some evidence that it is a powerful tool for professional learning (Xu and Pedder 2015). It, therefore, seems appropriate to draw upon insights from mainstream education to develop and inform ESP and ELT practice. Farrell (2006: 218) suggests that teacher education programmes should focus upon what it means to be a teacher, rather than on individual 'technicist' approaches, because this will allow teachers to develop the ability to engage in 'anticipatory reflection'. Farrell claims that this is important if teachers are to become attuned to the diversity of their classrooms and respond confidently in pedagogically creative ways. This resonates with Hiebert et al.'s (2003: 202) belief that teacher professional development is life-long and involves more than just equipping teachers with teaching skills: fundamentally, teachers must "learn how to learn". LS can provide the means for ESP teachers to collaborate with subject specialists to achieve this goal.

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# The Processes Behind RA Introduction Writing Among Turkish Arts and Science Scholars

**Demet Yaylı and A. Suresh Canagarajah**

**Abstract** With this small-scale qualitative investigation, we aimed to capture the views of a group of Turkish arts and science scholars' construction of their RA introductions in their field-specific academic writings. Through our readings of the literature, we identified four main concerns for the semi-structured face-to-face interviews: (1) these writers' construction process of RA introductions, (2) their descriptions of a specific single-authored RA introduction; (3) how they revised these introductions and the challenges/problems they experienced while revising and (4) while reviewing others' introductions, what expectations they had and what problems they observed. The semi-structured face-to-face interviews enabled us to see how commonly the CARS model is followed by these authors. Other than the prototypicality of this three-part model, their statements stressed an awareness of the differences in academic conventions in national and international journals as a crucial concern to be considered while shaping the content of their writing.

**Keywords** RA (research article) · genre · ESP (English for specific purposes) · CARS model (Create-A-Research-Space)

## 1 Introduction

Despite perceived cross-cultural differences in academic writing, international reporting of knowledge holds an important place in scholars' lives. The power of the written medium to transmit information to the global community draws attention and comes together with certain awareness and challenges (Canagarajah 2002).

D. Yaylı (✉)
Department of Foreign Languages Education, Pamukkale University, Denizli, Turkey
e-mail: demety@pau.edu.tr

A.S. Canagarajah
Department of Applied Linguistics and English, Pennsylvania State University, University Park, PA, USA
e-mail: asc16@psu.edu



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Many researchers in different fields make attempts to actively participate in the English-language-dominated scientific community and search for assistance and support especially in their early attempts. Other than books devoted to help non-native speaker (NNS) writers to write research papers for publication in English (Glasman-Deal 2010; Swales 1990, 2004), several studies were also conducted on academic discourse taking different aspects as their foci such as providing comparisons between texts written by skilled and less skilled writers (Krapels 1990; Ventola and Mauranen 1991) analyzing research articles (RAs) written in two languages by the same scholar for different audiences (Canagarajah 2006); and also analyzing NNS novice writers' research writing practices (Cheung 2010; Gosden 1995, 1996). To our best knowledge, only in Gosden's (1996) and Cheung's studies (Cheung 2010), is there an interview with Japanese novice writers and doctoral students in Hong Kong respectively on their writing practices with their preparation of their first academic paper for publication. Other than this, many other studies in the field formed a corpus of RAs and took different sections of these RAs as their focus of analysis. In the present study, however we decided to ask a group of expert scholars to describe the construction processes of their academic texts. Since "the main concerns of ESP have always been, and remain, with needs analysis, text analysis, and preparing learners to communicate effectively in the tasks prescribed by their study or work situation" (Dudley-Evans and St John 1998: 1) and since the ESP teacher needs to exploit relevant discourses, communication skills, topics and underlying methodology of a target discipline, we believe that how expert scholars have achieved success in their academic writings has a lot to say to ESP teachers and novice scholars on their ways of professional development. Before the presentation of a detailed analysis of the processes behind research article (RA) introduction writing among Turkish arts and science scholars, we will first briefly outline the theories in which this study of academic writing was grounded.

## 2 Theoretical Background

### *2.1 Shift Toward Genre Pedagogies in Writing*

Today, the concept of genre is a highly influential one in language education, and it signifies a major paradigm shift in writing instruction (Johns 2002). Several L2 writing approaches have developed around genre and related concepts like purposes for writing, reader expectations and contextual features. Genre-based writing focuses on communicative activity, purposes for communication, targeted readers, their expectations and contextual constraints. Hyland (1996: 18) states that writing teachers "who take a genre orientation to writing instruction look beyond subject content, composing processes and textual forms to see writing as an attempt to communicate with readers." This potential of genre-based orientations (e.g., trying to communicate with targeted readers, knowing how to design a text and to negotiate)

facilitates an understanding of how texts should be shaped to meet writers' goals in particular contexts. Put succinctly, this contributes to the empowerment of especially NNS writers who may need more initiation for the effective use of RA genre and the necessary meaning-makings attached to it which are valued in English-speaking communities.

## *2.2 Research Article (RA) as A Genre*

The doyen of ESP genre studies, Swales has contributed to the field with his seminal works on the linguistic-rhetorical features of academic genres (Swales 1990; Swales 2004). ESP theorists see genre as a class of structured communicative events employed by specific discourse communities whose members share broad social purposes (Swales 1990). By stating that "[t]he standard RA is, of course, in its final form a *product*, but that product is patently the outcome of a complex *process*" (Swales 2004: 218, italics original), Swales highlights the fact that a manuscript undergoes several drafts and receives several inputs from colleagues, editors and reviewers. The whole process of RA writing from early notes to the final draft is a highly complex dynamic and with the help of their shared experiences in our face-to-face interviews in this study, we aimed at capturing these dynamics of RA introduction writing by a group of expert Turkish arts and science scholars.

## *2.3 Research Article (RA) Introductions*

The most commonly studied section of the RA seems to be the introduction. It is probably because of Swales' (1981) study which was followed by his famous Create-A-Research-Space (CARS) model (Swales 1990) and the importance given to the move structure of RA introductions in several studies. Genre analysis in ESP is basically associated with the move-step analysis introduced by Swales (1990) who presented a seminal description of RA introductions with a three-part model. The CARS model presents a tool for identifying the series of moves in a text. Each move is a communicative act designed to achieve one communicative goal. Although a move "has sometimes been aligned with a grammatical unit such as a sentence, utterance, or a paragraph,… it is better seen as flexible in terms of its linguistic realization" (Swales 2004: 228–229). In other words, a move can be realized with a clause at a place in a text but with several sentences at another place. Both moves and steps may be optional, embedded or repeated. After several studies (Anthony 1999; Lewin et al. 2001; Samraj 2002) on RA introduction analysis in different fields with the CARS model (Swales 1990) several difficulties were observed in Moves 1, 2 and 3, and Swales (2004) presented a revised CARS model for Move 1, Move 2 and Move 3 structures (see Fig. 1).

Move1 Establishing a territory

via

Topic generalization of increasing specificity

Move 2 Establishing a niche (citations possible)

via

Step 1A Indicating a gap

or

Step 1B Adding to what is known

Step 2 (optional) Presenting positive justification

Move 3 Presenting the present work

via

Step 1 (obligatory) Announcing present research descriptively and/or purposively

Step 2 (optional) Presenting RQs or hypotheses

Step 3 (optional) Definitional clarifications

Step 4 (optional) Summarizing methods

Step 5 (Probable in Some Fields) Announcing principal outcomes

Step 6 (PISF) Stating the value of the present research

Step 7 (PISF) Outlining the structure of the paper

**Fig. 1** A revised version of the CARS model (Swales 2004)

In existing literature, many researchers attempted to analyze textual and rhetorical organization of RA introductions (Anthony 1999; Cheng 2007; Gupta 1995; Lewin et al. 2001; Öztürk 2007; Samraj 2002, 2005; Upton and Connor 2001; Yaylı and Canagarajah 2014). It is also a fact that "[i]ntroductions are known to be troublesome, and nearly all academic writers admit to having more difficulty with getting started on a piece of academic writing than they have with its continuation" (Swales 1990: 137). Many decisions have to be made about the type of background, about authoritative versus sincere stance, "about the winsomeness of the appeal to the readership; and decisions have to be made about the directness of the approach" (Swales 1990: 137–138). These difficulties attached to the construction of RA introductions, the assumption that first impression matters, and the availability of textual analysis with models have increased the interest in the introductory parts of RAs.

Motivated by a parallel interest in the construction of introductions but not adopting the usual way of analyzing a corpus of RA introductions by expert scholars, we decided to speak directly with the authors to capture their own descriptions of RA introduction writing in the fields of arts and science. With this purpose, we gathered verbal data from a group of scholars (L1 Turkish) who agreed to share their views and experiences related to the construction and development of their RA introductions in a publication process. We chose the scholars among the ones who have been and are actively engaged in publishing in mainstream journals. We gathered the verbal data from face-to-face in-depth interviews (See Appendix for the interview questions) and in these interviews the questions were focused on both their views about the construction of RA introductions in their field, and their experiences with the construction of a RA introduction in a specific manuscript development. After discussing the challenges they experienced in the revision process of the introduction of a specific manuscript, they were also asked to comment on the problems they observed while reviewing the introductions written by other scholars in their fields. In sum, we aimed to provide insights under four main headings: (1) these writers' construction processes of RA introductions in English and Turkish, the similarities and differences between writing in these languages, the influences on their introduction writing, their awareness of the demands of an English-speaking and information-seeking audience, and the difficulty of writing an introduction (research questions 1 through 7 aimed to licit data for this heading); (2) their descriptions of how they constructed the first draft of the introduction in a specific single-authored manuscript published in a mainstream journal earlier (research question 8); (3) how they revised these introductions and the challenges/problems they experienced while revising (research questions 9 and 10); and (4) while reviewing others' introductions, what expectations they had and what problems they observed (research questions 11 and 12). We base the discussion of the verbal data according to these four main concerns of the study.

## 3 Methods

### *3.1 Participants*

Purposeful sampling was used in this study as we aimed to investigate the RA introduction writing processes by expert Turkish scholars in arts and science. These scholars, all were NNS of English, were among the successful ones in their acts of publishing in mainstream journals. As Gosden (1995: 37–38) reminds us, the concept of success here "is judged from the processes of peer review, negotiation, revision, and eventual acceptance for publication of research articles (RAs) in international English language scientific journals." These successful authors' composing of RA introductions and their interactions with external factors such as reviewers and editors are flexible and interdependent. In other words, drafting,

**Table 1** Participants of study

| The pseudonyms of the scholars | The university they were employed at | Their field of study | The institutions they received their graduate-level education from |
|---|---|---|---|
| Art1 | Boğaziçi University | Foreign language education, and second language acquisition | Durham University, the UK, Second language education |
| Art2 | Dokuz Eylül University | Teacher education and educational administration and supervision | İnönü University, Turkey |
| Sci1 | Pamukkale University | Constructional engineering | Newcastle Upon Tyne, the UK |
| Sci2 | Pamukkale University | Medicine, ear, nose and throat | İzmir Atatürk Education and Research Hospital |

composing and development of RA introductions are shaped and affected by external and text-internal factors, which are ongoing until the final draft appears in print. In the present study, with a case-study approach, we aim to qualitatively document how these successful NNS scholars construct their RA introductions in arts and science, how they respond to external and text-internal factors while shaping their writing, and what problems they observe in their reviews of others' RA introductions.

## *3.2 Data Collection*

To collect the verbal data, the first author arranged meetings with these four scholars in their convenience. The face-to-face interviews were audiotaped with the consent of the scholars who were employed in three state universities in Turkey. One of the interviews was done completely in English as the scholar was in the field of second language acquisition and actively used English in classes; and the rest was conducted in Turkish, but at some points there was a mixture of two languages. After the transcription, the first author translated the Turkish data into English. While two of the participants (i.e., Sci1 and Art1) were trained in the UK, the other two (i.e., Sci2 and Art2) received their graduate level education in home institutions (Table 1).

## *3.3 Data Analysis*

The analysis of the verbal data was qualitative content analysis. We followed the linear and hierarchical approach of qualitative data analysis suggested by Creswell (2009) who outlined steps like: (1) organize and prepare the data for analysis, (2) read through all the data, (3) begin the detailed analysis with coding, (4) use the coding process to generate a description of the setting or people as well as categories and themes, (5) discussion of the categories and themes, and (6) an interpretation of

the data. As we know, "[c]oding is the process of organizing the material into chunks or segments of text before bringing meaning to information" (Rossman and Rallis 1998: 171). Unlike axial or selective coding, the coding of the present data was basically open coding which is "the process of breaking down the data for the purpose of categorizing, conceptualizing and comparing" (Richards 2003: 276). For the responses gathered on the construction of RA introductions, we used Swales' recent CARS model (Swales 2004) as a starting point, but most of our interpretations depended on the themes emerged in the verbal reports of the L2 research-writing practices of this group of NNS expert researchers. For the interpretive validity purposes (i.e., making sure our reading was in line with the way things were) and for the reliability purposes (i.e., our representations of the themes were consistent in readings), we asked a colleague who is also an expert scholar in terms of his publications in language education to judge whether our interpretations of the participants' statements were adequately grounded, and a definitive agreement was achieved.

## 4 Results and Discussion

### *4.1 Expert Writers' Construction of RA Introductions*

The first three questions of our interviews asked the participating scholars to describe how they construct the introduction of their RAs in English and in Turkish and the similarities and differences between writings in these two languages. In terms of the construction of introductions, all the participants unanimously stated nearly the same style of organization which is based on several steps: (1) a brief reflection of the phenomenon or topic that has received attention in their field with the help of a careful and thorough reading of existing theories and literature, (2) identifying a missing part or gap in the existing literature and (3) a description of the purpose of their study. Only Art1 stated that after highlighting the significance of the study, she gives also a synopsis of the possible findings briefly and then the organization of the manuscript in the coming parts. These steps are greatly in line with the three moves of the CARS model (Swales 1990) (i.e., Move1-establishing a territory; Move2-establishing a niche via Step1A-indicating a gap; and Move3-presenting the present work via Step1- announcing present research descriptively and/or purposively). The following excerpts taken from the taped utterances of the participants exemplify the stages they follow:

> First I do a careful and thorough literature review about my topic of interest. After reading the related literature, I identify the missing part, a gap in the field and I present this gap in my research questions. Then I describe the purpose of my study, the methodology and ways of solving the problem. (Sci1)
>
> First of all, I begin with the particular phenomena that I will be focusing on in a particular study. For instance, if there is a well-debated question which has been pervasive in the field in child or adult second language acquisition, I start with a reflection of it. …Then I try to highlight why the kind of research that I will be reporting on in any particular paper is

> important. … So in that sense I begin with a little bit of background in first language acquisition then adult second language acquisition including the theoretical assumptions and hypotheses discussed in the field, then I try to highlight the significance of the kind of the research that I will be reporting on in that particular paper. It must contribute to the field both in methodological terms and in terms of research questions. ..After highlighting the significance of the study, I give very briefly a kind of synopsis of the possible findings but very briefly. Very briefly I give what I have found. Then I give the organization of the paper, I say this paper has been organized as follows…(Art1)
>
> I start with the purpose, what is my purpose in this study? What is my hypothesis? I need to be clear on these and this purpose statement is one or two sentences long. Then I describe how I ended up in this purpose in paragraphs step by step, so my purpose is the last paragraph of my introduction but I start with it. (Sci2)
>
> It must be an introduction that has a philosophical base with different perspectives and must move from general toward more specific. What it the concept I am dealing with? What is its connection to education and how is it related to my problem? These are the key questions I have while designing the introduction. (R: How do you construct the introduction step by step?) First I focus on the concept that I am targeting. For instance if I study happiness, I define what happiness is, or how happiness is defined from different perspectives. I mean I try to include critical perspectives as well as mainstream ones. Then I check if this concept, for instance happiness, has been studied in different fields of study. I mean I inspect how sociologists study happiness and how medical doctors study it…Later I analyze the connection between this concept and education. I give examples from important studies and then present its connection to my field, educational administration. And then I highlight why this concept is important in our field and present the problem of my study…I like finding gaps. I try to find original ideas that have not been studied before. (Art2)

Since Sci1 and Art1 have done their graduate studies in the UK, while Art2 has studied in a language program for his BA in English and Sci2 has a good command of English, they find writing in English easy and fun. Either through their education abroad and/or through their readings on their field in English, they have achieved competency in academic writing. They are scholars who find writing their academic papers in English a lot easier than writing them in Turkish. Unlike the Japanese novice writers in Gosden's study (1996), who most of the time preferred translating from L1 to L2 in their academic writing due to the prevailing emphasis on grammar-translation in their foreign language education, the expert Turkish scholars who receive a similar foreign language education do not prefer translating. Being able to express their thoughts successfully in English without translating from L1 can be seen as a sign of expertise in academic writing.

In terms of the similarities and differences they observed in their introductions in English and Turkish languages, they unanimously emphasized that they follow the same organizational patterns in two languages. Not surprisingly, these statements oppose the contrastive rhetoric orientation which was a ruling paradigm in 1970s and 1980s and supported the view that linguistic and rhetorical conventions of the first language interferes with second language writing as first language patterns are transferred to second language writing. Traditional contrastive rhetoric was severely criticized for being stereotypical and abandoned in emerging writing traditions (Raimes 1991). The participants' statements here prove that especially expert writers who are fully aware that different languages provide different resources for organizing texts, are also well aware that a certain genre requires a certain text logic. We can say that

while following the same organizational pattern (i.e., designing the introductions according to the three moves in the CARS model) in two languages, these scholars emphasize the idea that RA introductions are basically problem-solution texts, which are not influenced directly by the choice of languages. Besides, the fact that RA introduction writing in Turkish does not have standards but is specified according to the journal expectations may in this sense empower these scholars who do not mix L1 and L2 writing traditions for the given genre:

> While writing an RA in English, I always use English, I mean I do not translate from Turkish. Also, the standards are clear for RAs in English. There is an introduction, problem, purpose, methods and conclusion and it is a system but we do not have standardized norms for articles in Turkish. That is why I use the same format while writing RAs in Turkish or mentoring dissertations of my students in Turkish. (Sci1)

Similarly, while responding to the fifth research question (i.e., Could you describe the demands of an English-speaking and information-seeking audience from RA introductions in your field? How do these demands influence your writing?), they stated that they did not identify any specific demands of English-speaking audience in international journals form their RA introductions. They claimed that they had never thought of the expectations of Turkish-speaking or English-speaking readers when they wrote their introductions. Especially science scholars (Sci1 and Sci2) opposed the idea of designing a paper paying attention to readers' expectations, which they found more like "a customer-oriented attitude" (Sci2, transcriptions, p. 15). The only demands the arts scholars identified were that international reviewers are more demanding (Art1), and that international readers want to be convinced as they want you to strongly establish the connection between your problem and the concept you are working with (Art2).

Although the participants all agreed on the fact that they construct their introductions in the same way in both languages, and they do not feel any influence of their readers on their writing, they also stressed some related issues of importance. While remembering some earlier publication experiences with national journals in Turkish, for instance, Art2 complained of the rigidity of reviewers' expectations. He severely criticized the research paradigm and academic writing conventions in national journals stating that he feels restricted and not free at all while writing RAs in Turkish:

> (R: Could you describe how you construct the introductory part of RAs in your field in Turkish language?) I follow the same way but I must admit that while addressing international readers, I write by paying attention to journal expectations. I mean after specifying a journal I know that I have write in a more convincing way in introduction and other parts to get admission for my paper. In national journals, this motivation gets lower. (R: What different points do you pay attention while writing RA introductions in Turkish?) I feel more restricted while writing in Turkish. (R: Why?) There are a lot of restrictions in academic writing in Turkish. For instance, many national journals do not accept the agency of authors, they oppose the use of pronoun I, for instance. They are conservative. (R: They expect passive structure.) That is right. We use passive structure and pretend not to exist in writing. This does not sound sincere to me so I do not feel happy while writing in Turkish. Writing in English however is more fun. I can use I. In Turkish, I need to follow the rigid academic writing structure stating my paradigm and research questions one by one but in English authors are allowed to create their own way of writing so it is a more free and more fun kind

> of writing. Reviewers are more flexible. I include jazz, cinema and culture in my English writing but the same cannot be accepted in Turkish writing as reviewers are conservative. (R: What could be the reason?) There is a conventional format expected of authors in our national journals and they do not want to stretch it or to be stretched by authors.

While following the CARS model in their RA introductions in two languages, this arts scholar does not see a possibility for voice or for sincere versus authoritative stance. This mostly stems from the differences in academic traditions in national and international journal. In Turkey, like many other Asian countries, signs of agency with the use of "I," creativity with the use of new ways or to create authorial voice are not encouraged. Modesty and being humble are expected of authors, and they should not go beyond the limits of appropriate academic writing whose lines are not clearly visible but dependent on reviewers' openness for change and creativity. Similarly, although science scholars opposed the idea of designing a paper taking reader expectations into account, they at the same time mentioned their dissatisfactions with Turkish-speaking reviewers and expressed a strong preference for publication in international journals:

> There is a huge gap between English-speaking and Turkish-speaking reviewers. Once you send a paper to a journal abroad, English-speaking reviewers see it as effort and hard work but unfortunately, some Turkish-speaking reviewers do not appreciate hard work and focus only on the weak sides. They try hard to find ways to reject the paper. That is why I published most of my RAs in English. (Sci1)

This line of thinking corroborates with the finding that the doctoral students in Cheung's study (Cheung 2010) found editors and reviewers in English language journals sympathetic toward nonnative English speaking writers' contributions. Such negative experiences with their research communication with home journals stated above shows how the acts of participating in the established mechanisms of communication of particular discourse communities are important (Gosden 1996) and can be disheartening. Similarly, while answering the fifth research question on the demands of an English-speaking audience from their RA introductions, Sci1 stressed the differences between readers/scholars who know English and are capable of following publications in English and the ones who cannot in his field, constructional engineering:

> Here I think we need to distinguish readers here. In Turkey, there are readers who do not know English and read only the RAs in Turkish within my field. Since they do not know the standards of an RA introduction writing, I believe that they do not read the introductions. (R: Why do you think they do not read the introductions?) They do not give importance to the introduction, they just read the methodology and the conclusion. But the readers in the USA, Europe or Asia read the introductions in great detail to see whether the problem was identified successfully. This is how I feel because this is something cultural. I was provided with this culture I mean this way of RA writing abroad. Unfortunately, I cannot see this format in the academic writings of my colleagues who have not received education abroad. When I read the dissertations of students advised by such colleagues, I read 30 or 40 pages but I cannot see the problem or the purpose. In fact these should be clearly stated right away. (Sci1)

Such comments indicate that these expert scholars have developed an insight of two standardized conventions of academic writing; one in English used in international

journals and the other one in Turkish in home journals. While Cars model provided a basis, the way of achieving these moves and steps are done differently according to the writing contexts. An equally important issue is how these scholars have learnt/acquired the necessary skills to be successful in academic writing. The fourth interview question focused on the participants' views on the influences on their construction of introductions. The most commonly stated influences were their readings in the field (Sci1, Sci2, Art1 and Art2), their first paper for an international conference (Art1), their RA publication experiences in national journals (Sci2) or in international journals (Art2), their education abroad and their advisors (Sci1 and Art1),and some more experienced research assistants they were working together with (Sci2). They all put emphasis on doing repeated and careful readings not only to be competent with field knowledge but also to discover the skills attached to academic writing. However, as a scholar in educational administration, Art2 stressed the necessity of doing readings in other fields as well to cultivate a more sophisticated vision and to create a unique voice in writing:

> As I said before I am a disciplined reader in my field but at the same time I like working on different areas and reading in different fields. I like jazz and cinema. Mythology influences me a lot. I like integrating all the things I learn from these sources in my academic writing. Such attempts of mine satisfy my needs to be different from others or to be unique in writing. These different sources feed me in many different and useful ways…. Having read mythological texts is a blessing in my opinion. Since my BA, I am interested in cinema. I watch a lot of films and feel that this influences my story-telling in my writing. (Art2)

When asked to describe how they wrote the RA introductions with the sixth interview question (i.e., Could you describe the process of writing the RA intro–do you compose it after writing the whole article? Do you tend to revise this more than the other sections?), all the participants unanimously stated that they wrote the introduction first but after writing the whole manuscript, they check the wholeness and consistency of the introduction and/or discussion. Introductions are also revised several times according to some text-internal or text-external factors:

> Initially I write the introduction but that introduction gets modified a lot of course. Not only because of the reviews that I receive but also during my internal process of writing even at the beginning of the writing process, I go back and see what I wrote. I go back and forth. (Art1)

In sum, both arts and science scholars mentioned similar line of introduction construction, favored indicating a gap (i.e., establishing a niche through indicating a gap, Move2 Step 1A in the revised CARS model) and did not feel pressurized with reader expectations but they differed in terms of their views on the difficulty of composing this section of RAs in their field. While responding to the seventh question in the interviews (i.e., Can you compare the difficulty of composing this section to the other sections in a RA?), all the participants emphasized the need for a good and powerful introduction. Sci1, Art1 and Art2 in the fields of constructional engineering, second language acquisition and educational administration respectively found introduction the most important, the most frequently revised, and the most difficult section to compose in a manuscript.

> It is the most difficult part to compose because you have to read thousands of pages long literature to summarize the necessary parts for your study. And it is not an easy task to understand what someone has done in his study and has not done, I mean finding an important gap is not easy at all. (Sci1)
>
> I rewrite and rewrite the introduction maybe several times just before submitting because this is challenging. You have to say the very crucial aspects of your paper in the introduction section, your theoretical assumptions, your phenomena that you deal with, a little bit of background information about the phenomenon and the significance of your study. In that sense, it has challenges of course…. It has to address the audience in a such a way that they should actually get interested in the rest. (Art1)
>
> This is the part I spend most of my time and I definitely revise the introduction more than the other parts. Also it is the most entertaining part to me where I can show my creativity. Methods and results are more like a technical report which has a more structured nature. There is interpretation in the results but still I find introduction more challenging and entertaining. (Art2)

Sci2, who is a medical doctor, however stated that introductions should be short and simple with two or three paragraphs of one or two sentences. He found introduction, method and conclusion parts highly objective and easy to write but to him discussion is the part that requires good knowledge of the field. Following what he said in our interviews, since introductions in RAs in medicine have to be kept short and simple, we can say that this section does not cause a big difficulty for or require a meticulous work by these scholars unlike the ones in other fields:

> I think the most difficult part to compose is the discussion. Introduction, method and conclusion parts are highly objective and are easily written. When it comes to discussion, it is easy for authors to divert to irrelevant points or they suffer from a vicious circle by stating what others have said. Discussion is the part that requires good knowledge of the field, expertise. (Sci2)

## *4.2 How These Scholars Constructed the First Draft of Their Introductions in A Specific Single-Authored Manuscript*

With the help of the eighth question in the interview, we aimed to capture how the participating scholars constructed the first draft of a specific single-author RA introduction. The participating scholars shared one of their early publications and analyzed the structure of their RA introductions through identifying the communicative purposes served together with the first author in the interviews. As said earlier, both arts and science scholars' descriptions of their composing of introductions were in harmony with Swales' CARS model (Swales 2004), which has received acceptance and popularity in diverse fields. In line with this, their descriptions of their own texts were also observed to follow the outline suggested in this model as evident in the excerpt below with a move-step analysis:

> This first paragraph is a brief introduction to the topic, traffic control I provide some definitions for instance. I reflect the main studies in this field (Move1). Then there is a literature review and I use literature to state why there is a need for this study, this is about the problem

(Move2-Step1A). The last three paragraphs are about the purpose of this study (Move3-Step1) and the difference of this study from the previous ones (Move3-Step6). (Sci1)

### *4.3 How They Revised These Introductions and the Challenges/Problems They Experienced While Revising*

After the participants expressed how they designed the first draft of a specific single-author manuscript, they were asked to comment on how they revised the first draft under the light of the reviewers' comments. For science scholars, the common point was that they received criticism on their language. Sci2 mentioned that one of the reviewers changed his statement of purpose and he felt that the reviewer aimed to make it sound more academic. Other than the language issue, he said he did not receive much criticism. Similarly, although Sci1 was trained in the UK, some of his statements needed to be revised to reflect more proper English. Also, he was asked to emphasize the difference of his study from the previous ones and to rearrange some paragraphs to better reflect the methods to be used in his study. This reminds us of the top-to-down approach used by the more-skilled writers who delay the consideration of lexical and grammatical problems until the final stages of writing (Zamel 1983). However, we should also keep in mind the warning by Gosden (1996: 121) to NNS novice writers that "'rough' writing practices are simply 'poor' practices."

For the arts scholars' first drafts, the common problem identified by the reviewers was the need for further details of the phenomenon or background of the study. While Art1 was asked to include more background on first language acquisition, Art2 was asked to address some other necessary and important studies on ethical use of computers, which were missing. Art1 added a new paragraph and a footnote to deal with it while Art 2 followed the advice of the reviewer to read further. Art2 also received a comment on the methodology of his study and carried out focal group interviews to make it a mixed method one. He found himself lucky to hear from the reviewers soon so that he conducted the interviews with his participants before they graduated.

When asked if such comments were typical in their fields, Sci1 said that papers are typically criticized for their language use and paragraphs are asked to be rearranged to reflect the purposes better in engineering. For medicine, Sci2 stated that they do not receive a lot of comments on introductions which they have to keep short, simple and concise. As the biggest problem, reviewers may find introductions too long with unnecessary information. As for the arts scholars, who were both in the field of education broadly, it was hard to describe some typical reviewers' comments in their fields. The comments were mostly manuscript-dependent but the most commonly received ones were the need to expand the background, or the need to expand the significance of the study in its context. What Art2 repeatedly

emphasized was that the reviewers in international journals seek to be persuaded of the significance of a study; therefore, success mostly depends on how persuasive you can be in the introduction.

In terms of the challenges they experienced with the revision of these RA introductions, science scholars said that they did not have any challenges while responding to reviewers' comments. Although arts scholars also did not find the comments they received on the introductions at hand challenging, they considered them more expressive and suggestive. They shared some crucial points related to their interactions with reviewers' comments. Art1, for instance, stressed the power of editors and the importance of a healthy communication between writers and reviewers without leaving any comments untouched, which reminds us of the crucial importance of negotiation process which precedes publication (Knorr-Cetina 1981):

> (R: What were the challenges you experienced during these revisions?) There were not challenges. Writing such academic papers, authors must know that editors are very powerful. They should clarify why they do X but not Y, but at the same time they should find a way to address the comments and suggestions. As a writer and a researcher what I feel is that I cannot for instance disregard any of the comments or issues raised by the reviewers. Even if I cannot satisfy their expectations, I should highlight why I cannot do this to that extent. I do not have the luxury of leaving or ignoring a reviewer's comment or suggestion. This is what I tell my graduate students.

As another point, after also stating that he did not have any special challenges in the revision process of that specific introduction, Art2 reflected a problem which he experienced some other time. Here this scholar felt constrained with a comment he found unacceptable and decided to reject this comment although he was well aware of the fact that he had to satisfy the reviewers in the revision process. He touched upon the dilemma scholars sometimes experience and this dilemma probably stems from the fact that sometimes reviewers cannot support their criticism with sound reasons.

> (R: What were the challenges you experienced during these revisions?) I did not have any challenges in the revisions for this manuscript but sometimes I have challenges. For instance some reviewers make some suggestions which I cannot accept. I can say I do not accept this suggestion but this comes together with a risk of being rejected. This is something I avoid as scholars in Turkey we need to publish to get promoted. But I sometimes reject reviewers' comments, I take this risk if the comment is not acceptable at all.

## *4.4 What Expectations These Scholars Have and What Problems They Observe While Reviewing Others' Introductions*

The last two questions of the interviews emerged naturally as a part of sharing ideas with the scholars, who are experts in their fields and receive offers of revisions from both national and international journals. In terms of their expectations, they unanimously claimed that they expected to see a similar line of the qualities they were concerned with while designing their own introductions. In Art2's terms, "authors

should pay attention to…the general outline of an academic paper introduction" (transcriptions p. 9). Broadly, authors in both arts and science are expected to follow the CARS model with good background knowledge, a clear statement of the urge for the study (Sci1), a clear purpose of the study so that the readers can see what has brought the author to this point (Sci2), a strong theoretical basis (Art1) and a convincing tone (Art2). As a reviewer, Art2 states that he must be convinced of the need or the rationale of the study. Also, a long list of reference items is seen as a crucial element showing the strength of a background and/or literature. In sum, the quality of an introduction depends on a powerful background "which becomes visible in the reference list" (Art2, transcriptions, p. 12).

In terms of the problems they observed in the introduction of the manuscripts they reviewed, the most common ones were the lack of a clear problem or purpose (Sci1, Sci2, Art2) and missing references due to a lack of adequate knowledge of the field (Art1 and Art 2). Such introductions were criticized and even rejected because of "the lack of a good mechanism leading the researchers to a purpose or the problem of the study (Sci2, transcriptions, p. 16). Besides this, art scholars also emphasized a long list of references as a sign of quality which means knowledge of all the necessary works within a field of study.

## 5 Conclusion

Unlike the many studies conducted on the textual analysis of RAs published, with a qualitative analysis of four expert scholars' verbally reported views on their RA introduction constructions, we aimed to understand their composing processes. While the CARS model proved its proto-typicality, as all scholars were concerned with a good background followed with a clear purpose to complete a gap in their fields, the ways of tailoring the content of their writing came together with an awareness of the differences in academic traditions in national and international journals. Stretching the limits in writing, agency, creativity, and voice were emphasized by an arts scholar who complained of the rigid writing traditions within home journals. Science scholars also showed a preference for publishing their manuscripts in international journals because of their dissatisfaction with the academic writings of their monolingual and/or less informed colleagues who are reviewers in home journals.

As a response to the valid criticism that "ESP had concentrated too much on the end product …and too little on the learning skills needed to enable students to reach the desired end behaviours" (Dudley-Evans and St John 1998: 26), we must admit that both ESP teachers and learners need to pay more attention not only to work out the meaning of a text but also to the meaning creation stories of expert writers. Therefore, we believe that several comments provided by these scholars upon their construction processes, their challenges with journal expectations, the problems they observe in others' writings, or the differences they expressed about the academic traditions in different journals have the potential of creating an insight "to support the initiation of NNS novices into the international research community"

(Gosden 1995: 37). To put it succinctly, in line with the major paradigm shift in composition theory from product to process and from process to genre, and the research-based language education in the ESP view of genre, we should not only examine the written texts of expert scholars but devote time and effort to listen to their construction stories. This allows for an analysis of texts as goal-oriented, staged, and social interactional, which may also help scaffold the harsh realities experienced by novice scholars on their way of becoming well accepted members of a particular discourse community. As the last point, we cannot tell to what extent our findings as generalizable with the participation of a small number of scholars but we can at the same time claim that their statements have specific relevance in their fields within arts and science.

Finally, in terms of raising the profile of ESP in the academy, personality and experience are crucial for success as emphasized by Stewart (See chapter "Expanding Possibilities for ESP Practitioners Through Interdisciplinary Team Teaching" in this volume). Therefore, it is of great importance to hear practitioner research stories (See chapter "Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use") and ESP students', teachers' and graduates' views regarding the specific language courses designed for their academic and professional needs (See chapter "Perceptions of Students, Teachers and Graduates About Civil Aviation Cabin Services ESP Program: An Exploratory Study in Turkey"). Taking note of these experiences shared facilitates and contributes to our design of both ESP courses and of our research engagement as teachers within our local ESP contexts; and thus, the final products' (i.e., our RAs') chances of acceptance for publication might greatly increase.

## Appendix: Interview Questions

1. Could you describe how you construct the introductory part of RAs in your field in English language?
2. Could you describe how you construct the introductory part of RAs in your field in Turkish language?
3. What are the similarities and differences?
4. What influences you to structure the RA introduction this way in English language – advice from a mentor or colleagues, other RA's, reviewers' comments, literacy brokers such as friends or copyeditors from outside academia?
5. Could you describe the demands of an English-speaking and information-seeking audience from RA introductions in your field? How do these demands influence your writing?
6. Could you describe the process of writing the RA intro–do you compose it after writing the whole article? Do you tend to revise this more than the other sections?
7. Can you compare the difficulty of composing this section to the other sections in a RA?

8. Specially in the first draft of this RA, how did you construct the introductory part?
9. How was the introductory part shaped and reshaped during revisions in response to comments by reviewers and editors in the following drafts? I mean what changes did you make and what was the reason of these changes?
10. What were the challenges you experienced during these revisions?
11. When you are a reviewer for mainstream journals, what are your expectations in RA introductions in your field?
12. What problems do you observe in RA introduction writing of others?

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# Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use

**Tuula Lehtonen**

**Abstract** This chapter focuses on practitioner research related to ESP at a language centre in Finland. Offering a personal account of my practitioner research, it aims to highlight factors relevant to other practitioners. First, I describe the circumstances and conditions that have helped me do my research as a teacher whose main duty is to teach and not do research, and how the process of doing research has helped me grow professionally. Second, I discuss what I have discovered about English for Specific Purposes (ESP) while carrying out two related, yet separate strands of research on workplace language needs and what curricular relevance my findings bear. This chapter serves as an example of one context and one type of practitioner research, and its findings and observations cannot be generalised, as each context is different and each practitioner has different issues worth researching. However, based on this chapter, the practitioner needs a supportive environment to follow or do research. A supportive community lowers the threshold of doing research, helps to share with other practitioners and students, facilitates the research process and promotes professional development.

**Keywords** English for Specific Purposes · Exploratory Practice · Language learning beyond the classroom · Language teaching in higher education · Practitioner research · Workplace language needs

## 1 Introduction

A few years ago, a colleague and I ran a workshop at the *Language Centres in Higher Education: Sharing Innovations, Research, Methodology and Best Practices* conference in Brno. The participants, ESP and other teachers from different language centres mainly in Europe, had a shared view about research engagement: they

T. Lehtonen (✉)
Language Centre, University of Helsinki, Helsinki, Finland
e-mail: tuula.lehtonen@helsinki.fi



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liked the idea of doing research and many revealed they had done some research or taken part in teaching development projects, but they also disclosed that there were barriers in their professional lives that were too great to overcome, and research, quite often, remained unattainable (Lehtonen et al. 2015b).

In the workshop, about 40 participants from ten countries were asked *what is required of their workplaces* and *what is required of them as individuals* if the goal is to encourage research engagement.[1] It is reasonable to expect that the participants were not neutral to the topic: they most likely were intrigued by doing or failing to do research and thus chose to participate. After all, several parallel activities were arranged at the conference, but these teachers opted for the workshop. The findings regarding the workplace show that not only does the workplace need to allow for time to be research active and have enough financial resources, but it should value different types of research from doctorates to small-scale projects. In addition, the workplace ideally promotes personal growth and professional development. Many of the participants deplored the fact that language centres are often considered teaching organisations where research engagement is not actively encouraged. It was suggested that, to tackle this attitude or strategy detrimental to research, language centres should start using discourse that focuses on research-based teaching development rather than research, creating a niche of their own.

The workshop also clarified an individual teacher's situation. A few of the participants felt they have, at times, too much work and stress, and not enough time, support and appreciation by other teachers and superiors in the same institution to be research active. In addition, a few revealed that they do not know how to carry out research or that they had fallen out of the habit of doing research. Despite these challenges, many of the participants found research appealing: it helps in networking and building contacts, broadens one's expertise, gives personal satisfaction and promotes new approaches to teaching, thus benefiting students.

The challenges and benefits of teacher research discussed in the workshop in Brno are similar to those found in literature (see, e.g., Allwright and Hanks 2009; Borg 2010; Borg and Sanchez 2015; Hanks 2015b; Lehtonen et al. 2015a, b). For me personally, the workshop acted as an eye-opener. It encouraged me to reconsider my own practitioner research. One of the strains in my practitioner research has looked into graduates' language needs at work and into the experiences of soon-to-graduate Master of Laws students related to language use in traineeships. Two wide-ranging sets of questions came to my mind after the workshop. The first is directly related to the workshop themes: What circumstances and conditions have helped me do research as a teacher whose main duty is to teach and not do research, and how has the process of doing research helped me grow professionally? The second is indirectly related to the workshop themes: What have I discovered about English for Specific Purposes (ESP) while carrying out the two related, yet separate strands of research and what curricular relevance do my findings bear?

The aim of this chapter is to answer the above questions. As both sets of questions stem from my professional context, the answers will be somewhat subjective.

[1] Johanna Vaattovaara and I owe the idea how to structure the workshop to Borg (2010).

However, I use my two strands of practitioner research as examples, rather than models to be followed. By extension, the aim is to encourage other ESP/language teachers to do practitioner research in order to develop professionally.

## 2 Practitioner Research

Research carried out by teachers has many names. Practitioner research is an umbrella term for various types of teacher research, and indeed, for research carried out by other professionals within their professional contexts. However, other terms are available to describe the act of teachers doing research, such as teacher research, action research, reflective practice, classroom research and Exploratory Practice, each with a different focus and a different ideology (see, e.g., Burns 2010; Borg 2010; Borg and Sanchez 2015; Hanks 2015b; Allwright and Hanks 2009). For the purposes of this literature review, I have chosen to briefly explore two approaches referring to teachers doing research in their own work contexts: teacher research as discussed by Borg (2010) and Borg and Sanchez (2015) and Exploratory Practice as discussed by Allwright (2003), Allwright and Hanks (2009) and Hanks (2015b).

Borg and Sanchez (2015, 1–2) characterize teacher research as being systematic and having a focus on self-study, in other words teachers studying themselves and/or their context. According to Borg and Sanchez, teacher research should have real-world impact and, instead of being a private activity, it should be made public in one way or another. Methodologically teacher research has many degrees of freedom, but teacher research needs to be planned so that it is realistic despite challenges with time, resources and knowledge, and other possibly constraints. In other words, teacher research needs to be feasible (Borg and Sanchez 2015, 2–3).

Borg (2010) writes about teachers' engagement *with* research and teachers' engagement *in* research. When teachers engage with research, they follow, for example through reading, research carried out by other teachers or researchers. This research often stems from contexts that are different from their own. When teachers engage in research, they actually do research either in their own contexts or other contexts. What one teacher defines as research may not be characterised as research by another teacher.

The benefits of teacher research are many and can be observed at many levels. The teacher's personal and professional growth, such as increased self-confidence, motivation and collegiality have been noted (Borg 2013; Lehtonen et al. 2015a, b). Institutions where teachers are research engaged have been observed to benefit from increased activity and sharing, among other things (Borg and Sanchez 2015; Lehtonen et al. 2015a, b). Students who interact with teachers who are research engaged gain as well because their teachers are better informed and more confident (Borg and Sanchez 2015).

The challenges teachers face when doing or wanting to do research have been reported and are similar to those outlined at the beginning of this chapter. Borg (2010), for example, lists several barriers to teacher research: non-collaborative

school culture; limitations in teachers' awareness, beliefs, skills and knowledge; limited resources; demotivators such as teachers' lack of ownership in their research; economic matters; leadership attributes such as no support from the leaders; and political issues.

One of the reasons for the emergence of Exploratory Practice (EP) would seem to be the great benefits and possibilities of teacher research and its equally great challenges. My first encounters with EP were at conferences related to language teaching where language teaching practitioners would present their EP projects. A few years ago, I took part in an excellent workshop by Judith Hanks (Hanks 2015a). It encouraged the participants to engage in this particular form of practitioner research that "aims to integrate research, learning and teaching" (Hanks 2015b, 612). One of the appeals of EP is its practical approach that aims to enhance our understanding of the context where we spend several hours a day. In an early summative review of EP, Allwright (2003) states that there is "a perceived need for practitioner research to be *rethought*: to be refocused on *understanding*, and ultimately on a concern for the quality of life in the language classroom, for both teachers and learners".

EP is founded on seven principles (see Allwright and Hanks 2009), many of which are relevant to this chapter although neither one of my projects was planned as an EP project. To sum up, the principles of EP entail the idea that "the quality of life in the language classrooms they [practitioner researchers] inhabit is enhanced by the research they undertake" (Hanks 2015b, 614). The approach also advices us to work for understanding(s). This means that a language teacher engages in a "puzzled inquiry" within the normal classroom routines (Hanks 2015b, 614). In addition, the approach encourages teachers, researchers and learners to work together. This means that research is not done in isolation but that all those participating in it benefit from it (see Stewart 2017 for the benefits of interdisciplinary team-teaching). The approach also directs us to use our pedagogic practices as research tools, thus creating "a sustainable ecology of research and pedagogy" (Hanks 2015b, 615). This integration of the research work into pedagogic practices "is a way of minimizing the burden and maximizing sustainability" (Allwright and Hanks 2009, 154). The term sustainability seems to suggest similar issues to what feasibility does in Borg's terminology.

## 3 Context and Two Strains of My Research

This section focuses on rather localized research I have carried out as a teacher-researcher who aims to be aware of and develop her teaching within her own context. The various themes highlighted in the previous sections will evidently be present here, themes such as engaging in or with research, finding the time and resources to do research, promotion of personal growth, the involvement of students, and appreciation of research in the work community.

## *3.1 Context*

Most of my teaching and research experience comes from the Language Centre at the University of Helsinki, Finland, where I work as a Senior Lecturer in English. The University is relatively large with its close to 40,000 students. The Language Centre is not small either: we have around 60 full-time teachers, working in conditions that can be described as good. To allow our students to fulfil their degree requirements as set by a Government Decree, the University has tasked us to provide our Bachelor's students with the possibility of demonstrating their language skills in the minimum of one foreign language and the second official language of the country, Finnish or Swedish, depending on the student's mother tongue. Most students opt to take part in a language course instead of showing their skills in an exemption test, which we also arrange. In addition, the Language Centre offers optional courses to all students as well as courses aimed at students doing their Master's or Doctorates. Most of the teaching of English at the Language Centre can be described as ESP or English for Academic Purposes (see Partridge and Starfield 2013).

The Language Centre has for quite some time actively encouraged its staff to engage with or in research or teaching development, by arranging various regular events and activities that aim to offer support for research and teaching development (Lehtonen et al. 2015a, b). At least partially because of this support, many staff members participate in different, often small-scale teaching development and research projects as well as in more time-consuming research, such as working on a PhD. I consider my wider work context fertile for and supportive of fresh ideas, novel approaches, fruitful cooperation and research of different type. At an institutional level, conscious effort and work has been put into a framework that makes resources and time available – not a lot, but at least enough for interested teachers to feel their research work is appreciated and, by freeing them from a course or two of teaching, to allow them to invest a bit of their valuable time in research. The Language Centre as an institution has a relatively liberal way of judging what constitutes teaching development or research fit to our context, and it respects various ways of professional development that may promote personal growth. The Language Centre has worked hard on establishing this type of suitable institutional support (Lehtonen et al. 2015a).

In practice, however, even though a fertile and supportive environment clearly increases the likelihood of research engagement, it is not always enough. The choices and values of an individual teacher form an intricate interplay with even the most supportive workplace.

My own work is quite varied. In addition to teaching, my duties include a considerable amount of administration and supervision as a co-head of a relatively large section: the English Unit has 20 full-time teachers, most of whom actively search to develop their own or our joint teaching, or to do research. My annual workload, thus, consists of teaching and administration – research does not belong to my duties.

The following introduces and discusses my involvement in two teacher research projects. Without my unique context, it would have been impossible to engage in research in the way I did.

## *3.2 The First Project*

The first project took place at a time when the Language Centre did not yet have a systematic approach to supporting practitioner research, but even at that time research was appreciated and encouraged. The project, carried out together with a colleague, was loosely connected to ESP and looked into graduates' perceptions of their own skills and employee representatives' perceptions of the workplace demands (Karjalainen and Lehtonen 2005; Lehtonen and Karjalainen 2008; Lehtonen and Karjalainen 2009). Part of a wider project with a focus on graduates' workplace language skills and needs, this project was inspired by my interest in the wider context of my own work and our students' studies and life after graduation. At the time, our curriculum already took into account the legislation that demanded, among other things, that graduates should be proficient enough in one foreign language to follow the development of their field and to function in an international context. I was intrigued by this notion and a bit apprehensive as to what it meant, and when speaking with my colleagues, it emerged we assumed different futures, different future workplaces and different work demands for our students. The driving force to launch this project was an interest to unveil at least some workplace language demands in our local context and to build my predictions of the future on informed views.

The project was perhaps not a typical practitioner research project – it was a mini-research project that had a bit of funding to enable the team of two to focus, for a limited time, on collecting the data and writing up the research. In a nutshell, we interviewed representatives of 15 Finnish employers who recruited university graduates, analysed the data the best we could and published a report (Karjalainen and Lehtonen 2005). Although this work was inspired by issues stemming from our context, it did not take place in the classroom, nor did it involve students directly. However, it informed us practitioner researchers as well our community about our unique context and some possible workplace language demands in Finland (see Mede et al. 2017 for ESP related to aviation). When presenting the findings locally, it became clear the findings touched the community members in different ways. Some colleagues felt the findings supported their views of the world, and others reacted in an opposite way and criticized our interpretations.

Many of the findings of the study were uncontroversial: languages play a role both in recruitment and at work, and (inter)cultural knowledge and communication skills are important. It was easy in the work community to accept that the interviewees revealed that the ability to communicate is paramount, that language skills do not have to be perfect in many situations and that communication does not only mean language use. However, the increasingly powerful role of English and what

seems like a diminishing role of Swedish in Finland were reasons for contention. It is not difficult to understand that some of the colleagues who did not teach English found the results threatening. However, the English section tried to ensure that the findings were taken into account in our curricular planning so that our students would be able to benefit from the research.

Our research, set in a very localised context, yielded results whose relevance was not easily translatable to other contexts, for example because Finland is officially a bilingual country and because the native languages are spoken by few people. However, some of the findings were relatively easy to transform into publications in English for a wider international audience (Lehtonen and Karjalainen 2008, 2009).

From my point of view as a practitioner, the project was possible because we were given a bit of time off from teaching/other duties, we had institutional support, we had no other major stress factors and we felt we knew how to carry out research. In many ways, the obstacles many teachers say prevent them from doing research were not present.

With my new knowledge arose a new sense of empowerment. However, although I was supported by many colleagues, I was bothered by the juxtaposition a few of them set between the research findings and their personal opinions of what the findings should have been. With no identifiable agenda of my own, I felt puzzled (see Hanks 2015b, 614). In retrospect, that was good because the puzzlement acted as an impetus and fed my interest to continue looking into the workplace needs in my second project described below. In retrospect, I also understand that because the critical colleagues became consumers of research carried by someone else, they did not feel the research was theirs.

The project taught me, for example, that large-scale research can provide a wider picture of the context we are supposed to prepare our students for, but it also promoted new questions, additional to my puzzlement. Many of these questions were related to the graduate experience. What is an individual graduate's experience like? How different are the realities different graduates face? What should we at the Language Centre do to prepare our students for their careers, aware of the multitude of variables? In addition to these questions and a drive to do further research, I became convinced that although the world is changing and we can never quite catch the workplace as it will be when our current students enter into the workforce, the need for communication skills is there and the work of the language teacher is valuable in practicing those skills (see Marra 2013 for need of more ESP research related to work). As a teacher, I feel stronger and more confident because of my ability to share with and discuss some of the findings with my students. Even now that the research described is aged, it can be used as a point of comparison, encouraging students to reflect on their own skills and to imagine different kinds of futures (see research on motivation by Dörnyei and Ushioda 2011).

### *3.3 The Second Project*

The second, still on-going project has been personally relevant and more reminiscent of EP (see Lehtonen 2017), as student contacts initiated the research context. Around the time of the first project, the university system in Finland underwent quite a few changes, one of which was the Bologna degree reform. Within the transition period from the old system to the new, a number of Master of Laws students aiming to graduate as "old" students contacted me, requesting the possibility of fulfilling their missing foreign language credits through alternative means. These students had gained work experience and their English in most cases was professionally proficient. The first step of the project was my rather ad hoc decision to accept an alternative way of fulfilling the degree requirement, but at that point the idea of doing research in the context had not yet emerged. However, the more I studied the first few portfolios put together according to the budding set of instructions, the clearer it became that these reflective student portfolios, revealing work experiences of students soon to be lawyers, could work as a link between the first project and what I still wanted to discover (see Northcott 2013 for ESP/legal English).

In the past around ten years, well over 200 Master of Laws students have submitted a portfolio as an optional way of showing their English proficiency in their Master's degree (CEFR C1) (see Lehtonen 2011, 2017). All students with a sufficient portfolio have been consequently invited to an interview/feedback meeting. The benefit has been mutual: the students have had an out-of-classroom way of showing their proficiency, and I have been given access to information normally not often available. The direct benefit for the students has been the possibility of studying within a set framework with the intention of showing their proficient language skills, of following their own timetables, of reflecting on workplace matters and discovering new strength and weaknesses, and of receiving feedback as part of the process. The indirect benefit for the students has been the opportunity to briefly discuss the findings I have analysed so far and to thus familiarize themselves with the reality at work as seen by the other students. This has allowed the students to reflect on the similarities and the differences of the experiences.

The findings of the project so far complement the picture created by the previous project. The Master of Laws students working as trainees claim the workplace enhances their language learning (see Lehtonen 2017). They elaborate, in particular, on their learning of general English and ESP, especially vocabulary in the field (see Coxhead 2013 for vocabulary and ESP). This learning takes place independent of language teaching institutions, in a context that acts as a scaffold. That context uses team work, engages the employees in project work, encourages them to give feedback and allows them to have feedback from their peers and, especially, superiors. Students as trainees are asked to carry out various open-ended tasks which involve language usage, and in so doing, they improve their skills. What these students report on can be understood with the help of the ecological approach (van Lier 2000). Their learning is highly context-dependent, aided by authentic tasks and

driven by their need to develop. For this type of learning to happen, the students tend to say it is necessary to have relatively good skills initially. The final trend worth taking up here is that the students seem to occupy a bilingual reality at work – Finnish and English are the two most important languages. If a third language is named, it is Swedish. From the curricular point of view, these observations support the idea that language teaching approaches should encourage the practice of real life skills: group work; feedback practices; projects with open choices; multilingual tasks; and rather demanding, but relevant tasks that employ different language skills (see Lehtonen 2017).

This second project has been presented locally and in a few international conferences. Audiences consisting of teachers tend to find the work interesting and recognise the value of such work. They can easily see that this research is feasible/sustainable: with a little extra effort, it has been possible to collect data as part of my normal teaching duties. They can also see the relevance of the results even though each context is unique.

When evaluating the institutional support received for this project, it is clear that my context is rather special in that it has given me a lot of freedom to establish a new way for my students to fulfil their requirement. For several years now, I have been able to allocate a small part of my teaching time into providing students the possibility of showing their proficiency through portfolio work. Because the Language Centre is as research and teaching development active as it is, there have been plenty of opportunities to discuss my work with colleagues and receive support.

## 4 Fruitful Conditions, Professional Growth and ESP

Two sets of questions have guided this chapter. First, I set as my task to find out what circumstances and conditions have helped me do my research as a teacher whose main duty is to teach and not do research, and how the process of doing research has helped me grow professionally.

To enable practitioner research, the workplace ideally has a strategy that incorporates active promotion of practitioner research and teaching development. There are many alternatives for promotion of practitioner research, and, based on our work and observations at our place, we recently suggested a set of criteria to help any institution promote practitioner research (Lehtonen et al. 2015a, 81). One strategic approach to promote teacher research is regularly arranged teaching development events that aim to bridge the gap between the world of research and the world of practice; another is “in house” conferences that act as low threshold events to discuss one’s research. The institutional structures at my workplace have created a mindset that recognizes and acknowledges research in the wider sense of the word: practitioner research is any systematic enquiry, shared in various ways, into whatever puzzles the practitioner within the teaching/work context.

Increased self-confidence and other traits of professional growth have been widely highlighted as outcomes of practitioner research, as part of a growing process (see, for example Borg 2013; Lehtonen et al. 2015a, b). Doing research may sound straight-forward, but for those with little confidence doing research can be daunting initially. However, for those interested in being engaged in research in ESP, possibly the most important factor is sharing with others (cf. Mede et al. 2017). If one teacher does not know enough, someone else might be able to help. It is easier to discover an interest or become puzzled by issues related to teaching or learning if we exchange ideas with other teachers and our students. It is lighter to plan the research and carry out the research process if we pool together with peers and/or students. It is more fruitful to analyse and discuss the findings if we share.

The gradual process of research, with its joys and challenges and with its ability to expand the thinking of the practitioner, is often addictive and encouraging. The different stages of doing research ideally answer the practitioner's questions and increase some sense of understanding of what happens in teaching and learning (for examples of research beyond the classroom by practitioners, see Nunan and Richards 2015).

My second aim was to consider what I have discovered about ESP while carrying out the two related, yet separate strands of research and what curricular relevance my findings bear. The two projects briefly presented in this chapter were related to workplace language needs of graduates. I had initially expected to discover somewhat more specific information about the *language* used at work, but in retrospect, the methods and the choice of participants could not yield this type of information. However, aspects related to ESP surfaced: the need to learn vocabulary and certain work-related genres (see Mede et al. 2017 for another ESP context, and Yaylı and Canagarajah 2017 for genre awareness). The students who reported on their traineeships in the second project wrote about the initial challenge of learning specific law-related vocabulary and the language of contracts in the various templates they encountered. Another issue related to ESP was the focus on the *learning* of ESP. Some students denoted their learning to using conscious metacognitive and/or cognitive strategies; others saw that they learnt by engaging in work tasks where the goal was not to learn language but to deliver a product of some type (see Lehtonen 2017). This seemed to force them to understand and, through this understanding, to learn.

When describing the second project, I suggested a few curricular underpinnings that bear relevance also in situations other than mine. Regarding students in higher education with proficient English, who, if successful, will be employed in the field of their study, workplace language and communication skills are important. However, because it is difficult to predict what each individual student will need at the point of transfer from university to the first workplace and beyond, the language curriculum ideally takes account of the paradigm of life-long learning. Thus, it is paramount, for example, to hone the ability to learn new skills, to reflect on one's learning, to set goals and keep to deadlines, and to give and receive feedback.

## 5 Conclusion

Approaching the topic of practitioner research from two different angles, this chapter had two guiding questions. One looked into the factors that have encouraged my own practitioner research. I have highlighted my supportive work environment, and the time and support allocated to small research activities in it as crucial factors that have enabled my practitioner research. The other question focused on my research topic and findings. Several findings related to ESP and the workplace, relevant to my local context of teaching, were discussed.

However, my answers have only served as examples of one context and one type of practitioner research. Each context is different, and each practitioner has different issues worth researching (see Belcher 2013 for future of ESP research; Hanks 2015b for an example of EP in an EAP context; Stewart 2017 for research on interdisciplinary team-teaching). To enable practitioner research, the practitioner needs a supportive environment, which promotes the willingness to engage with and in research. Most practitioners need a community as sharing with other practitioners and students facilitates the research process and enriches the research. The gains of this type of community are twofold: the practitioner remains curious about new ideas, is willing to explore and continues to learn, making her a more plausible teacher; the community has knowledge that can be shared further and that may lead to new research interests.

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# Expanding Possibilities for ESP Practitioners Through Interdisciplinary Team Teaching

**Tim Stewart**

**Abstract** This chapter reexamines the recurring question of the place of ESP practitioners within academia. I address this important question through the lens of team teaching. Specifically, I consider how interdisciplinary team teaching might open up the professional landscape for ESP practitioners to new opportunities. After defining interdisciplinary team teaching, I will provide a rationale for its use in EAP. Next, I introduce a specific model known as *Collaborative Interdisciplinary Team Teaching* (CITT). I describe an actual case of interdisciplinary team teaching practice in EAP through the CITT model, together with selected challenges and opportunities it presents to students, teachers, and administrators. The chapter concludes with reflections on how interdisciplinary team teaching might help to raise the status of ESP in the university community at large. Information in the chapter is based on 15 years of experiential and research-based knowledge accumulated through my personal engagement with interdisciplinary team teaching.

**Keywords** Team teaching · Collaboration · Professional status · Respect · English for Academic Purposes · Interdisciplinary interaction · CITT

Collaboration between subject-area specialists and language specialists is essential for the overall success of ESP programs. A large part of that "success" is surely linked to the perceived status of the faculty members engaged in collaboration. This chapter focuses on the central issue of professional identity and marginalization amongst practitioners of English for Specific Purposes (ESP). For ESP practitioners, the degree and quality of contact with subject-area faculty seems crucial for developing a strong sense of professional identity, and the foundation of this is mutual respect. While a number of collaborative arrangements can be found in the

T. Stewart (✉)
Kyoto University, Kyoto, Japan
e-mail: stewart.timothywilliam.3m@kyoto-u.ac.jp



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literature, I will showcase interdisciplinary team teaching as a model of instruction offering unique possibilities to ESP practitioners.

I open with a brief summary of critical descriptions of ESP in the literature. According to Belcher (2004), ESP can be fairly critiqued for: having a narrow preoccupation with survival language; using texts that do not relate to the lives of students well, and; teachers who may not be able to make regular productive use themselves of the specialized language they require their students to learn. Readers of this volume will have heard these shortcomings of the ESP approach to English language teaching before.

Viewed through critical pedagogy, this critique has been interpreted as revealing that ESP is in fact overly pragmatic and positions students as slavish supporters of the failing status quo socioeconomic model (Pennycook 1997). In other words, many ESP teachers accept the idea that the language they teach (i.e., English expressions, structure and technical terminology) is neutral and separate from the political world. Through her investigation Benesch confirmed this view as she demonstrated that ESP has a "discourse of neutrality and consensus" (Benesch 2001, p. 25). This unchallenging political nature is not conspiratorial, however, as the source of this naïve orientation is a deep-seated pragmatism that makes teachers overly eager to respond to the market-determined needs of contemporary students.

For teachers, things are much more complicated than merely discovering and filling student needs. Practitioners of ESP must juggle many complex roles: teacher, course designer, materials developer, and collaborator. On top of this, students who participate in ESP courses have multiple literacy requirements (Hyland 2007). One response to this need for more flexibility in defining roles, learning communities, and learner needs was to suggest a revised definition of English for Academic Purposes (EAP) as "English for academic possibilities" (Cadman 2002). This revisioning of the field is how I frame my chapter. In this chapter, I want to suggest *possibilities* for EAP teachers: first, to respond to the critiques listed above; second, to become more secure in the academy and; third, to raise the professional profile of ESP.

This issue of the low professional profile of ESP practitioners at universities is a long-standing one (see Auerbach 1991; Creese 2002; Hutchinson and Waters 1987; Johns 1997; Robinson 1991). I discuss this issue in detail below, but in sum my argument is that ESP practitioners can gain social capital through team teaching; and this is not a new insight either. My aim in this chapter is to give readers a glimpse at how interdisciplinary team teaching can become a possibility for raising the professional status of ESP teachers. To do this, I will begin by outlining relevant theory and then show how the practice of interdisciplinary team teaching might work. Arkoudis has correctly asserted that the negotiation of goals and practices between language and subject specialists in education "is a very under researched but important area" (Arkoudis 2007, p. 366). I will draw on my 15 years of practicing and researching interdisciplinary team teaching in this chapter in an attempt to shed more light on this important area.

## 1 The Rationale for Co-teaching

ESP course design and implementation require some amount of engagement with discipline areas. As Dudley-Evans and St. John (1998) suggest, the level of engagement varies according to the depth of collaboration with discipline specialists. Their levels of contact range from the language teacher investigating the subject-area in a rather informal type of cooperation, to collaborating with subject teachers more intensively outside of the classroom, and finally to team teaching a course with a discipline specialist (pp. 42–48).

These categories parallel those along the continuum outlined by Brinton et al. (1989) who described the situation in Canada and the United States: starting from traditional language classes, to theme-based language classes, moving through sheltered subject courses, then on to the teaching of linked concurrent language and content courses (adjunct), and ending in regular mainstream classes.

As we know, there are a number of models for ESP instruction described in the literature. This is as it should be in order to meet the particular challenges found in divergent contexts. So while there can be no single fit for all ESP contexts, the rationale for co-teaching seems to boil down to 'authenticity'. Most ESP practitioners enter classrooms with an "outsider status" (Parkinson 2013, p. 157) that means they do not have the necessary depth of content knowledge to instruct students with confidence (Mede et al., "Perceptions of Students, Teachers and Graduates about Civil Aviation Cabin Services ESP Program: An Exploratory Study in Turkey", in this volume). Before a language teacher can develop an effective language learning syllabus for English learners studying subject areas, she needs an understanding of the major concepts of the subject. Without advanced training in a range of subjects, the options left to many ESP practitioners are: (1) fake it, and (2) collaborate with a subject teacher. The complexity of ESP instruction determines that, whenever possible, some form of co-teaching arrangement is advisable.

## 2 Professional Status of ESP Faculty

On university campuses worldwide, ESP instructors are often concerned about their professional status. While Robinson (1991) explained that working conditions, remuneration, and status are concerns of teachers in all fields around the world, the issue of relative status has often been cited in the ESP literature. For instance, Hutchinson and Waters (1987) pointed out that the nature of ESP makes it "a service industry for other specialisms". They also claimed that this service role often "leads to a lowering of status for the [ESP] teacher" (p. 164).

College EAP teachers seem to be particularly concerned about status and conditions (Hutchinson and Waters 1987, p. 82). This point is elaborated by Johns (1997) who believes that literacy faculty members are "marginalized" in many universities because language teaching and literacy are "not matters of intellectual interest in

most academic departments" (p. 73). Johns observes that the persistent result of this situation for these teachers is very low professional status off the tenure track. To overcome this academic segregation, Dudley-Evans and St. John (1998) recommend that language specialists cooperate with subject departments because: "Such contacts with the department and the possibilities for research into disciplinary communication often raise the status of the EAP lecturers in the eyes of subject departments" (p. 42). But the conflicting values of ESP professionals with those held by many discipline specialists can make this cooperation difficult for language teachers (e.g., Creese 2002). Maintaining a focus on language acquisition and teaching over research and subject acquisition puts ESP practitioners at odds with much of the rest of the university community (Johns 1997). In this regard, Lehtonen ("Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use" in this volume) highlights the potential benefits of practitioner research.

My long experience teaching interdisciplinary courses with discipline specialists leads me to conclude that a highly integrated approach to ESP can provide language educators with professional possibilities that they might not otherwise encounter.

## 3 What Is Interdisciplinary Team Teaching?

Interdisciplinary team teaching is at one extreme of the teaching collaboration continuum. It is a fully collaborative model of instruction by teachers with different area specializations. A language teacher and discipline-area teacher plan, teach, and evaluate a course together. The model I am referring to has been labeled *Collaborative Interdisciplinary Team Teaching* (CITT) (Gladman 2015; Stewart et al. 2000).

The CITT model has an unusually high degree of collaboration between discipline-area faculty and ESP instructors. In CITT, both teachers plan the content and language learning objectives, integrate their teaching during the same lesson, and the course is evaluated with half of the points going to language achievement and half to content learning. This model was developed in the 1990s at a small liberal arts university in Japan where nearly all courses are taught in English. I team taught with a number of discipline-area faculty there for 10 years.

The CITT model is similar to the self-contained courses described by Chamberlain (1980), Jackson and Price (1981), Dudley-Evans (1983), and St. John (Dudley-Evans and St. John 1998, pp. 155–156). The students at the Japanese institution where it developed are language majority students studying at an English-medium college. Rather than planning extra tutorials focused on problematic language, language is taught and evaluated within mainstream credit courses alongside discipline content.

Even though the university required language and discipline teachers to co-develop, evaluate, and co-teach EAP courses, CITT was not immediately adopted by interdisciplinary teams. Most teams started out using some variation of the adjunct model described by Brinton et al. (1989). This might have involved the

English teacher observing as the discipline specialist taught and then teaching in a separate time block based on what they observed. A number of variations on this model were implemented. Using some variant of the adjunct model is understandable since few faculty have actually worked on an interdisciplinary course. While we know that the first edition of any course is challenging, co-teaching involves getting to know someone's philosophy of education and teaching style. Once familiarity is achieved and processes become routine, a fully integrated model like CITT can be implemented. But patience, trial and error, and guidance are all necessary to realize that high level of integration.

Since many teams struggled while learning on the job, directed intervention by university administrators was necessary in the early days. I was in a central role since I had the most experience team teaching on the faculty (Stewart 2013, 2016, 2018). As drawbacks of the adjunct model variations became apparent, the topic of language-content integration was a regular agenda item for discussion at faculty meetings. During the start-up period for the new institution, allowing frustrated teachers to share classroom stories and commiserate was necessary as a cathartic exercise. However, administrators needed to initiate movement beyond this outpouring toward positive action. At first, outside experts were invited to present workshops to the faculty. These sessions raised the awareness of many discipline-area faculty members about the need for close integration of language and content instruction.

This positive beginning served as a springboard for more active participation by interdisciplinary teams in professional development forums. For example, during the extensive professional orientation program for new faculty members (see Sagliano et al. 1998), interdisciplinary teams that were using the CITT model with confidence were recruited to demonstrate how they integrated their teaching practice. In addition, any new obstacles to effective team teaching that arose were taken up in workshops for new faculty. Regular in-service workshops were held as well during the academic year in which faculty members presented ideas on course design, lesson planning, and successes in employing active learning.

## 4 Benefits of CITT

The integrated instruction of CITT requires students to use specific skills and language to complete authentic academic tasks. In other words, this approach to ESP places students in real discourse communities. Since Snow et al. (1989) emphasize that learning the registers characterizing different subject areas might be a prerequisite to general academic achievement, the significance of this aspect of CITT is apparent. Language is not taught in isolation and this means that students can apply it to their content learning immediately. In adjunct or other linked ESP courses, it is highly unusual for the language teacher to have a full grasp of the content-area discourse.

Teaching subject courses in interdisciplinary content-language teams ensures that language skills are directly applicable to the demands of specific subjects. Classroom study takes place in discourse communities where skills, tasks, and language are authentic. In CITT, subject material and the language or skill focuses of an exercise are fully integrated. This interdisciplinary team teaching model integrates content and language teaching so that partners can exploit units and single activities for both language learning and instruction in the discipline. In other words, the same or similar materials can be used in such team-taught classes with the real content teaching focus shifting between language and discipline content (see Dudley-Evans and St. John 1998, pp. 11–12).

Out of this sort of "four-handed" approach to language and content integration (Corin 1997), there emerges instruction specifically and accurately focused on genre that is used in particular disciplines. No simulation is required with this type of integrated instruction. As comprehensibility ought to be a central concern of teachers, instruction should be tailored to meet the needs of the student population.

The high degree of integration in CITT is signified by how students earn credit for courses. Course credit is awarded based on a combined grade for language and content learning. The responsibility for assessment and the assignment of grades is divided equally between the ESP and the discipline instructor. This unique feature empowers the ESP practitioner as it distributes the ultimate power of grading equally. Interdisciplinary teaching teams that operate in a seamless manner will create assessment instruments that can be graded for both facility of content knowledge and language.

This unique feature enhances the development of close working relationships. Close collaboration can be rare in teaching since autonomy tends to be highly valued. Having a teaching partner who can act as an informed soundboard for evaluating and developing teaching ideas is a key strength of interdisciplinary team teaching. The intensive relationship creates a highly informed dialogue about teaching. Team teachers who have a positive experience normally talk about how interaction with a colleague increased their creativity and led to their growth as a teacher (Perry and Stewart 2005; Stewart 2018). The unique experience of observing a partner teaching regularly over an extensive period certainly leads to significant reflection on teaching practice.

Two teachers in a classroom can benefit students in several ways. First, with an interdisciplinary team in the classroom, students can get answers to questions about the material (language or content) as they arise. This certainly helps to create an authentic learning environment and, thus, maintain motivation and improve understanding. In other words, CITT encourages spontaneous communication about matters that students perceive as authentic and this affords unique opportunities for language expansion. Second, students can observe authentic exchanges between the two instructors during lessons and get different perspectives on issues, as well as have the opportunity to hear different Englishes and speaking styles. Third, with two teachers students will also be exposed to different teaching styles and techniques, and that can be refreshing. Also, when one teacher is instructing the class, the other can wander around the room and observe students up close as they work.

By using individual observation during lessons effectively, a teaching team can often detect comprehension problems quickly and make necessary adjustments.

Bailey, Dale, and Squire described the benefits of team teaching they experienced in this way: "[W]ithin any given class session, there are a variety of things that two teachers can do better than one of us alone" (1992, p. 167).

## 5 Challenges of CITT

Perry and Stewart (2005) claim that most "ineffective" team teaching partnerships result from a mismatch of personality, experience, and/or collegiality. Teachers who do not accept that roles within working groups and partnerships are fluid (see Lave and Wenger 1991) are likely to become frustrated in CITT.

Areas of friction directly related to teaching are divergent teaching styles, selecting content material, and deciding how to teach it. The reality is that team teaching partners might not discover these tensions until they are well into the process. A drawback here of CITT would be that if things do not go well between the partners (besides the angst of the teachers), students would likely pick this up. Therefore, the integrity of the course could be at stake.

The principles of academic freedom and faculty independence remain strong at many universities. So the highly collaborative nature of interdisciplinary team teaching might be seen by some professors as a threat since it requires rather intimate professional sharing, compromise, and interdependence. This situation can be complicated by the fact that teaching partners might not be familiar with their respective discipline's content, theoretical supports, pedagogical preferences, and assessment methods.

Resolving all of the challenges above requires a significant investment of time. Therefore, work time is often cited as a disadvantage of team teaching. To do interdisciplinary team teaching well, teachers need to have a lot of meetings and an open line of communication. Time involves planning and teaching the course, as well as the time needed to maintain good interpersonal collaborative relations (Perry and Stewart 2005).

For the language specialist, it is important to ensure that students in the interdisciplinary course are aware that they are an equal partner in the course, and that the study of language needs to be taken seriously. For ESP to achieve this status in a discipline course requires the full support of the discipline-area specialist. Related to this matter, teaching partners need to carefully explain their expectations for classroom activities and assignments. Because most teachers are used to teaching and assessing courses individually, they will need to adjust their requirements in the planning process.

Next, I describe the interactive process of planning, teaching, and assessment in an interdisciplinary team-taught course.

## 6 Interdisciplinary Team Teaching in Action

To contextualize this approach to ESP, I will briefly address the areas of course planning, materials, instruction, and faculty interaction. My focus in this section will be on the negotiation of goals and practices between me, the language specialist, and my partner, the subject specialist; an area underrepresented in the ESP literature according to Arkoudis (2007). I co-taught this single EAP course for several years. In this chapter, I want to describe the negotiation between me and my partner during our very first semester teaching together.

The course was called History and Environmental Issues. It was a course for first-year students in a Japanese university that used English as a medium of instruction. There were 10 Japanese students in the first class my partner and I taught. All 10 had just graduated from Japanese high schools. They were interested in studying discipline subjects in English and the mean TOEFL score (IPT) for this group was 450.

The institution had two general requirements for co-teachers in these interdisciplinary courses: both teachers had to be in the classroom during the entire lesson, and final grades had to be evenly calculated for both content mastery and linguistic achievement. Furthermore, the educational philosophy of the university was based on the core idea of active learning. Class sizes were kept small (10–20 students) and teachers were expected to teach using active and cooperative learning strategies (e.g., Johnson et al. 1991; Sutherland and Bonwell 1996).

Obviously, interdisciplinary team teaching is a highly complex undertaking and attempting to provide a comprehensive description of how it might work within a single course is all but impossible. To simplify my illustration of CITT in practice, I will follow the analysis done by Dudley-Evans and St. John (1998) of longstanding team-teaching work in England. The three reasons that Dudley-Evans and St. John give for the success of the collaborative relationships they have analyzed are: clearly defined roles of the two teachers, few demands on the time of subject-area faculty, and "mutual respect between the two teachers and an acceptance of the other's professionalism in his or her area of specialization" (p. 47). I will use these points to illuminate the dynamic of negotiating goals and practices in CITT within a single course.

### *6.1 Planning*

My teaching partner and I had a very open and friendly relationship from the start. At the time, we were both young faculty members embarking on our first full time university teaching positions. I was fortunate since my American partner had lived in Europe and China for a number of years and was proficient in several languages. His language learning experience helped him to appreciate the challenges our students faced learning academic content in English. However, later I would learn that turning this kind of general understanding into student-centred teaching practice is not necessarily a linear process.

From the start of our partnership we had an agreement on our roles and maintained a flexible division of labour. I expected that he would fulfill the role of subject-area expert by selecting appropriate content for the course. I saw my role as working with the content he selected to make it accessible for our students. This included making the academic discourse transparent in order to facilitate their future learning. We enjoyed a productive working relationship. This is the clear advantage of having a reasonably clear division of labour in interdisciplinary team teaching relationships. Of course this advantage can only be realized if Dudley-Evans' and St. John's (1998) point about the need for mutual respect between teaching partners is evident.

## *6.2 Materials*

At the start of our team teaching partnership, we enjoyed a short honeymoon period that not all interdisciplinary teams have. While we were fortunate at the start, our presumed mutual understanding turned out to be quite superficial, and when this became apparent frictions within our professional relationship soon developed.

With an understandable concern for content coverage, my partner wrote up a lecture he wanted to deliver in the first week of classes. He emailed the lecture to me and asked for my input. I was quite taken aback by the title: "The Paleolithic Mind and the Mainstream View of Human History as the Rise of Civilization". Unfortunately, I was equally shocked by the sophisticated content. This placed me in a dilemma. My partner was the discipline-area expert with a freshly minted Ph.D. in environmental history. While he clearly knew the content area, his lecture showed me that all of our previous discussions about our students' potential to learn through English had not been absorbed. His idea of an effective beginning to this course for our Japanese high school graduates was to begin with a highly abstract lecture about unfamiliar content. I had little choice but to tell him that the students lacked sufficient background knowledge of the content area in English (let alone in Japanese) to comprehend this lecture.

This was a point where our "acceptance of the other's professionalism" and "mutual respect" was highly strained. Skeptical of my negative feedback, he asked other ESP colleagues for their opinions. When they concurred with me, he consulted with me further and we came up with a compromise of sorts. Prior to the start of classes a professional development workshop was scheduled and I convinced him to video record the lecture for wider peer review. In the workshop faculty peers were critical of the conceptual and linguistic level of the lecture. Colleagues also pointed out that it did not seem to reflect the underlying pedagogical philosophy of the institution to promote active learning and teaching innovation. The combination of these critical comments and actually listening to himself deliver the lecture was enough for him to realize that it was inappropriate. This episode served to give me more leverage to negotiate meaning about the teaching of the course (see Stewart 2016 for a fuller account).

## 6.3 Instruction

The cognitive and linguistic difficulty of content material, and questions about presentation mode continued to be central in our lesson planning meetings. We met regularly before and after classes and often on other days as well. In addition, we shared a lot of ideas through email exchanges. So contrary to the observation by Dudley-Evans and St. John (1998) that team teaching should not impose much on the time of discipline specialists, to achieve effectiveness in CITT we worked in a highly integrated fashion.

While my teaching partner agreed to lay his initial monologue to rest, he argued convincingly about the need for college learners to listen to lectures and take notes. In our team discussions on this point we negotiated a strategy of using mini-lectures in our course. To start, I asked him to prepare lectures of under 10 min and I provided the students with strategies for listening and notetaking, as well as note organizers (see Chamot 2009). After observing the effectiveness of this practice, my partner extended it. He proposed that he would record the mini-lectures ahead of time on audiotape for students' self study. We agreed that active participation by the students was essential and we had a great luxury that many ESP instructors do not enjoy since we only had 10 students. As an interdisciplinary team, we worked to integrate language and content learning and the development of thinking skills.

The students were required to read authentic academic text. As the language instructor, I stressed the need to limit the amount of text. In addition, I was aware that retention of the material would require the students to revisit and rework concepts, vocabulary, and structures a number of times. So I created various active learning exercises designed to have students engage with the material by reading, writing, speaking and listening.

One activity was an incomplete set of notes of material previously studied in the course. The students were required to recall the missing information, write out the points in full sentences, and finally format the sentences into clear paragraphs. To me, this exercise was a good assessment of their understanding of concepts, as well as the accuracy of their English explanations of the content. When I suggested to my partner that we could use this type of exercise as a form of assessment, he ridiculed it as totally inappropriate. He mocked the idea by labeling it "unacademic" in nature and fervently claimed that university course assessment "had to involve" research papers or essay examinations. By the end of the course, however, he saw definite advantages to having more frequent and shorter in-class assessments of process, content understanding, and facility with English. Here again, my strategy was to lead by example.

## 6.4 Faculty Interaction

In our classroom, the atmosphere was very friendly and relaxed. With 10 first-year students and two teachers we were both actively teaching. Once we began teaching the course, my partner soon realized that he would not be able to cover nearly the

same amount of content as in a similar course in an American university. It seems that the advice I offered early in the planning stage about the need to focus on only a few selected central concepts, reverberated during lessons. That is, rather than aiming for breadth of content coverage (as is normal in introductory courses), I argued for limited content selection that would allow us to teach through depth of knowledge (see Stewart 2001, 2018, for more details). For our English language learners in an EFL setting, the focus on depth of knowledge allowed us to work extensively with a set base of abstract concepts and a range of vocabulary and structures. We were able to control linguistic and cognitive demands through this approach in contrast to the norm which forces ESP practitioners to move quickly across the surface in order to maintain pace with the content instruction.

A transformation occurred once my discipline-area teaching partner accepted this content focus on depth of knowledge over breadth. From that point, we both became more concerned about language learning as the normal pressure to cover the entire introductory textbook was lifted. While I know that my partner was disappointed about the limited amount of content coverage, I also think he felt a sense of liberation. The pace of the course did not have to follow the relentless pattern of one chapter per week, which presumes that students are actually able to absorb it all.

So how did we pace the course? We distanced our instruction from the norm of faithfully following the textbook and focused on the needs of the students. *We* adjusted instruction to *their* pace of learning, rather than dictating the pace in an artificial way predetermined by the syllabus. The small class size certainly helped us to do this, but the institutional commitment to active and cooperative learning principles was instrumental. My teaching partner had just completed his Ph.D. in the United States and he had an engrained understanding of what a university classroom should look like. When he observed me teaching in a very active and reflexive manner and creating my own materials, he was more than a bit shocked. He sometimes openly denigrated active learning pedagogy as teaching "tricks". To him, lecturing in lengthy monologues was 'serious' teaching. However, when I was leading instruction in our classroom, he was able to stand back and observe what the students were capable of. The result was a deeper understanding between us of what our group of students needed. At some point during the first month of classes, we just naturally began teaching the course in a seamless way with an emphasis on language. My partner became more and more adept at planning instruction that would build upon the students' background knowledge and current level of sophistication. In short, we began creating materials and activities that integrated content and language learning, while simultaneously integrating our instruction. We were a teaching team.

## 7 Discussion

This chapter showcases a highly integrated approach to ESP that has been implemented at a small university in Japan in all first- and second-year discipline courses. My own experience teaching through and researching CITT was done in that

particular context so most of my discussion here is based on that experience. However, in contrast to this program-wide innovation initiated by the university administration, I acknowledge that most of the innovations in ESP still likely occur in isolated courses between adventurous colleagues.

## *7.1 Should Institutions Implement CITT?*

The long and the short of it is that if institutions want innovation, administrators have to "spearhead innovation and oversee the implementation of curricular philosophy" (Brinton 1997, p. 340). Having an education philosophy that values both language and content learning in a program is essential for long-term success. Without sustained pressure from the top, it is very difficult to get entrenched faculty members on board with innovation. A primary strategy for implementing any innovation involves attempts to persuade powerful members of the faculty early on. When these 'movers and shakers' move, others follow.

Before administrators reach this stage though, a decision needs to be made about the ultimate value of interdisciplinary team teaching for an institution. Certainly, personnel costs would be an issue of concern, as they always are. Other than possible financial costs are the issues of expertise and mentorship/training. Faculty members need a good deal of orientation about interdisciplinary team teaching and not just a one-off seminar (Sagliano et al. 1998; Stewart et al. 2002). But in order to sell this kind of innovation, administrators need to do a lot of homework as well to learn what interdisciplinary team teaching is. Who is going to orient the faculty, when, and how?

Nunan cut to the heart of the matter when he explained that collaborative teaching requires "appropriate administrative and managerial arrangements [to develop] … in tandem with pedagogical innovation" (Nunan 1992, p. 7). There is no doubt that implementing CITT or a similar co-teaching practice, demands visible support and active involvement by administrators.

The question of how teaching partners are paired looms large in CITT. Shannon and Meath-Lang (1992) recommend, "that administrators should have a hands-off policy where possible in the assignment process and allow collaborators to self-select" (p. 139). I agree that self-selection is the ideal, but when team teaching is done on a program- or institution-wide basis 100 per cent self-selection is not possible. In these situations a confidential ranking system is needed through which *most* teaching teams are assigned based on mutual request.

## *7.2 What Happens in Practice?*

Once an institution decides to implement interdisciplinary team teaching, the classroom becomes the crucible where an educational philosophy of collaboration is realized in practice (see Tajino et al. 2016). This takes a great deal of commitment by teachers and administrative staff.

Genesee (1993), Johns (1997) and others have long advocated for subject-area teachers to take more responsibility for the language learning of their students. The title of Genesee's article – "All Teachers are Second Language Teachers" – sums up this stance. If this attitude does not take hold in an academic community, I doubt that lasting success can be achieved with interdisciplinary team teaching.

In the narrative above describing my experience co-teaching in an interdisciplinary team, there were considerable demands on my partner, despite us ensuring at the start that our team roles were relatively clear. In fact, the narrative illustrates how my historian teaching partner realized the central importance of English in the course. Because we were sensitive to the abilities of our students, exercises and activities increasingly integrated content and language learning aspects. The same blurring of lines occurred in planning and teaching as well over time.

How was this sophisticated level of collaboration achieved? First, interdisciplinary team teaching was an integral part of the curriculum. All members of the faculty were working in at least one interdisciplinary team. Therefore, institutional and collegial support was easily accessible. Second, my teaching partner realized that he needed to adjust his expectations, materials, and approach. This required him to broaden his view of learning beyond the standard of assigning an arbitrary number of chapters by the end of the semester. Basically, he adopted the attitude advocated by Genesee (1993) and Johns (1997) and worked to help our students learn the historical content together with the language associated with it.

This level of commitment means that the second reason for success in ESP team teaching described by Dudley-Evans and St. John (1998) is unreasonable. If an institution is really serious about collaborative teaching, the idea of making "relatively few demands on the time of an individual subject lecturer" (p. 47) becomes self-defeating. Interdisciplinary team teaching by definition makes considerable demands on teachers' time.

Dudley-Evans and St. John (1998) also stated the importance of team teachers having clearly defined roles. Defining roles reduces the possibility of confusion and bruised professional pride. Interdisciplinary team teaching is very complicated to implement so clear communication about who should do what and by when is essential. Having a set of course primer questions (e.g., Stewart 2001) at the initial course planning stage should help to get a teaching team started on a good footing.

After teaching a course for a semester, the partners will know if they want to continue team teaching together. Since team teaching is an intensive professional relationship, partners should be honest about their desire to continue the partnership. Some partnerships simply don't work.

## 8 Concluding Thoughts on Status, Professionalism, and Mutual Respect

ESP as a profession is young and still finding its way. The development of any discipline requires deep ideological and epistemological reflection and debate amongst colleagues in the field. The deeply pragmatic origin of ESP might be holding the field back. ESP faculty members mainly concern themselves with:

> investigating needs, preparing materials, and devising appropriate teaching methodologies. … practitioners have interpreted their role as attempting to provide the maximum possible support in the limited time available. … ESP teachers often find themselves in situations where they have to compete for timetable slots and students' attention. (Dudley-Evans 2001, p. ix)

For university-based teachers, this situation can have serious professional consequences. By giving priority to the expectations of academic and professional disciplines, ESP surrenders its professionalism in the name of efficiency. This tendency toward accommodation might lower the status of language and literacy teachers at universities.

Another possible reason some faculty members in the disciplines do not consider ESP teachers as equal colleagues is the pervasive view that second/foreign language acquisition is straightforward, even simple. According to Johns (1997), many faculty and administrators believe ESP practitioners can easily "fix" linguistic challenges with a toolbox of basic skills. Two serious consequences emerge from this simplistic view: 1) the work of ESP faculty is disparaged as second-rate and, 2) discipline-area faculty fail to recognize their own important responsibility for teaching the language and literacy of their discipline in addition to subject content. To counter such uniformed views, it is necessary to reposition the knowledge of ESP teachers from the periphery of the curriculum so that they can have confidence in the classroom to project "ownership of curriculum-based learning" (Creese 2002, p. 611). Overall, reversing this marginalization process requires educating administrators and subject-area teachers about what ESP practitioners do, how and why.

I see interdisciplinary team teaching as a way of expanding possibilities for ESP practitioners. Successful team teaching collaborations lead to collegial familiarity and understanding, which in turn lead to mutual respect and greater institutional status. To achieve this, leadership from the top is essential, including extensive and flexible support. Personality and experience are important elements for success, but so are shared values. An institution needs to make it clear that language education is important and is the responsibility of *all* teachers. This is a crucial point since "ESP's tendency to work *for* rather than *with* subject specialists," has been lamented a number of times (Hamp-Lyons 2011, p. 95; Hyland and Hamp-Lyons 2002). Ending this pattern would appear to be essential for the future development of ESP.

What I have discovered from the many successful team teaching partnerships I have had is that English language educators have to lead. Pedagogy is not often a preoccupation of professors in the disciplines. In situations where two teachers are in the same classroom, engaging examples of practice will make a positive

impression which opens the possibility of discussions about teaching that can expand beyond the classroom and raise the profile of ESP in the academy.

*Tim Stewart is an associate professor of TESOL at Kyoto University. He is the series editor of the six-volume practitioner research series* TESOL Voices *published by TESOL Press.*

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# Perceptions of Students, Teachers and Graduates About Civil Aviation Cabin Services ESP Program: An Exploratory Study in Turkey

**Enisa Mede, Nergis Koparan, and Derin Atay**

**Abstract** English for Specific Purposes (ESP) is a movement based on the proposition that language teaching should be tailored to the specific learning and language needs of particular groups of students. In Turkey, the growth of English is striking as it is cultivating students' English proficiency along with their English competence in specific areas to meet their future needs is given great importance. However, research done for ESP has been limited so far. The present study, therefore, aims to investigate the perceptions of Turkish ESP students, teachers and graduates regarding the English course designed for Aviation Cabin Crew Members. The data were collected by means of semi-structured interviews and analyzed through pattern coding. The results revealed similar perceptions including the three groups of participants' expectations, experiences, challenges and respective solutions about the development of the existing ESP course which will serve as a reference in designing similar programs to facilitate learning English for specific disciplines.

**Keywords** Aviation · Cabin crew · Language needs · Learning needs · Course evaluation · ESP

## 1 Introduction

English for Specific Purposes (ESP) is a movement based on the proposition that language teaching should be tailored to the specific learning and language use needs of identified groups of students (Johns and Price-Machado 2001). The objectives

E. Mede (✉) · D. Atay
Bahceşehir University, Istanbul, Turkey
e-mail: enisa.mede@es.bau.edu.tr; derinatay@es.bau.edu.tr

N. Koparan
Fatih Sultan Mehmet University, Istanbul, Turkey
e-mail: nkoparan@fsm.edu.tr



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and content of ESP courses are defined to meet specific needs of the learners (Hutchinson and Waters 1987). In Turkey, the growth of English is gaining importance emphasizing the English competence of the students to meet their identified needs. To achieve this purpose some state and private universities offer English for Specific Purposes (ESP) courses in the sophomore year.

Nevertheless, while recent research has mostly focused on English language teaching (ELT), little has been done for ESP. There have been few studies done on the teacher's role in ESP (Bracaj 2014; Ghafournia and Sabet 2014; Górska-Poręcka 2013), the challenges of teaching and learning ESP (Ahmed 2014; Saliu 2013), teachers' beliefs, attitudes and instructional practices in an ESP in-service teacher training program (Chostelidou et al. 2009; Rajabi et al. 2011; Savas 2009) and students' perceptions, needs and attitudes towards ESP (Arslan and Akbarov 2012; Martinović and Poljaković 2010).

The present study, therefore, aims to investigate the perceptions of Turkish ESP teachers, students and graduates by exploring their expectations, experiences, challenges as well as respective solutions about the existing program. Data collected from semi-structured interviews will shed a light on the experiences and challenges of Turkish teachers of English language and Turkish Civil Aviation Cabin Services students about an ESP course.

## 2 Literature Review

The globalized use of English requires speakers to be able to use special registers and expressions to meet situational needs (Chen 2014). In the workplaces all over the world, area-specific language competence is increasingly recognized as a marker of professional expertise, and references to specific language abilities are often seen in the professional competency statements of several professions. One of the effects of the growing importance of global English in professional contexts has been the rise of English for Specific Purposes (ESP) teaching at all levels. ESP courses, such as English for Business and Economics, English for Science and Technology, English for Social Sciences and English for Aviation, are conducted to promote students' competence in English language in their own field of specialization, enhance their employability, and increase their opportunities for professional mobility (Belcher 2006; Marginson and McBurnie 2004).

Widdowson (1983) maintains that ESP focuses on training rather than education; it is intended to be used in specific vocational contexts, with the selection of appropriate content to develop English competence. According to Hyland (2002) "the use of systematic means to define the specific sets of skills, texts, linguistic forms, and communicative practices that a particular group of learners must acquire is central to ESP" (p. 392). In a similar fashion, Zhang (2011) states that a pedagogic approach to Business English includes the teaching of the strategic communication system in international business where participants follow business conventions and procedures,

and benefit from lexico-grammatical resources of English in addition to visual and audio semiotic resources to achieve their communicative goals.

Besides, regarding the language needs of graduates at workplace, Lehtonen (see chapter "Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use" in this volume) highlights the need to learn vocabulary and specific work-related genres. In his study, one of the major challenges about ESP was related to the reports gathered from the students focusing on learning specific law-related vocabulary as wells as their emphasis on *learning* ESP. While some students learnt using conscious metacognitive and/or cognitive strategies; others got more engaged in work tasks where the goal was not to learn language but to deliver a product.

With its focus on language in specific contexts, it is no surprise that genre has become a central concept within ESP research and pedagogy; analysing genres has helped researchers, teachers and learners go beyond intuitive understanding of the language for specific purposes (Swales 1990). As stated by Yayli and Canagarajah (see chapter "The Processes Behind RA Introduction Writing Among Turkish Arts and Science Scholars" in this volume), the concept of genre occupies an important place in language education. In their study, the two researchers concluded that the written texts of expert scholars should not only be examined but the time and effort to listen to their construction stories should be spent as well.

Furthermore, studies on teacher and student views on the ESP programs are few in number. Dovey (2006) argues that teachers are expected to address students' needs as part of ensuring the transferability of ESP training to the workplace. Yet, one of the most distinctive features of most ESP contexts is that the teachers often have to deal with areas of knowledge with which they are not completely familiar. In other words, they struggle to master language and subject matter beyond the bounds of their previous experience. Hutchinson and Waters (1987, p. 158) describe ESP teachers as "reluctant dwellers in a strange and uncharted land". According to Belcher (2006) for many ESP teachers this "land" is highly intimidating. Wu and Badger (2009) in a recent study with three teachers of maritime English in a college of China found that these ESP teachers responded to unpredicted situations in class where their subject knowledge was limited by using avoidance or risk taking. There is a general agreement in the literature that the ESP teacher requires additional training (Akermark 1983) in handling the materials related to the students' field and extra effort and more experience than a teacher of General English.

In addition, Stewart believes that we need a fair amount of engagement with discipline areas so as to design an ESP course and implement it (see chapter "Expanding Possibilities for ESP Practitioners Through Interdisciplinary Team Teaching" in this volume). As the ESP practitioners have no advanced training, faking it or collaborating with a subject teacher are the options left. In other words, an arrangement for co-teaching is advised to minimize the complexity of ESP instruction (Stewart 2017). Similarly, Johns (1997) stated that teachers would benefit from collaborating with subject experts who can provide insights into the chosen topics or assist in the selection of texts and tasks.

Considering the ESP programs from teachers' and students' viewpoints, a study conducted by (Atay et al. 2010) attempted to find out the Turkish EFL students' and instructors' opinions about the engineering ESP program provided at a state university. To deal with content-based problems, all ESP teachers mentioned careful preparation before teaching, and reported using specific strategies while teaching, such as avoiding to answer students' engineering related questions unless they are certain, explicitly stating that their engineering related knowledge is limited, and consulting students in class for an answer or explanation. Students in general were satisfied with their textbook and the way their teachers carried out teaching and evaluation, and they preferred to have ESP courses throughout their engineering education.

Tsao et al. (2008) collected data from 354 students and 23 instructors in a selected technological university in Taiwan about their opinions and attitudes toward ESP course and ESP-related issues. The instrument used for the survey was a self-made questionnaire based on literature review. The results of this study revealed that students in general favoured ESP more than English for general purposes while teachers, in contrast, were more reserved about the idea of replacing general English education with ESP. Although both faculty and students recognized the importance of ESP, neither considered students' English proficiency up to the level needed to cope with the ESP course requirements. The two parties alike agreed that students needed to have a satisfactory grounding in Basic English skills before they advanced to ESP learning and that ESP instructors should possess English-teaching competency and subject content knowledge.

In another study conducted by Chiung-Wen (2014), the experiences of six teachers were explored regarding ESP instruction. Specifically, the study attempted to get a better understanding of disclosing and managing teaching challenges and dilemmas which ESP teachers perceived besides the nature of the required professional knowledge. Data was collected through in-depth interviews, one of which was a background interview with each teacher at the beginning of the semester. A semi-structured follow-up interview was carried out at the end of the semester. The findings revealed that the ESP teachers faced many problems and suggested a number of strategies as effective solutions such as examining teacher education programs to bridge the gaps between ESP instruction and classroom practices, mentoring beginning teachers and going into the conflicts of ESP teaching in pre-service education along potential resolutions.

A parallel study was carried out by Masoomeh and Naghmeh (2015) analyzing the teachers' perceptions and practices of ESP instruction. A total of 20 teachers who were selected through convenience sampling from different English institutes participated in the study. A questionnaire with open-ended and close-ended questions developed by Alsolami (2014) was administered to the participating teachers. The encountered problems and the strategies were described. As a result, factors such as lack of field knowledge, lack of suitable training, lack of course materials and ESP resources were mentioned as challenges. Many teachers also indicated that an ESP teacher should collaborate with subject specialists and have a special training in this field (Estaji and Nazari 2015).

Based on these overviews, it is clear that the aim of teaching ESP is to develop the linguistic and professional skills of learners as well as their knowledge and competence in the relevant field. In order to determine and refine the content for the ESP course necessary language and skills should be identified (Basturkmen 2010; Dudley-Evans and St. John 1998) and the task of the curriculum designer is to mirror as accurately as possible the language, tasks and contexts of the target language situation. The present study, therefore, aims to evaluate an ESP program, namely Aviation English program, through collecting data from not only from teachers and students but also from graduates who are already employed. By doing so and by focusing on an area which has not been explored much so far, the study aims to contribute to current literature.

## *2.1 Aviation English*

Aviation English is one of the subdivisions of ESP in which common language features and professionally regulated standards interact to define a restricted variety designated for use in routine aviation related contexts. The term encompasses a wide variety of language use situations; including the language of airline mechanize flight attendants and ground service personnel as well as more specialized communication between pilots and air traffic controllers (Farris et al. 2008).

Based on data from several accident reporting database, the International Civil Aviation Organization (ICAO) has identified controllers and pilots inadequate L2 proficiency as a major challenge to effective controller- pilot communication (ICAO 2004, p. 1–1). As part of its role in promoting the safe and orderly development of international civil aviation throughout the world, ICAO recommended the use of radiotelephony phraseology (known as RTF) to be used in communications between pilots and air traffic controllers in order to reduce the risk that a message will be misunderstood. ICAO introduced language proficiency requirements in the international aviation context in English, an L2 for many of the world's controllers and pilots. In non-routine situations and particularly emergencies that are not covered by the standard phraseology, pilots and ATC are expected to use "plain language" to tell the nature of the problem and work out how it can be resolved.

Since the 1970s, Aviation English has also encompassed the language of airport ground staff, cabin crew, passenger service agents, management and civil aviation authority staff and this led to the emergence of many ESP books such as *Ground English* (Hall 1976), *In-flight services* (Akiyama 1976) and *Airspeak: Radiotelephony communication for pilots* (Robertson 1987). Since 2008 the ICAO has required pilots and traffic controllers to take a test to prove their operational level four competence in English and this has brought about a new spate of books *Aviation English for ICAO compliance* (Emery and Roberts 2008).

The research base for Aviation English is still in its infancy. A small number of studies have reported on the design of Aviation English teaching materials. Bishop-Petty and Engel (2001) contacted air force personnel to identify potential topics.

Based on the topics suggested by the aviation personnel e.g. air turbulence, aerodynamics, formation flying and spatial disorientation, the researchers collected a wide range of reference sources for each topic to be used in ESP programs. Sullivan and Girginer (2002) investigated the language used by pilots and air traffic controllers. The study was conducted for an ESP program in a Civil Aviation School in Turkey and data included tape-recorded communication between pilots and air traffic controllers, and questionnaires and interviews with Turkish pilots and air traffic controllers. Information about how language was used was then used to inform the development of instructional materials Wang (2007) described the development of an Aviation English curriculum in China, focusing particularly on phonetic and semantic contrasts to teach students key pronunciation and vocabulary aspects of Aviation English.

Finally, although the testing of AE has attracted the attention of some researchers (Teasdale 1996); in the last years the focus has shifted to the new ICAO proficiency guidelines and to the design and validation of AE testing (Alderson 2009; Read and Knoch 2009).

## 3 Aviation in Turkey

In conjunction with the rapid growth of the country, and the deregulations in the aviation industry, Turkish civil aviation has shown a remarkable growth during the last decade. With the new investments in progress, both the aviation and the airport industries are expected to grow with an ever increasing pace in the upcoming decade. 49 airports are open to civil aviation and there is a huge market for the aviation industry in Turkey. The number of aircraft increased from 162 in 2003 to 489 in 2015 and the number of employees from 65,000 to 195,000 in 2014. Passenger traffic in Turkey has increased by 10.9% which is much higher than both the World average of 5.9% and Europe average of 5.7%.

When the origin and development of Civil Aviation sector in Turkey is considered, Government Airline Enterprise established by the government in 1933, currently named as Turkish Airlines (THY), succeeded to be the only company of Turkey to maintain air commerce until 1990. The company which started running with 5 aircrafts in 1933 gained its current name 'Turkish Airlines' in 1955. Having risen capital year by year, Turkish Airlines triggered the establishment of private airlines. Almost in 2000s since it was getting more and more difficult to meet the increasing demands, the country became privatized in all areas of aviation, and took necessary actions (Karatay et al. 2015).

Thus, the industry for both public and private airline companies requires pilots, air traffic controllers, cabin attendants, crew members, engineers and service staff to be able to use English. A good command of English, therefore, will enable them to communicate as with their counterparts in the world and serve their customers better on work related issues.

## *3.1 Methodology*

### 3.1.1 Setting

This qualitative case study was conducted in Civil Aviation Cabin Services Program of a private university in Istanbul, Turkey. This program lasting for 2 years requires university entrance exam for the enrolment and accepts around 100–120 students every year. The primary purpose of the program is to prepare students for domestic and international flights and enable them to reach B2 level English knowledge. Students are provided with practical education of the departmental courses in a mock-up classroom equipped with an aircraft model, galley, toilet, passenger seats, overhead lockers and seatbelts. The graduates of the program get jobs in airlines and become flight attendants/stewards.

Civil Aviation Cabin Services Program comprises of four academic terms in total. In the first term of Civil Aviation Cabin Services Program, students take departmental courses, e.g., Organization and Responsibilities at Aviation Companies, Aviation Terminology, Introduction to Civil Aviation, and Courtesy and Protocol Rules along with compulsory Turkish language and History of Turkish Republic courses. In the spring term of the freshman year, they have to take Basic safety rules, Basic Aeroplane Instruction, and Communication Skills as compulsory courses. In the third term of the program, they are responsible for five more compulsory courses. These are Medical Issues and First Aid, Basic Service Codes in Cabin, Emergency Safety Rules, Elocution and Announcement, Communication and Passenger Affairs. In the fourth term, aviation students take the courses of Crew Resource Management, Basic Airport and Flight Security, Hazardous Material Instruction, World Cultures, Interview Techniques and Personal Development. All of these courses, given in Turkish, aim at providing students with theoretical knowledge and practical skills.

There is no English preparatory program of the university for aviation students. The absence of English preparatory program necessitates more exposure to English in the freshman and sophomore years. Thus, freshman students take a 10 h-English course at the freshmen year. In the second year of the program, students have to take Aviation English course; the course is taught by four different ESP teachers 8 h a week. The ESP teachers all became volunteers to be appointed to this program while they were teaching at a preparatory school. Volunteer teachers participated in a 3 week-training held by Education Centre of Turkish Airlines. In this training, they were all guided on what English level is expected from flight attendant applicants and the sort of mistakes that can be tolerated. They also took guidance about the textbook to be used for Aviation English course. The ESP textbook called English for Cabin Crew (Gerighty and David 2011) is used. This textbook was selected in cooperation with Education Centre of Turkish Airlines.

As for assessment, the program students involved in the present study are supposed to take a mid-term exam for English course a couple of weeks after a quiz which is previously given. The quiz and mid-term exam show similarities in terms of the content, particularly in that they both include one reading part with open-ended,

true-false, headings-matching and sometimes multiple choice questions, one listening part generally with two different recordings, vocabulary part which is of filling in the blanks with the words or phrases in the box, matching words with their definitions, and completing the missing letters of a word or phrase. In addition to the parts above, grammar can be said to have the priority in bringing points to the aviation students because it covers 30–40% of the whole mid-term exam. Within the process between mid-term and final exam, they are supposed to submit one reading and one speaking project with a proportion of 10% each. At the end of the semester, they take a final test in which they are asked only multiple choice questions but still in all parts such as reading, listening, vocabulary and grammar. According to the goals and the objectives of this ESP program, writing skill is regarded as the least important for aviation students when compared to the other language skills.

In Aviation English course students are taught English which is commonly used within the cabin of an aircraft. They learn about aviation terminology belonging to cabin and vocabulary knowledge to be necessary for communication with foreign passengers particularly during serving food & drink or meeting these passengers' needs. Finally, they need to know how to make announcements in English and how to give instructions to be followed by foreign passengers during take-off and landing.

## *3.2 Participants*

The present study was carried out with 50 aviation students, 3 English teachers and 6 graduates of the Civil Aviation Cabin Services Program. The age range of the currents students is between 17 and 23 years old. They are all second year learners and competent about the use of basic structures in English language since they were already taught elementary and pre-intermediate level English when they were in their first year.

Besides, out of 6 graduates who participated in the study, three have been working for Turkish Airlines as cabin crew. They are females with an age range between 19 and 22 years old.

As for the 3 participating teachers of Aviation English, teacher 1 is female at the age of 25. She had started her career teaching English at culture and tourism vocational school for a year. After she had taught general English for 3 years at a preparatory school, she was appointed to Civil Aviation Cabin Services Program of Vocational School. Now she has been teaching ESP in this program for 3 months. Teacher 2 is again a female and she is 28 years old. She has 6 years of teaching experience. Her first 3 years of teaching were the at a preparatory school and for the last 3 years, she has been teaching both Aviation and General English at Civil Aviation Cabin Services Program. Finally, the last participant of this study (teacher 3) is a 25 year old female teacher. She has been teaching English for 2 years. She started teaching at preparatory school and after a year she continued her career at

Civil Aviation Cabin Services Program. Currently, she is teaching Aviation English and General English at the same time.

## 4 Data Collection Instruments and Procedure

A qualitative case study was used as a research design in this study to find out the perceptions of the English teachers, current students and graduates about the English course designed for Aviation Cabin Crew Members. The three groups of participants were selected from a single program at the university where the research was conducted. Data were gathered over the course of approximately 2 months by means of semi-structured interviews including open-ended questions (see Appendices A, B and C).

To begin with, the Aviation students were asked about their expectations from the course followed by their overall evaluation of the teachers and materials used in the course. Then, they were requested to briefly share their ideas about their course involvement and competencies in Aviation English. Finally, they were asked to state the challenges they experience as well as provide solutions for the improvement of the existing program.

Furthermore, the ESP teachers were proposed parallel questions. First, they were asked to comment on their competencies and roles as ESP teachers in the Aviation course. Next, they expressed their feelings about teaching Aviation English as well as differentiated between teaching ESP and general English. Finally, the they shared their challenges and suggested respective solutions about the program.

Finally, the graduate students were asked whether the Aviation program has met their needs regarding their career as cabin crew members. They also stated how competent they feel using Aviation English as well as how active they use Aviation English in their career.

### *4.1 Data Analysis*

In this qualitative study, data gathered from the semi-structured interviews was analysed through pattern coding (Miles and Huberman 1994). First of all, answers for open-ended questions were categorized into similar groups. Then, these categories were put into coding process and main themes determined by participants were listed. As for the next step, voice records of interviews were converted into transcripts as text data. After reading the texts, the same process of open-ended questions was repeated and the main themes were conceptualized and lastly, given a code. Once the codes were identified, they were compared and contrasted as well as grouped under specific labels. Finally, the categories were compared to one another and the related “themes” were introduced.

After the data analysis of the interviews and observations, a deeper analysis took place while writing up the manuscript. The two researchers associated the main themes with the research questions with an attempt to sought answers and evidence from the data. The repeating ideas created the main themes giving way to theoretical constructs. To identify the degree of interrater reliability, two experts in the field of qualitative data analysis identified the themes from the codes. It emerged that the raters achieved .83 close agreements on the general themes apart from the verbalizations of similar concepts.

## *4.2 Results*

The purpose of the present study was to investigate the experiences of Turkish ESP students, teachers and graduates by exploring their experiences along with the difficulties they face within the existing program designed for Turkish Civil Aviation Cabin Services. The following part reports the findings obtained from the semi-structured interviews which were conducted to the ESP teachers, existing students and graduates of the Civil Aviation Cabin Services Program.

## *4.3 Perceptions of Students About Aviation English*

To begin with, when the students were asked about their expectations from the existing program, all of them explicitly stated that they would like to be fluent and accurate while talking to the passengers during the flight. Specifically, they would like to learn phrases and words related to aviation as illustrated in the following three excerpts:

> […] I would like to learn how to express myself clearly while talking to the passengers during the flight. (Student 1, 23rd Nov., 2016, Semi-structured interview)

> […] I think we need to learn specific words and phrases about aviation to be able to talk to the passengers during the flight. (Student 2, 23rd Nov., 2016, Semi-structured interview)

> […] I expect to learn more about Aviation English. I would like to learn specific words about Aviation, understand the passengers and help during the flight. (Student 3, 23rd Nov., 2016, Semi-structured interview)

In addition, the participating students said that the Aviation program should focus both on theory and practice. In other words, they should not just learn the specific terms about Aviation but also receive interaction on how to use them in context. Considering this point, two of the students said:

> […] In the program, we should both learn the aviation terms as well as how to use them while talking to the passengers and/or other crew members at the international airport. (Student 4, 23rd Nov., 2016, Semi-structured interview)

> […] The Aviation English should provide us with the specific terms related to our future career as well as engage us in practice where we can use the language effectively. (Student 5, 23rd Nov., 2016, Semi-structured interview)

Furthermore, the students were asked to assess the ESP teachers and materials used in the Aviation English course. Their responses showed that the students were positive about their teachers as they were quite experienced and competent about teaching aviation English as illustrated in these samples:

> […] Our teachers are very experienced about Aviation English. They teach us the specific terms and help us to improve our English about cabin services. (Student 5, 23rd Nov., 2016, Semi-structured interview)

> […] We learn a lot from our teachers. They are experienced and try their best to help us improve our English in Aviation. (Student 6, 23rd Nov., 2016, Semi-structured interview)

However, the ESP students were not very happy with the materials used in the existing program. They said that rather than handouts, more interactive activities such as role plays should be integrated in the course which would provide them with the opportunity to use the language in the Aviation context as shown below:

> […] In the course, teachers generally give us handouts. We need more practice where we can use Aviation English. I think role play is a good idea! (Student 7, 23rd Nov., 2016, Semi-structured interview)

> […] We fill in the handouts in the course. We need more interaction where we can actively use Aviation English. (Student 7, 23rd Nov., 2016, Semi-structured interview)

Besides, the participating students were asked about their involvement in self-assessment. More specifically, they were requested to make comments whether they were involved in any self-assessment and if they did, how this process worked. As shown in these excerpts, the Aviation students generally prepared word cards and tried to guess their meaning or take online quizzes to assess their language development:

> […] I love learning vocabulary about aviation. I prepare small word cards and try to guess their meaning. (Student 8, 23rd Nov., 2016, Semi-structured interview)

> […] I try to practice English at home. I find some online quizzes and try to solve them to improve my English. (Student 9, 23rd Nov., 2016, Semi-structured interview)

The participating students were also asked how competent they felt about Aviation English. The gathered answers revealed that the students were not much competent in Aviation vocabulary and needed more practice where they can use these specific terms in related contexts. Considering this issue, three of the students said:

> […] I am weak at aviation vocabulary. Although I try to memorize these words, I still don't know how to use them. I think we need learn about how to use these words in context. (Student 10, 23rd Nov., 2016, Semi-structured interview)

> […] In my opinion, vocabulary is very important for our future career. We need to learn words about cabin crew services and also use them in context. (Student 10, 23rd Nov., 2016, Semi-structured interview).

> […] After the course, I try to memorize the new words. However, I cannot use them in a sentence or dialogue. We need more practice about using these specific terms in context. (Student 11, 23rd Nov., 2016, Semi-structured interview)

Regarding the challenges they experience in the program and what respective solutions can be suggested for the improvement of the program. Majority of the students said that they would like some visitors from the cabin crew services to come to their classes and share their experiences as displayed in the following excerpts:

> […] I think, I would be a good idea if cabin crew members visit our classes and share their experiences. (Student 11, 23rd Nov., 2016, Semi-structured interview)

> […] Apart from the books and handouts, it would be a good idea to bring some visitors such as pilots or flight attendants to our classes and we can listen to their real life experiences. (Student 12, 23rd Nov., 2016, Semi-structured interview)

Finally, additional to the suggestion about the visiting hours with cabin crew members, some of the students stated that they should be more engaged in roles plays and debates as shown below:

> […] We can do role plays and practice the language of cabin crew members together. (Student 13, 23rd Nov., 2016, Semi-structured interview)

> […] It would be a good idea to do debates about different aviation topics. We can discuss what is appropriate to say when and why as a group. (Student 14, 23rd Nov., 2016, Semi-structured interview)

## *4.4 Perceptions of Teachers About Aviation English*

Apart from the aviation students, the three ESP teachers were asked to share their opinions about the program. First, when asked about their competencies and roles as ESP teachers, they said that one of their primary goals is provide students with the language they need for aviation and provide them with a classroom atmosphere where they could feel comfortable with the target language as illustrated in the following comment:

> […] I try to create a positive classroom environment where students can learn about aviation English and feel comfortable while using the target language. (Teacher 1, 23rd Nov., 2016, Semi-structured interview)

In addition, the participating teachers were asked how prepared they feel to teach aviation English as well as in what ways they learn to teach the content. All three teachers said that they spend some time for preparation at home before they come to the class. They search for specific terminology and expressions as well as try to

provide students with various examples on the given topic. Considering this issue, two of the teachers said:

> […] Before each lesson, I try to prepare at home looking for some specific terms and expressions from the Internet. I try to give students as many examples as possible related to the topic. (Teacher 2, 23rd Nov., 2016, Semi-structured interview)

> […] I prepare for the lesson every day. I look for the specific terms on the Internet and write down many examples to share with students during the class. (Teacher 3, 23rd Nov., 2016, Semi-structured interview)

Furthermore, the aviation teachers were asked in what ways they think that teaching general English is different from aviation English. All participants stated that teaching ESP is more related to teaching specific vocabulary rather than focusing on grammar. They also said that teaching ESP has a specific focus which is related to meeting the needs of the students. In the Aviation course, teachers try to help students improve their Aviation English and use it effectively once they become cabin crew members. The following excerpts justify these findings:

> […] I think that teaching ESP is more related to teaching specific vocabulary. We try to teach terms about Aviation rather than focusing only on grammar. (Teacher 1, 23rd Nov., 2016, Semi-structured interview)

> […] In the ESP course, we try to meet the needs of our students. They need to learn about Aviation English once they graduate and become cabin crew members. That's why, we have a specific focus. (Teacher 2, 23rd Nov., 2016, Semi-structured interview)

Furthermore, the ESP teachers were asked about the challenges they experience in the program as well as what respective solutions they can suggest for the improvement of the exiting program.

As for the challenges, teachers emphasized the extra time they spend to prepare before they teach the class. They also complained about the lack of motivation and students' unwillingness to participate in the course. Considering these challenges, the teachers said:

> […] I need to spend much time preparing for the course at home. I try to find as many examples as possible before teaching the new subject to my students. (Teacher 3, 23rd Nov., 2016, Semi-structured interview)

> […] Most of the students are demotivated. They feel bored easily and refuse to participate in the lesson (Teacher 1, 23rd Nov., 2016, Semi-structured interview)

Finally, for the solutions to these problems, the participating teachers made a couple of suggestions. They believed that extracurricular activities such as field trips and engaging students in more practice such as role plays and debates would make the program more interesting as well as increase the motivation and participation of the students.

> […] I think that we can add some field trips. This will be more interesting and motivating for our students. (Teacher 2, 23rd Nov., 2016, Semi-structured interview)

> […] We definitely need more practice rather than just theory in our courses. If we engage our students in role plays and debates, they will be willing to participate and have more fun. (Teacher 3, 23rd Nov., 2016, Semi-structured interview)

### *4.5 Perceptions of Graduates About Aviation English*

As the last participating group in this study, 6 graduate students were asked whether the Aviation program has met their needs, how active they use Aviation English and how competent they feel using Aviation English in their career.

First, the graduates said that the program has met their needs not only in raising their awareness on specific terms and expressions about Aviation, but also helped them to use Aviation English with the cabin crew members and passengers during the flight as illustrated below:

> […] The program did not just help me to learn terms and expressions about aviation, but also helped me to actively use the language while talking to the cabin crew members and flight passengers. (Graduate student 1, 27th Nov., 2016, Semi-structured interview)

> […] In this program, I have learned how to use the Aviation terms and expression effectively. I can use them actively while talking to the cabin crew members and flight passengers. (Graduate student 2, 27th Nov., 2016, Semi-structured interview)

Finally, the graduate Aviation students stated that after they had completed the program, they feel competent using the language both in their daily lives as well as in their career. Considering this issue, two of the graduates said:

> […] After I had completed the program, I feel confident using Aviation English in m every day communication as well as during the flights. (Graduate student 3, 27th Nov., 2016, Semi-structured interview)

> […] As a graduate of this program, I feel competent while talking to the cabin crew members, passengers and daily conversations (Graduate student 4, 27th Nov., 2016, Semi-structured interview)

## 5 Discussion

The aim of this study was to evaluate the Aviation English program based on the perceptions of the current students, teachers and graduates. The data collected from the interviews revealed that all three participating groups had similar perceptions including their expectations, experiences, challenges and respective solutions about the development of the existing ESP course.

To begin with, students stated that they expected the program to emphasize both theory and practices. They said that they need to be fluent and accurate enough in Aviation English so that they can use the language effectively both in their career

and everyday life. As Zhang (2011) suggests, the teaching of the strategic communication system is a pedagogic approach to ESP which requires participants to follow conventions and procedures in the relevant field benefit from lexico-grammatical resources of English so that they can achieve their communicative goals. The participating students also believed that their teachers were competent and experienced in Aviation English, yet they felt they needed to be engaged more in activities such as role plays and debates which would provide them with the opportunity to use specific terms and expressions about Aviation more effectively.

In addition, the Aviation students tried to practice English on their own preparing word cards, guessing their meaning as well as taking online courses. This shows the importance of self-assessment in the Aviation English program. Finally, the students asked for class visits to be made by cabin crew members which would help them to hear different experiences and learn more about Aviation.

Besides, the teachers of the Aviation English program stated that they tried to create a positive learning environment where students can feel comfortable while learning and using the target language. They spend extra time at home preparing for the course searching for specific samples on the related topic. In this way, they try to meet the needs of the students which are different from general English as they have to learn specific terms and expressions about Aviation rather than just grammar. Many felt they needed more collaboration with subject specialists and maybe have a special training in this field (Estaji and Nazari 2015). Teachers also believed that students could enjoy the courses some extracurricular activities as well as more interactive activities are integrated in the program.

Finally, the graduates of Aviation English stated that the program helped them improve their knowledge on specific terms and expressions as well as their speaking skills. They said that they could actively use the language both in their daily lives and their career.

Based on these findings, it is clear that students studying in such programs (e.g. Aviation English) have specific language needs that need to be closely addressed. Therefore, as suggested by Dovey (2006), these needs should be taken into consideration while designing the program focusing on the student motivation and active involvement. In other words, such program should be student-centred and should draw on the learners' professional engagement with the subject matter of the course (Hyland 2002). The long-term involvement of students with their specialized domain as well as their hopes to work in specific fields, will give ESP programs a clear instrumental value and will serve basis for the development of new program.

## 6 Conclusion

So far a good deal of research has investigated the perceptions of ESP students or teachers regarding the English course designed for Aviation Context. However, this research has been too limited to provide considerable information about the experiences of Turkish ESP teachers, existing students and graduates of Civil Aviation

Cabin Services Program by exploring their experiences as well as the challenges they faced within the program. The inquiry into purpose has been crucial to us. In this paper, we have discussed what participants find the hardest and what they suggest as a solution about Aviation English Course. The conduction of the research in only one setting and the administration of the semi-structured interviews to very few ESP teachers and graduates are the limitations of our study.

We hope that this study will help, in the future, ESP teachers get a clear understanding of their students' expectations and needs in an Aviation English course; and how to tackle the difficulties they face via a number of suggestions. In this regard, to provide required professional knowledge for ESP teachers, pre-service or in-service teacher education programs to be designed in accordance with the findings obtained from our study would be supporting. The analyses could also be guidance to prospective doctorate studies on Aviation Vocational Schools. It is supposed that it would assist similar institutions and programs with Aviation English course to develop requirements-driven materials and to enhance their curriculum within the related program so that more graduates of Civil Aviation Cabin Services Programs worldwide can be fully employed.

## Appendices

### *Appendix A. Student Semi-structured Interviews*

(a) What are the expectations of the students about the Aviation English program?
(b) How do the students evaluate the ESP teachers and materials used in the Aviation English course?
(c) Are they involved in any self-assessment? If yes, how? If not, why?
(d) Do you feel yourselves competent in Aviation English? If yes, if what aspects? If not, why?
(e) What are the challenges they experience in the program? What respective solutions can be suggested?

### *Appendix B. Teacher Student Semi-structured Interviews*

(a) How do the teachers evaluate their competencies and roles as ESP teachers in the Aviation English program?
(b) How prepared do the teachers feel to teach Aviation English? In what ways do they learn to teach the content?
(c) In what aspects do the teachers think general English and Aviation English differ from one another?
(d) What are the challenges they experience in the program? What respective solutions can be suggested?

## *Appendix C. Graduate Student Semi-structured Interviews*

(a) Has the Aviation English course met your needs? If yes, in what aspects? If no, why?
(b) How active do you use Aviation English? In what contexts do you use it? Briefly explain.
(c) How competent do you feel using Aviation English? Briefly explain.

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# Part III
# Curricular Issues in ESP

# Introducing Innovation into an ESP Program: Aviation English for Cadets

**Mustafa Er and Yasemin Kırkgöz**

**Abstract** The aim of English for Specific Teaching (ESP) in Turkish universities is to support the development of scientific literacy in learners' field of specialism in English. Implicit in this objective is to make the ESP curriculum tailor-made to meet the learners' specific needs. In this study, we describe evaluating the new Turkish Air Force Academy (TurAFA) curriculum, which has been in use for some time. TurAFA is unique in that it aims to train cadets to become combat pilots leading Turkish Air Force. After contextualizing our research, we provide an evaluation of an innovative "Aviation English for Cadets" (AEC) curriculum which has beendesigned to fulfill cadets' individual and institutional needs. AEC is based on a comprehensive needs analysis involving all stakeholders including the graduates, field experts, instructors and cadets. The most innovative aspect of the curriculum is the introduction of virtual aviation, a challenging innovation in the curriculum for cadets. We illustrate the course content with a simulated flight snapshot. Finally, we discuss the curriculum evaluation in relation to its professional relevance, use of technology, and challenges encountered in the curriculum development process. The study illustrates a localized practice; yet, we believe that it has implications for EAP/ESP practitioners and researchers globally.

**Keywords** Aviation English · Curriculum development and evaluation · Higher education

M. Er (✉)
Department of Foreign Languages, İstanbul Kültür University, Istanbul, Turkey
e-mail: m.er@iku.edu.tr

Y. Kırkgöz
English Language Teaching, Faculty of Education, Çukurova University, Sarıçam, Adana, Turkey
e-mail: ykirkgoz@cu.edu.tr



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## 1 Introduction

Aviation industry is growing at an enormous rate and highly sophisticated set of technologies are employed for achieving safety in aircraft operations. Though enormous efforts have been made to improve aircraft technologies, maintenance facilities, airports, and navigation aids, the industry still suffers from the aviation safety problems in other words tragic air accidents. One of the underlying problems leading to this problem is miscommunication. Communication problems, especially between pilots and air-traffic controllers, have a crucial role in the number of fatal air accidents (Kanki and Palmer 1993). These problems are even more severe for non-native English-speaking pilots and non-native English speaking controllers, since they have the highest probability of miscommunication and misunderstanding interacting with each other (Said 2011).

Communication in aircraft operations basically depends on English and the specialized subset of English related broadly to aviation is called Aviation English. Aviation English means more than technical phraseology and it is used for radiotelephony communications for a safe flight. So, in order to ensure aviation safety this particular subset of English needs to be mastered by all aviation industry professionals including pilots, co-pilots, flight attendants, air traffic controllers, mechanics, engineers, flight dispatchers and the ground staff including managers and officials within the aviation industry.

Like business English, aviation English is a subdivision of ESP and it is a kind of codified language basically made up of a list of structures that pilots and air traffic controllers have to use in the exact same way every time. These structures are to be efficient, clear, concise and unambiguous. Though pilots and air traffic controllers can operate on the basis of this standard phraseology, in case of emergencies and unexpected situations the English language proficiency is needed to rescue the crew and the aircraft. Majority of pilots and controllers state that "good communication is as important as technical proficiency for the safety of flight" (Wulle and Zerr 1997: 91). In other words, Air Traffic Communication (ATC), providing pilots with vital information about weather, airport and air traffic, leads pilots at the right altitudes, speeds and on routes and it plays crucial roles in operating aircraft safely. Krifka et al. (2003:1) states that in the last two decades the major cause of aircraft accidents has been miscommunication between the pilots and air traffic controllers. Furthermore, an Airbus study revealed the fact that, incorrect or incomplete pilot/controller communications brought about 80% of airplane incidents or accidents (FOBN 2004).

Through ATC communication pilots also give their flight information to the controllers, which, in turn ensures the current air traffic flow smoothly and safely. Since every international flight is a multi-cultural experience (Merritt and Ratwatte 1997:664), ATC communication takes place in multi-lingual environments and it requires a common language. Aviators interpret the content of communication on the basis of their cultures and, Schultz (2002) stated communication approaches of cultures affect aircraft accident rates. English is the *lingua franca* of aviation and

the nature of aviation English is depicted by Sullivan and Girginer's (2002:400) study. They analyzed ATC communications at a Turkish airport and in ninehours they observed 278 pilots communicating with the controllers. Those pilots were from 28 different countries and only two of them were from countries where English is the native language. So, for a pilot with inadequate English language i.e. aviation English proficiency it is impossible to attend an international flight.

## 2 Turkish Air Force Academy

Turkish Air Force Academy (TurAFA) was founded as a military academy on October 1, 1951 with a mission; to educate, train, and inspire the cadets in becoming motivated officers who will aspire to become combat pilots leading Turkish Air Force. As an institute of higher education, TurAFA offers not only a regular undergraduate education but also a 4-year military training composed of physical education classes and flight training activities. TurAFA offers undergraduate education in four academic majors i.e. aviation and aerospace engineering, electronics engineering, industrial engineering, and computer engineering. At graduation, each cadet earns a Bachelor degree and a commission as a second lieutenant in the Turkish Air Force.

TurAFA cadets graduate as combat pilot candidates, and unlike any other university graduates they all have pre-arranged career fields with clear-cut definitions. Right after graduation cadets are to attend Çiğli Air Basein Turkey to get their Flight Training and those students failing to earn pilot license are required to serve in Turkish Air Force as Ground Officers. As prospective North Atlantic Treaty Organization (NATO) officers, all TurAFA graduates are bound with NATO standards and procedures pertaining to flight training. Being part of multi-national task forces in many parts of the globe, TurAFA graduates are also expected to fulfill language requirements depicted in STANAG 6001[1]. The language proficiency level expected from the cadets includes both the receptive and productive skills. In other words the cadets as the future officers of Turkish Air Force are expected to use the English language effectively not only in written and spoken contexts, but also in written and spoken encounters.

Although the medium of instruction is not English in the academy, English language education is given special attention and language classes have a vital share −32 credit hours- in the curriculum. TurAFA accepts high school graduates at the

[1] A STANAG, or Standardization Agreement, is an international military standard created by the North Atlantic Treaty Organization (NATO) for regulating equipment, procedures, tactics, training and just about everything that affects how armed forces from different countries work together on operations and exercises.

STANAG 6001 is a language proficiency scale designed to allow comparisons of language ability in different countries. The scale consists of a set of descriptors with proficiency skills broken down into six levels, coded 1 through 6. (http://www.campaignmilitaryenglish.com/Course/teacher.htm)

ages of 17–19. Though since the beginning of the 1950s, English has been a mandatory subject at the secondary level (Kırkgöz 2007), stemming from the content that was taught, the materials used, the number of hours of instruction, and issues with teacher quality, large numbers of learners still have difficulty in achieving an adequate level of language proficiency (Çelik et al. 2017: p. 3). This leads to heterogeneity in English language proficiency levels among the cadet candidates. So, TurAFA English Language Teaching (ELT)program starts with a placement test which is carried out right before the freshman year. Based on the placement test results cadets are divided into five groups as beginner, pre-intermediate, intermediate, advanced and upper-advanced and given instruction accordingly.

## 3 ESP Instruction in TurAFA

Keeping in mind the facts that the main means of communication in NATO headquarters and among the elements of multinational task forces is English and English language education programs need to be modified in accordance with the needs of the particular student groups, the aim of TurAFA foreign language education and testing is set not only to prepare the cadets for academic settings but also to prepare them for military i.e. aviation workplace environments where English is the lingua franca. The dominant position of English in specific communication contexts has contributed to the growth of the field of English for Academic/Specific Purposes (Ferguson 2007). So, taking these facts into consideration, ESP[2] is integrated into the TurAFA ELT curriculum design. As Adamson and Adamson (2017: p.19) states language use serves not only to achieve language comprehension but it also helps learners to acquire the content syllabus. In the same way, TurAFA ESP instruction aims at enabling the cadets functioning in a real world in which they are supposed to do real things and understand the real world problems via speaking a language that is not their native language.

In order to keep the course aligned with the learners' needs, ESP curriculum renewal periodically is invaluable (Jackson 2005). Curriculum design and construction of new courses are supposed to take the learners' present knowledge, their limitations, the number of instructional hours, program outcome expectations and the background of the teachers into consideration. Hence, ESP curriculum design entails proper application of needs analysis which is the cornerstone of ESP (Dudley-Evans and St John 1998:121); thus, the role of needs analysis in any ESP curriculum should not be underestimated (Hamp-Lyons 2001). The needs analysis in an ESP curriculum design process is based on two sources: data acquired via student opinion surveys and teacher interviews (Mačianskienė and Bijeikienė 2017: p. 11).

[2] English for Specific Purposes (ESP) addresses the communicative needs and practices of particular professional or occupational groups (Hyland 2007, 391).

Taking all these into consideration, TurAFA launched a new ELT Curriculum for the cadets in the beginning of 2007–2008 academic years. The new program aiming at developing the four skills of the language i.e. listening, speaking, reading and writing has been designed in accordance with a comprehensive needs analysis carried out by collecting data from the graduates, field experts, instructors and cadets. The new curriculum mainly consists of two stages. In the first phase of the program, the cadets are expected to master the four skills of General English at advanced level. Following this stage, cadets are presented with an authentic ESP curriculum prepared by the Foreign Languages Department of TurAFA. The initial phase of the program lasts at least for two semesters and duration of this phase varies in accordance with the entry proficiency levels of cadets. For instance, for military high school and Anatolian high school graduates whose entry proficiency level of English is at least high-intermediate, this initial phase lasts two semesters. Upon the completion of the first phase of the program, cadets take ESP courses given via the above mentioned authentic course materials written to fulfill their individual and institutional needs. The ESP courses are offered to Common European Framework of Reference (CEFR) B2 level students and those courses are designed to teach students not only a range of vocabulary items and grammar structures to communicate in a number of professionally relevant situations, but also they are designed to teach students to communicate in a broad variety of professionally relevant situations.

The program is to be covered in six semesters through which a separate book is studied. The ESP books are all content-based course books and they are written by the Academy's English language instructors. The topics of each of the six books are decided by the program designers in cooperation with the Academy' teachers of English and the Turkish Air Force officers who are the subject matter experts in those specific contents. The course books are named as Turkish Air Force (TurAF), North Atlantic Treaty Organization (NATO), Current Issues in Turkish Foreign Affairs (CITFA), Academic English with Engineering Texts (AEET), Air Forces of the Allied Countries (AFACs), and Aviation English for Cadets (AEC) with respect to the timeline they are studied. So, the cadets are supposed to take *Aviation English for Cadets* course right before graduation. Though the scope and content of the whole ESP program is briefly introduced as follows, the focal point of this study will be *Aviation English for Cadets* course which aims at reinforcing the cadets' -the future aviators- professional knowledge through participating in real-world tasks. TurAFA ELT Curriculum is presented in Fig. 1.

TurAFA ESP curriculum design has been conducted in a way that the design meets both the institutional and individual needs of the learners. In order to meet those needs of learners and the institution; firstly, the needs of both the learners and the institution have been identified; secondly, an ESP program has been developed; then the course syllabus has been designed accordingly; and finally authentic materials have been developed. The program is designed for catering the needs thoroughly and it is intended to achieve effective and efficient English language teaching emphasizing the usage of reading, writing, listening, and speaking skills in various professional situations. So, course materials and exercises are selected to be correct and authentic with regard to the information they present on the military and aviation based topics.

| YEAR | SEMESTER | C/H | LEVEL | | | | |
|---|---|---|---|---|---|---|---|
| | | | BEGINNER | PRE-INTERMEDIATE | INTERMEDIATE | ADVANCED | UPPER ADVANCED |
| 1 | 1 | 20 | General English | General English | General English | General English | General English |
| | 2 | 12 | General English | General English | General English | General English | General English |
| 2 | 1 | 4 | General English | General English | General English | Turkish Air Force (TuAF) | Turkish Air Force (TuAF) |
| | 2 | 4 | General English | General English | General English | NATO | NATO |
| 3 | 1 | 3 | General English | General English | General English | Current Issues in Turkish Foreign Affairs (CITFA) | Current Issues in Turkish Foreign Affairs (CITFA) |
| | 2 | 3 | General English | General English | Turkish Air Force (TuAF) | Academic English with Engineering Texts (AEET) | Academic English with Engineering Texts (AEET) |
| 4 | 1 | 3 | General English | Turkish Air Force (TuAF) | NATO | Air Forces of the Allied Countries (AFACs) | Air Forces of the Allied Countries (AFACs) |
| | 2 | 3 | Turkish Air Force (TuAF) | NATO | Current Issues in Turkish Foreign Affairs (CITFA) | Aviation English for Cadets (AEC) | Aviation English for Cadets (AEC) |

COLOR CODE
1st Phase: North Star course books
2nd Phase: Authentic CBI books

**Fig. 1** TurAFA ELT curriculum

The content of the course books are as follows:

## *3.1 Turkish Air Force (TuAF) Book*

This is the first book of the TurAFA ESP series and it includes basic information about Turkish Air Force. In the first unit, the students are presented with information about oneday of an F-16 pilot on a jet base and how a fighter pilot is trained and educated in Ciğli Flight School. Second unit is about history of Turkish Air Force. The other units include issues and topics regarding ranks, Turkish Acrobatic Team namely Turkish Stars, main units of Turkish Air Force, Turkish Armed Forces, Turkish War Colleges, air ground branches and issues pertaining to the future of Turkish Air Force.

## *3.2 NATO Book*

This is the second book of the TurAFA ESP series and it informs the cadets about NATO as an organization. Cadets learn how NATO works and what the underlying reasons of its foundation are. Timeline of NATO, peace keeping forces of NATO and the role of NATO today are the contents of the course book. There are also units concerning NATO's interventions and missions in history. Projections about the future of NATO are found in the last unit of the book.

### *3.3 Current Issues in Turkish Foreign Affairs (CITFA) Book*

This is the third book of the TurAFA ESP series and it is prepared to teach current hot topics of Turkish foreign affairs to cadets. The first unit of the book is about agreements and treaties of the Republic of Turkey in history. The following unit includes Armenian and Turkish Allegations concerning 1915 events. Water dispute between Turkey and Greece, European Union (EU)and relationships between Turkey-EU, energy issues and water crisis in the Middle East are also discussed in CITFA units.

### *3.4 Academic English with Engineering Texts (AEET) Book*

This is the fourth book of the TurAFA ESP series and it aims at giving some background information about general engineering topics to cadets. Some of the units and their contents are as follows:supercomputers unit is related to computer engineering, aircraft elements and unmanned aerial vehicles unit is related to aerospace engineering, modeling-simulation and operations research unit is connected to industrial engineering and electronic warfare unit is concerned with electronics engineering.

### *3.5 Air Forces of Allied Countries (AFACs) Book*

Turkey is an ally of lots of countries and there are many possibilities for officers to come across personnel from allied countries. Also, commanding Turkish Air Force requires knowledge in numerous military areas. So, cadets are supposed to know general and important information about ally countries of Turkey. This book presents basic introductory information about Pakistan Air Force (PAF), Republic of South Korea Air Force (ROKAF), Royal Canadian Air Force (RCAF), Hellenic Air Force (HAF), Royal Air Force (RAF), and United States Air Force (USAF).

### *3.6 Aviation English for Cadets (AEC) Book*

“Aviation English for Cadets” book is in the curriculum in order to teach aviation terminology regarding places, aircraft and flight. Furthermore, facilities of a base, meteorology, ground services, runway numbering systems, runway remarks, principles of flights, types of aircraft, modern military aircraft, radiotelephony communications, ICAO alphabets and numbers, the language of air traffic control (ATC) and an en route analysis are the issues covered in this course book.

Generally speaking, the contents of the TurAFA curriculum course books are real and they coverprogressing issues. Some writing parts are comprised by pilots or other air force personnel from various ground branches. The realistic curriculum and course books with real life content increase the interest of air cadets in English courses. After the completion of these books, an air cadet can express himself/herself easily and properly. Being equipped with international issues makes an officer much more qualified as well. All the objective vocabulary of the course books are the ones which are used most-frequently in aviation area, and which they are going to use in the future when needed. Many topics of the course books related to aviation and aircraft are the issues which every air force officer should know. By the end of eight-term English language curriculum, air cadets graduate from Turkish Air Force Academy as well-qualified, equipped and capable warfare officers who have no problem in communication in English language.

## 4 Aviation English for Cadets (AEC) Course

Among the state and private foundation universities, Air Force Academy is unique in that through an engineering program it provides its cadets with an ESP course in order to prepare them for Flight Training to which they are supposed to attend for earning their pilot licenses. Since the language for aviation is English all over the world, TurAFA cadets who are to pursue a career in aviation will need to be able to speak and understand the English language to NATO standards. In order to fulfill this institutional need, TurAFA developed a course called “Aviation English for Cadets”. Cadets of TurAFA acquire their aviation knowledge via the *Aviation English for Cadets* course.> This book provides students with a basic, core aviation English vocabulary for exploring the world of aviation, and it allows them to develop their written and spoken communication skills in a context simulated with real world tasks. The major themes of the book are airport environment, aircraft elements and flight as an ongoing process.

Aviation English for Cadets has 4 modules and focuses on key language concepts, aviation vocabulary and the oral skills necessary to accomplish tasks both on the ground and in the air required for a safe flight. Designing the modules and creating the content of the book, authors of the book were consulted by two of TurAFA active fighter pilots. The chief author of the book is not only a senior instructor but also is pretty much interested in virtual aviation.It started as a hobby for his leisure activities in 2004 and today he still keeps track of the developments in the world of virtual aviation. The book Aviation English for Cadets was printed in 2011 and it has been in use since then. The course and its book *Aviation English for Cadets* is a challenging innovation in TurAFA curriculum both for cadets and instructors.

The cadets attending this course are required to have STANAG 6001 proficiency levels of 4 3 4 3 i.e. level 4 in Listening, level 3 in Speaking, level 4 in Reading and level 3 in Writing. On the other hand, TurAFA instructors of English are supposed


**Fig. 2** Front cover and the content pages

to get through a tough in-service-training period in order to be authorized to teach aviation English.

Since classroom activities is essential in designing a curriculum, TurAFA ESP curriculum designers paid special attention to the development of the curriculum materials and organization of class activities.

*Aviation English for Cadets* course not only covers areas such as airport elements, aircraft structures and systems, standard phraseology and terminology, principles of flight and flight operations but also the course presents class activities aligned with the needs and backgrounds of the learners.

The content of *Aviation English for Cadets* modules are as follows (Fig. 2):

*Module 1: Place*
An Air Force Base, basic runway markings, meteorology, key words.
*Module 2: Plane*
Aircraft elements, principles of flight, flight basics, types of aircraft, modern military aircraft.
*Module 3: Flight*
The Language of Air Traffic Control (ATC), the ICAO Alphabet and Numbers, Radio communications, Chicago Convention.
*Module 4: An En Route Analysis*
Clearance delivery, startup and pushback with taxi request, taxi to the active runway, takeoff clearance and takeoff, climb to the cruising altitude, en route between waypoints, descent and approach, final approach and touchdown, taxi request and taxi to the terminal, avionics and engine cutoff.

Aviation English for Cadets is a compulsory three credit hour course for cadets. It is offered in the last semester of the academy right before the graduation and Çiğli Flight School where all TurAFA graduates are supposed to fly training aircrafts using English language as a means of communication. Aviation English for Cadets is actually a preliminary course to flight training and its modules are designed in such a way that cadets are presented tasks in an order from simple to complex. After


**Fig. 3** A simulated flight snapshot

reviewing basic aviation knowledge pertaining to principles of flight, meteorology, radio communications etc., in the final module the book presents a complete enroute analysis which creates an opportunity for the cadets to practice their theoretical knowledge. The book is accompanied by a DVD for putting the theory in practice and a simulated flight snapshot is presented in Fig. 3.

The final module entails a simulated flight from İstanbul Atatürk Airport to İzmir Adnan Menderes Airport through the following steps: clearance delivery, taxi request, taxi to the active runway, takeoff clearance and takeoff, climb to the cruising altitude, en route between waypoints, descent and approach, final approach and touchdown, taxi request and taxi to the terminal, avionics and engine cutoff (Fig. 4).

This simulated flight is accompanied by role play activities during which cadets pretend to be the pilot and tower, try to solve given problems under the supervision of the instructor. In Figs. 5 and 6 two of these are given as sample cases.

Enabling the cadets to practice the theory presented in the course book, TurAFA Aviation English for Cadets course is quite an opportunity for pilot candidate senior cadets for getting prepared for Çiğli Flight School.

Learner evaluation is also an important element of ESP curriculum design. So, in addition to traditional achievement tests in the form of midterm and final exams, TurAFA ESP curriculum designers planned skill based means of evaluation to ensure that the cadets attain the proposed language proficiency levels. Thus, every single cadet is supposed to take four-session midterm and final exams. Those sessions are reading, writing, listening and speaking skills evaluation sessions and each of them make 25% of the final grade. Learner progress is measured with portfolios


**Fig. 4** Steps followed during the simulated flight

and observations in given cases and for the sake of ensuring objectivity, assessments are done using checklists.

The scope of the evaluation activities in TurAFA aviation course includes especially the "speaking and listening ability" of the cadets in various aviation contexts. The ultimate goal of the program is to enable cadets to reach Stanag 6001 Level 3 which refers to the "professional" level of language proficiency. Cadets reaching this level in listening comprehension skill are adequate to follow radio broadcasts, speech conversations between two educated native speakers in the standard language and though they may miss the details and regional or dialectic forms, they can interpret general meaning correctly. Furthermore, cadets reaching this level in speaking comprehension skill are rarely impaired by hesitations, their flow of speech is maintained by circumlocution when necessary and there is no groping for words. Since lack of adherence to ICAO standards is a major cause of confusion and misunderstandings amongst pilots (Moder 2013), the target language proficiency levels of cadets are also specified in accordance with the Standards for The

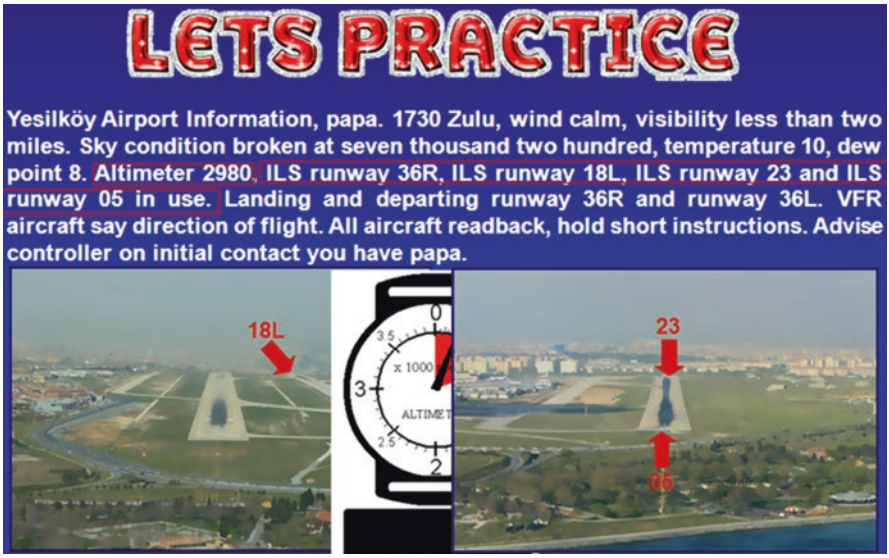


**Fig. 5** A sample case for role play activity

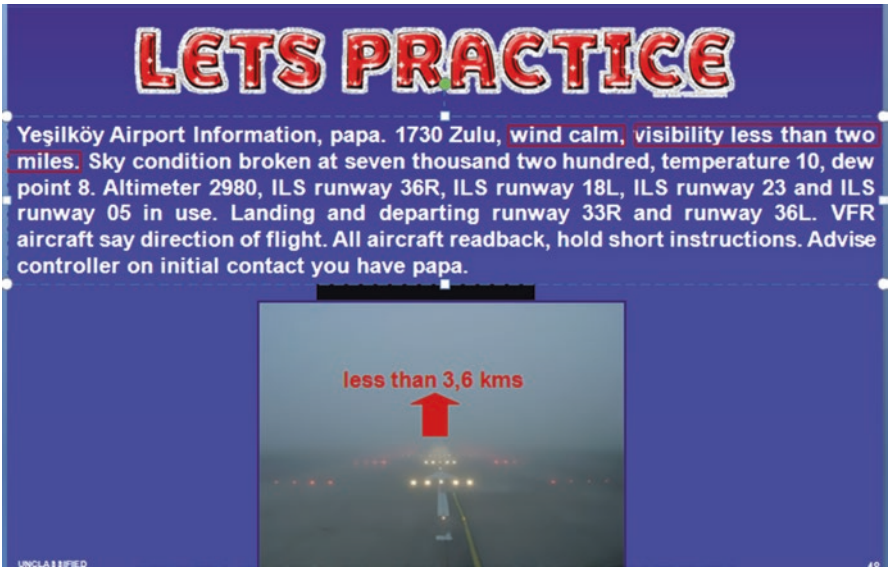


**Fig. 6** A sample case for role play activity

International Civil Aviation Organization (ICAO) Rating Scale for Operational Level 4 and CEFR Level B2.[3]

[3] TurAFA cadets' language proficiency levels are measured in accordance with STANAG 6001 standards. Though translating Stanag6001 standards into CEFR is not that easy, Bureau for International Language Co-ordination (BILC) which is a NATO agency proposed a tentative rela-

## 5 Evaluation of theProgram

In order to find out the relevance of the training, six of the graduate pilots and five of the course instructors were interviewed. Though the program was launched in 2007–2008 academic year, since aviation curriculum was placed in the final stage of the program cadets are exposed to Aviation English beginning from 2011 Spring Semester. Since only the cadets with CEFR B2 level language proficiency were admitted to take this course and the number of those cadets was only about 40 and almost half of those cadets were able to get pilot license, the number of participants for this qualitative research is not so few. Participants of the study were all male, and the pilots' average age was 36.3 and their average number of flight hours was 1416. As far as the instructors concerned, their average age was 32.2 and average number of teaching years was 8.8. So, both the pilots and the instructors were experienced enough to contribute to the study. Interview was in the participants' native tongue i.e. in Turkish in order to ensure the clarity of the statements and for the same purpose the interview was done face to face. Interview was composed of 12 items and all questions were pertaining to the relationship between the content of TurAFA Aviation English curriculum and Turkish Air Force (TurAF) flight training program. The interview questions and the responses are presented in Tables 1 and 2.

**Item 1.** *The content of TurAFA Aviation English curriculum increases aviation motivation of the pilot candidate cadets.*

As seen in Tables 1 and 2, both the graduate pilots and the instructors think that the content of TurAFA Aviation English curriculum has positive effects on the cadets' aviation motivation. While 83,3% of the pilot participants agreed with the statement, 16,7% of the pilots strongly agreed with the statement. So, we can conclude that all the pilot participants believe that TurAFA Aviation English curriculum increases aviation motivation of the pilot candidate cadets. Instructors responded to the item in a very similar way and while 60% of the instructors agreed with the statement, 20% of the instructors strongly agreed with the statement. Thus, 80% of the instructors believe that TurAFA Aviation English curriculum increases aviation motivation of the cadets.

**Item 2.** *The ESP program's supplementary audio visual materials enrich cadets' learning experiences.*

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tion of two scales as follows; A1 (CEFR scale) –> 0 or 1 (mostly 1) (Stanag6001 scale), A2 –> 1, 1+ or 2 (mostly 1), B1 –> 1+ or 2 (mostly 2), B2 –>2, 2+ or 3 (mostly 2), C1–>2, 2+ or 3 (mostly 3) *Source:* http://www.natobilc.org/documents/Conferences /2010/MONDAY/A%20Tale%20of%20Two%20Tests%20STANAG%20and%20CEFR.ppt Furthermore, STANAG 6001Language Proficiency. Level 3 is found as equal to CEFR B2 level (Tannenbaum and Baron 2010)

**Table 1** The graduate pilots' responses

| ITEM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Strongly disagree | | | | | | | | | | |
| Disagree | | | | | | | | | | |
| Don't know | | | | | | 16,6% | 33,4% | 16,6% | 16,6% | |
| Agree | 83,3% | 50,0% | 33,4% | 33,4% | 33,4% | 33,4% | 50,0% | 33,4% | 33,4% | 33,4% |
| Strongly agree | 16,7% | 50,0% | 66,6% | 66,6% | 66,6% | 50,0% | 16,6% | 50,0% | 50,0% | 66,6% |
| Agree+Str. Agree | 100,0% | 100,0% | 100% | 100% | 100% | 83,4% | 66,6% | 83,4% | 83,4% | 100,0% |

**Table 2** TurAFA English language instructors' responses

| ITEM | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| Strongly disagree | | | | | | | | | | |
| Disagree | | | | | | | 20% | | 20% | |
| Don't know | 20% | 20% | 20% | | 20% | 40% | 40% | | 60% | 40% |
| Agree | 60% | 80% | 80% | | 40% | 40% | 20% | 40% | 20% | 20% |
| Strongly agree | 20% | | | 100% | 40% | 20% | 20% | 60% | | 40% |
| Agree+Str. Agree | 80% | 80% | 80% | 100% | 80% | 60% | 40% | 100% | 20% | 60% |

Both the graduate pilots and instructors believe that TurAFA ESP program's supplementary audio visual materials enrich cadets' learning experiences. While 50% of the pilot participants agreed with the statement, 50% of the pilots strongly agreed with the statement. So, we can conclude that 100% the pilot participants think that TurAFA Aviation English curriculum's supplementary audio visual materials have positive effects on enriching the cadets' learning experiences. Instructors responded the item in a slightly different way and while 80% of the instructors agreed with the statement, 20% of the instructors stated that they are not sure about the given statement. Thus, 80% of the instructors believe that TurAFA Aviation English supplementary audio visual materials have positive effects on enriching the cadets' learning experiences.

**Item 3.** *TurAFA Aviation English curriculum has positive effects on cadets' flight training activities.*

Majority of the pilot participants (66,6%) strongly believe that TurAFA Aviation English curriculum has positive effects on cadets' flight training activities and 33,4% of those pilots agreed with the statement. So, we can conclude that all the pilot participants think that TurAFA Aviation English curriculum has positive effects on cadets' flight training activities. As far as the instructors concerned, while 80% of the instructors agreed with the statement, 20% of the instructors stated that they are not sure about the given statement.

**Item 4.** *TurAFA English Language Teaching program having Aviation English curriculum as a basic component is beneficial for the cadets.*

Both the graduate pilots and instructors believe that TurAFA English Language Teaching program with ESP component is beneficial for the cadets.> As seen in Tables 1 and 2, all of the instructors and 66,6% of the graduate pilots strongly agreed with the statement.

**Item 5.** *TurAFA Aviation English curriculum fulfills the institutional language needs of Turkish Air Force.*

Majority of the pilot participants (66,6%) strongly believe that TurAFA Aviation English curriculum fulfills the institutional language needs of Turkish Air Force and 33,4% of those pilots agreed with the statement. As far as the instructors concerned,

while 80% of the instructors either agreed or strongly agreed with the statement, 20% of the instructors stated that they are not sure about the given statement.

**Item 6.** *The content of TurAFA Aviation English curriculum is applicable to the workplace environments of the cadets.*

Both the graduate pilots and instructors think that TurAFA Aviation English curriculum is applicable to the workplace environments of the cadets. Majority of the pilot participants (83,4%) either agreed or strongly agreed with the statement and, as far as the instructors concerned, while 60% of the instructors either agreed or strongly agreed with the statement, 40% of the instructors stated that they are not sure about the given statement.

**Item 7.** *The number of units in "Aviation English for Cadets" course book is directly proportional to the time allotted for the course.*

This item is one of the two items about which there is a discrepancy in the pilots' and instructors' opinions. While 83,4% of the pilot participants either agreed or strongly agreed with the statement, only 40% of the instructors either agreed or strongly agreed with the statement and 20% of them disagreed with the statement.

**Item 8.** *The order of units in "Aviation English for Cadets" course book is suitable for the cadets.*

Both the graduate pilots and instructors believe that the order of units in "Aviation English for Cadets" course book is suitable for the cadets. Majority of the pilot participants (83,4%) either agreed or strongly agreed with the statement and, as far as the instructors concerned, 100% of the instructors either agreed or strongly agreed with the statement. So, we can conclude that instructors all believe that the order of units in "Aviation English for Cadets" course book is suitable for the cadets.

**Item 9.** *The units in "Aviation English for Cadets" course book is attractive for the cadets.*

This item is one of the two items about which there is a discrepancy in the pilots' and instructors' opinions. While 66,6% of the pilot participants either agreed or strongly agreed with the statement, only 20% of the instructors agreed with the statement, 20% of them disagreed with the statement and 60% of them stated that they are not sure about the given statement.

**Item 10.** *TurAFA Aviation English curriculum fulfills the individual language needs of the cadets.*

Majority of the pilot participants (66,6%) strongly believe that TurAFA Aviation English curriculum fulfills the individual language needs of the cadets and 33,4% of those pilots agreed with the statement. So, we can conclude that all the pilot participants think that TurAFA Aviation English curriculum has positive effects on fulfilling the cadets' individual language needs. As far as the instructors concerned, while 60% of the instructors either agreed or strongly agreed with the statement, 40% of the instructors stated that they are not sure about the given statement.

**Item 11.** Which parts of the *"Aviation English for Cadets"* course book are the most beneficial for the cadets?

Both the graduate pilots and instructors believe that Module 3 and Module 4 are the most beneficial parts of the book. Participants of the interview especially emphasized the value of Module 4 presenting an en route analysis via a simulated flight from İstanbul Atatürk Airport to İzmir Adnan Menderes Airport through following all the necessary steps for a safe flight. They also stated that the simulated flight accompanied by role play activities during which cadets are forced to solve given problems under the supervision of the instructor provides cadets with real world experience.

**Item 12.** Further comments…

Further comments on TurAFA Aviation English curriculum are as follows.

> The final module -enroute analysis- had better include a simulated flight modeling Çiğli Flight School flight patterns and flight codes.
>
> The aircraft chosen for the simulated flight had better be T-41 aircraft which is the flight training aircraft for all cadets during their Air Force Academy education. Furthermore Module 3 had better incorporate T-41 aircraft ATC communications.
>
> This aviation curriculum forms a basis for Çiğli Flight School flight training.
>
> This aviation curriculum can positively affect cadets' aviation perception and increase their aviation safety awareness.

To sum up, all graduate pilots positively commented on the curriculum. Pilot participants of the study believe that the curriculum increases aviation motivation of the pilot candidate cadets and its supplementary audio visual materials have positive effects on enriching the cadets' learning experiences. Furthermore, all the graduate pilots believe that TurAFA ELT program with ESP component is beneficial for the cadets and they think that the aviation English curriculum has positive effects on cadets' flight training activities. Majority of the graduate pilots think that the curriculum is applicable to the workplace environments of the cadets and they think that it fulfills both the institutional language needs of Turkish Air Force and the individual needs of the cadets. Majority of the pilot participants are also content with the number of units in *Aviation English for Cadets* course book and they believe that the order of units in the course book is suitable for the cadets. Both the graduate pilots and instructors believe that Module 3 and Module 4 are the most beneficial parts of the book.

English language instructors also believe that the academy's aviation English curriculum have positive effects on enriching the cadets' learning experiences and it increases aviation motivation of the cadets. Furthermore, the instructors think that the curriculum have the potential to fulfill both the institutional language needs of the Turkish Air Force and the individual needs of the cadets. On the other hand, as far as the instructors areconcerned, while 60% of the instructors believe that the

curriculum is applicable to the workplace environments of the cadets, 40% of the instructorshave stated that they are not sure about this. This may stem from the fact that some of the instructors may not be familiar with the cadets' workplace environments i.e. air force bases. Instructors have rather solid statements about the course content and its length. For instance, less than half of the instructors agreed with the statement that "The number of units in the course book is directly proportional to the time allotted for the course" and 20% of them disagreed with the statement. The instructors all believe that the order of units in the course book is suitable for the cadets. But majority of the instructors think that the units in the course book is not attractive for the cadets.

## 6 Challenges

The most important elements in ESP curriculum design are to increase communication ability in work place environments, a balance between content and general language acquisition, materials working in heterogeneous and homogenous learner groups, and a continuous material development (Nunan 1987:75). Realization of such a design heavily depends on well qualified teachers. On the other hand, ESP instruction necessitates specialist knowledge but it can hardly be acquired from the English language teachers. Master (2005) states that teacher's content knowledge is a potential obstacle to teaching ESP. Answering interview questions,TurAFA instructors also stated the need to study the specific content before attending the class. They also admitted the fact that in some cases pilot candidate cadets are much better in flight related issues and they have difficulty in answering content specific questions. Thus, we can conclude that subject matter expertise is a real obstacle for TurAFA instructors. So, in order to become ESP teachers, general English teachers are supposed to get further training (Strevens 1988). Furthermore, ESP teaching not only entails teachers to go beyond their potentials and expertise but also it forces them to become researchers as well as teachers (Hall 2013:5537). Actually ESP instructors assume five different roles as teacher, course designer, materials provider, collaborator (with subject specialists), researcher and evaluator of courses, materials and student learning (Dudley-Evans and St John 1998). Teachers of ESP can get practical experience in the target content area by working in collaboration with subject matter experts (Ewer 1983).

Demanding curricula entails devoted staff and students. As for aviation English instructors, they need to act like field experts rather than English instructors. Hence, they are supposed to study the specific content before attending the class and acquire the technical terms as if they are field experts. Furthermore, as the program is constantly revised and updated in accordance with the current feedbacks, the English instructors are expected to act as syllabus designers, materials developers and, testing specialists. So, they push their limits for the benefits of the program and the institution. As far as the learners areconcerned, earning their engineering degree they are supposed to master not only the general English but also they are required

**Table 3** Courses and seminars for TurAFA ELT instructors (Er et al. 2013)

| Course/seminar | Expertise stage |
|---|---|
| Methodology seminar | Novice |
| Basic language skills | Apprentice |
| Testing English language proficiency | Professional and expert |
| Material development seminar | Professional and expert |
| Curriculum design and evaluation | Professional and expert |
| English language training managing skills | Distinguished |

to have expertise in flight related issues and the content pertaining to their prospective work place environments. Training activities are essential in overcoming the barriers pertaining to staff proficiency. As the literature suggests any curriculum renovation aiming at an effective ESP teaching requires teachers proficient in target content and skilled in curriculum design. So, teachers' potentials and readiness for such an innovation have been a challenge for launching an ESP program for TurAFA cadets. TurAFA as a unique organization has overcome this obstacle by carrying out ongoing educational activities that enable the teachers to become continuous learners. As members of the academy, English language instructors are subject to continuous teacher education programs. Teacher development model for TurAFA teachers is an in-service training program and it is a continuing education designed in accordance with the needs of the individual teachers and institution. Stages of this model are shown in Table 3.

TurAFA teacher development model offers opportunities of cooperation between content specialists and English language teachers. Furthermore, the academy's teacher training program is a bottom-up process favoring the institutional needs and individual teachers' needs equally.

## 7 Conclusion

This chapter has discussed the ESP curriculum of Turkish Air Force Academy with a special focus on aviation English teaching practices in a military context. The study explored aviation English curriculum design and the challenges faced in Turkish Air Force Academy context. The study is based on the relevantacademic literature and the firstauthor's professional experience in the curriculum development process. This studycan provide some insights into the ESP curriculum designers in their efforts in the curriculum development process and in solving the problemsthat they mayface during this challenging process.

Turkish Air Force Academy aviation English curriculum development process pointed out the fact that aviation English instructors need specialist content knowledge. Therefore, educational institutions designing aviation English curricula are to provide the ESP instructors with training programs in order to increase their potentials pertaining to the aviation curriculum content. Furthermore, since the English

language teachers can hardly give this training, as teacher trainers, professional aviators are needed and teachers of aviation English can get practical experience in the target content area by collaborating with subject matter experts i.e. pilots and ATC staff.

Furthermore, aviation English curricula need to be constantly revised and updated in accordance with the current changes in aviation industry's rules and regulations. Hence, the English instructors are expected to act as researchers, syllabus designers and, materials developers.

Aviation English instructors are also the evaluator of courses, materials and student learning. They should keep in mind the fact that aviation English learners are required to master not only the aviation English but also they are required to have expertise in flight related issues and the content pertaining to their prospective work place environments. So, taking this fact into consideration, ESP instructors are expected to monitor their students' learning process and help them to overcome the difficulties they face in this process.

The TurAFA case is especially valuable for ELT instructors acting as ESP curriculum developers. As the study suggests, in developing ESP curricula teacher proficiency in the target content area is essential for the success of the program. But it is the organization's responsibility to provide the staff with proper career development opportunities. Applying a continuous education model for English language instructors is the way TurAFA followed and based on the needs of the institution all organizations can develop such career development plans for their instructors in accordance with their current level of expertise.

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# From EFL to EMI: Hydrid Practices in English as a Medium of Instruction in Japanese Tertiary Contexts

**Naoki Fujimoto-Adamson and John Adamson**

**Abstract** This study has explored methodological issues of teaching the research area of sociolinguistics to Japanese undergraduate students using English as a Medium of Instruction (EMI). EMI has recently become popular in Japanese tertiary education as a government initiative and has been adopted in many institutions for content courses usually delivered in Japanese. EMI practice is, however, still an emerging area of research pedagogically and is informed by Content and Language Integrated Learning (CLIL) studies in other contexts. In this particular EMI case of teaching sociolinguistics, data has taken the form of documentary evidence from the teaching practices of two practitioners at two universities and a Collaborative Autoethnographic account of their perceptions surrounding those pedagogical practices. As primarily language specialists moving into EMI, data has revealed that lesson content has been delivered in both English (the students' L2) and Japanese (their L1) as a "translanguaging" (Blackledge, Creese, Mod Lang J 94:103–105, 2010) means to linguistically scaffold the content input and to integrate "bilingual language practices" (Garcia, Wei, Translanguaging. Palgrave Macmillan, New York, p 80, 2014) among students of diverse language proficiencies. This move towards bilingualism and language-sensitive scaffolding in EMI has acted as a means to decenter potentially demotivating monolingual practice in the classroom (Hanson 2013).

**Keywords** English-medium instruction · Content and language integrated learning · Translanguaging · Collaborative autoethnography · Language sensitive scaffolding · Japanese tertiary education

N. Fujimoto-Adamson (✉)
International and Information Studies (NUIS), Niigata University, Niigata, Japan
e-mail: naoadamson@hotmail.com

J. Adamson
Self-Access Learning Center (SALC), University of Niigata Prefecture (UNP), Niigata, Japan
e-mail: johnadamson253@hotmail.com



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## 1 Introduction

This small-scale study explores pedagogical issues of EFL (English as a Foreign Language) teachers who shift into teaching content using EMI (English as a Medium of Instruction) in two Japanese tertiary contexts. Despite the relatively rare occurrence of this shift in pedagogical practices, it casts useful micro-level insights into the growth of EMI in its particular Japanese sociocultural context since we as practitioners are primarily language educators with sensitivities about language acquisition. Seen from a wider macro stance, Japanese universities are increasingly adopting EMI to attract students due to government policies to globalize the tertiary sector, meaning that Japanese and expatriate faculty are often pressured to teach their content specialism through the medium of English. Whilst resistance exists to EMI, many engage in EMI in ways which are practically aligned with the realities of student and teacher language proficiencies. Such micro-level and locally contextualized appropriation of EMI manifests itself in diverse forms of delivery. In light of these issues, we critically analyze our lesson plans and co-constructed autoethnographic narratives surrounding our teaching practices in Sociolinguistics and Discourse Analysis courses.

Our study reviews the literature, outlines the methodological process, then presents findings in the form of actual classroom practice and teacher narratives, before moving on to a discussion of these findings. Conclusions and implications for our micro practices are then drawn.

## 2 Literature Review

We firstly turn to a review of the literature embracing issues of EMI in Japan, Content and Language Integrated Learning (CLIL), teaching methodologies, and translanguaging, all of which impact and shape our pedagogical approaches.

### *2.1 Japan's Moves Towards EMI at Tertiary Level*

Tertiary education in Japan has experienced a significant shift towards EMI in the last decade. However, as Goodman (2014, p. 130) indicates, although a "global phenomenon", it is "highly context-dependent" meaning that, as can be seen in the Japanese case, its spread has not been uniform or consistent (Brown 2016). Its impetus stems from the realization at government level of the low international ranking of Japanese universities (Kirkpatrick 2014), the high cost of long-term overseas study (Burgess 2014), and a tendency towards inward-looking Japanese youth (Imoto 2013). In response, government policies have been passed down to elite universities to internationalize, or become 'global' in some form, namely, the

2008 Global 30 project, the 2012 Global Human Resources, and most recently the 2014 37 Top Global Universities (Brown 2014). The Ministry of Education, Culture, Sports, Science and Technology (hereafter MEXT 2011) reported that 30% of 800 Japanese universities offered some form of EMI. Such classes started at national universities and were followed by those in the private sector leading to a current 50% increase since 2005 (Brown 2016). Brown and Adamson (2012) noted this trend among non-elite (2nd tier) private universities seeking a competitive edge by increasing enrollment from foreign students and local students, especially due to a decreasing birthrate.

The reality is only 5% of undergrad students (mostly Japanese, not foreign students) actually take EMI classes (Brown and Iyobe 2014). Full EMI programs, as opposed to classes, remain rare (30 at undergraduate and 70 at postgraduate level) and foreign students are often separated from Japanese students in EMI models, for example, in Japanese culture and language degrees. In fact, only 20% of EMI programs actually serve foreign students (Brown 2016) and the perception towards EMI among Japanese faculty persists as primarily for study abroad purposes in Anglophone contexts. Phan's analysis of the spread of EMI in Asia (2013) reveals that it remains a simplistic notion in Japan, often resisted due to claims of linguistic imperialism and greatly limited by Japanese faculty's inability to deliver their content in English (Ishikawa 2011; Yonezawa 2011). The drive towards internationalization to create a 'global' university is often interpreted as teaching programs to foreigners in Japanese, rather than in English, resulting in unchanged language policy despite the MEXT policy of EMI. Chapple (2014) notes the poor motivation to engage in EMI as universities focus on the all-important requirements of job hunting for Japan-language employment, not employment utilizing English.

As Takagi (2013) summarises, EMI in Japan is only taught by those who can do so, not according to student needs, so that policy is implemented in a dissipated and non-homogeneous manner. This illustrates Tsui and Tollefson's view (2003) that local policy-makers have deep-rooted political, social and economic beliefs which tend to override "the educational agenda" (p. 2). It is also reflected in Bamond Lozano and Strotmann's analysis (2015) bemoaning the fact that the rush to EMI in "non-English dominant universities globally often happens with insufficient planning and investment" (p. 848) with the result that language issues in EMI are often "overlooked" (p. 848).

## *2.2 CLIL*

In light of ad hoc shifts towards EMI and lack of language planning in Japan, research into the focus on both content and language on the curriculum plays a pivotal role in informing EMI classroom practice. The integration of content relevant to students' fields of study and language (CLIL) provides those whose first language is not English with an "authenticity of purpose" (Coyle et al. 2010, p 5; Pinner 2012). With European roots in the mid-1990s and Canadian immersion education in

the 1960s (Mehisto et al. 2008), a CLIL approach to instruction is conveniently fluid in methodologies, termed by Ikeda (2012, p. 12) as an "intentional organic" in which language and content teachers collaborate in various forms, from simply information-sharing about lesson content and pedagogy to actual team-teaching. Whether adopted on the language curriculum in English programs or the content curriculum in actual EMI, it can shift strategically during instruction from what Met (2009) terms as "hard" (immersion EMI) to "soft" CLIL (EFL instruction with a touch of content-related materials). This flexibility in delivery carries motivational benefits for students whose language proficiency falls behind their content knowledge (Edsall and Saito 2012; Lasagabaster and Doiz 2016), but risks, if not clearly explained to students or teachers, "disjuncture" (Mehisto 2008, p. 93), where course objectives and pedagogies are misunderstood. This potential confusion is countered by CLIL advocates who outline its cognitive advantages (Lamsfuß-Schenk 2002). Furthermore, Stohler (2006) argues that no significant differences are evident in content knowledge acquisition in L1 or L2 and adds that "...the teaching of non-linguistic topics in an L2 does not impair the acquisition of knowledge" (p. 41). However, Llinares (2015) notes that few CLIL studies measure content improvement, instead focusing solely on development of language proficiency.Specific to the Japanese tertiary context, Taguchi and Naganuma (2006) and Ohmori (2014) identify the potential for university language pedagogy in learning content through English. Further to this, Brown and Adamson (2012) and Brown (2016) argue English for Academic Purposes (EAP) provision in Japanese universities can take on a new purpose, not for preparation for overseas content study, but for localised Japanese forms of EMI involving the integration of academic Japanese and English language materials, a point resonating with Lasagabaster's (2013) and Merino and Lasagabaster's (2015) advocacy of the students' L1 in CLIL instruction. This implies interdisciplinary collaboration between content and language faculty which moves CLIL instruction into a potentially bilingual mode of instruction. Importantly, though, the relationship between content and language faculty should adopt a more "horizontal alignment" (Turner 2012, p. 24) so that their respective professional expertises merge (Lucietto 2008).

## *2.3 Teaching Methodologies*

The premise underpinning the teaching methodologies in this study is that English teachers make the transition to teaching content in English to Japanese undergraduate students. As Fujimoto-Adamson and Adamson (2015) underscore in this shift, it is important to offer not only language support towards students whose first language is not English, but also clarity in EMI content delivery. The "dual focus" (Coyle et al. 2010, p.1) of content requirements for the syllabus and language needs is clearly informed by the experiences and research into CLIL. To simply combine content and language without gauging the level and complexities of language and content input may lead to, as Lasagabaster (2011) warns, lower cognitive

engagement by students. This would then necessitate some degree of "sheltered content-based" teaching (Brinton et al. 1989) by focusing strategically on language forms to facilitate effective, or "desirable" engagement with content (Muñoz 2007, p. 23), termed by Lyster and Mori (2008, p. 134) as a "counterbalanced" approach to teaching content. Problems inherent with such attention to language, however, are noted by Ottewill and Drew (2003) who observe that, when transferring skills acquired in language instruction to content classes, students may perceive language and content skills as belonging to "separate spheres" (p. 186). Overcoming this lack of skills transfer would appear at least on the teacher's part to be less of an issue for language teachers who make the transition into content teaching as language issues are integrated into the flow of the content lesson (Adamson 2005a).

Other strategies recommended are "slowing down one's pace" to allow students to absorb the content input and engage in peer concept checking (Goodman 2014, p. 139). We argue that it is essential to extend scaffolding of the lesson's content input from a strategic language focus to an additional sensitivity towards visual representations (grids and matrices etc) of content (Fujimoto-Adamson and Adamson 2015; Adamson 2005b). Such visuals can be effective in clarifying to students complex concepts or processes and reduce time spent on lengthy oral explanations (Kang 2004; Wallace 1980). Pinner (2012) and Er and Kırkgöz (chapter "Introducing Innovation into an ESP Program: Aviation English for Cadets", this volume) support this use of authentic materials relevant to students' content fields as they carry more relevance to the instruction and are therefore more likely to engage students in deep learning in EMI contexts, as outlined by Soruç et al. (chapter "Listening Comprehension Strategies of EMI Students in Turkey", this volume).

## 3 Translanguaging

The final influence on our practice in this study surrounds the use of the students' L1 (Japanese) in content classes. As previously argued, our EMI practice is influenced heavily by research into CLIL, the nature of EMI in the Japanese tertiary context, and our strategies concerning the teaching of content by language-sensitive EFL instructors. Embedded within these arguments is the notion that content instruction is porous to the local (L1) academic context and not necessarily intended to prepare students for academic study abroad in Anglophone contexts (Brown and Adamson 2012; Brown 2016). We pursue this argument by addressing how Japanese (the L1) and English (the L2) are combined to enhance the sense of 'localised' academic study and fundamentally challenge the predominance of the 'E' in EMI, a stance which resonates with Belcher's (2013 in Paltridge & Starfield eds.) comments about the growth of English for Specific Purposes research in non-center contexts.

The use of two languages in pedagogic contexts is termed as "translanguaging" and defined by Doiz et al. (2013, p. 213) as "the adoption of bilingual supportive scaffolding practices." It fundamentally opposes the "two solitudes" (Cummins

1994) separation of languages in education, in which L1 use in L2 instruction is viewed as "contamination" rather than "cross-fertilization" (Blackledge and Creese 2010, p. 203). The "integration" of practices from multiple languages is regarded as cognitively beneficial to learners (Garcia and Wei 2014, p. 80), not simply for the acquisition of a new language, but also for content instruction in the L2 (Hornberger 2003; Hult 2007) where collaboration between students on authentic tasks is necessary to mediate understanding (Martin-Beltran et al. 2017). Its use generally signals a shift in language education from monoglossia to hetereoglossia and is now accepted practice in many educational contexts (García and Flores 2013) where there is a growing integration of language, literacy, and content learning through translanguaging. Strategic L1 use is beneficial in "developing an enriched bilingual vocabulary" (Gallagher and Collohan 2014, p.11) and, especially for lower language proficiency students, in developing their sense of autonomy through "code choice" (Levine 2011). Soruç, Dinler and Griffiths (chapter "Listening Comprehension Strategies of EMI Students in Turkey", this volume) investigate this issue in the Turkish tertiary EMI context, revealing that translation by many students themselves into L1 aids their comprehension of L2 lecture notes. In the Japanese tertiary context, Adamson and Coulson (2014, 2015) reveal that translanguaging through use of Japanese academic readings in English lectures preparation classes enhances lower proficiency students' comprehension, reduces anxiety, and develops L2 writing confidence. Further to this, Lu and Horner (2013) regard L1 to L2 translation as a kind of "translingual" approach which gives "agency and responsibility" (p. 29) to L2 writers. Also, Lorimer (2013, p. 163) indicates that L1 use in the drafting process of L2 writing develops "rhetorical attunement" and an "ear for difference." However, despite these reported merits, its use must be also tempered by views by students or instructors of "feelings of guilt, unprofessionalism and subterfuge" (Gallagher and Collohan 2014, p. 2) if their personal views, or institutional policies, on L2 learning or EMI are heavily influenced by monolingual views on learning and teaching. Finally, Cross (2016) stresses that tensions do exist surrounding translanguaging as a pedagogical approach, both in language learning and content learning contexts, and may influence students' identity formulation and development of proficiency in language and content.

## 4 Methodology

The methodological approach for this study is a triangulation of descriptive observation of classroom methodologies and collaborative autoethnography (CAE) (Chang et al. 2013, p.17). The two institutions and practitioners are seen as part of a "collected case study" (Stake 1995) in which context and participants are seen as distinct. The first step in this process is to describe the two contexts and participants, noting their particularities. This is followed by a presentation of classroom methodologies which the practitioners see as typifying their focus of content and

language(s). It is supported by extracts the CAEs which reveal practitioner perceptions and beliefs about the chosen teaching methodologies not perhaps possible through individual narratives. The formulation of CAEs was undertaken interactively on Google Drive over the duration of the 2016–2017 academic year. Despite being a lengthy process, it creates a co-constructed narrative space which aims for "collective exploration of researcher subjectivity" (Chang et al. 2013, p. 25) to achieve "deeper learning about self and other" (p. 25). This "synergy and harmony" (Chang et al. 2013 p. 24) is argued here as not simply to reveal beliefs but can also serve as a transformative means in teacher development.

## 5 Findings

Findings are presented firstly concerning the context of the study, followed by selected examples of classroom methodologies and concluded with key extracts from the CAE.

### *5.1 Context and Participants*

The following table represents details of the two contexts and participants (teachers and students) in which we practice EMI.

Table 1 illustrates various factors which help to contextualize the study. As can be noted from the above, the language proficiency of students in the private university is generally below that of those in the prefectural university. Both teachers have experienced studying content in a language other than their own L1 which is potentially a means of sensitising them to their current students' language difficulties in EMI classes. Interestingly, both teach a progression of EAP, EMI and then have classes in which students write an undergraduate dissertation based on their EMI subjects of Discourse Analysis and/or Sociolinguistics. The two EMI subjects are taught in a similar manner, by means of teacher input scaffolded with various visuals which we present in the next subsection. This input is accompanied by class activities requiring students to work individually or in small groups to complete tasks aimed at raising awareness about the content. These tasks are carried out using either Japanese or English according to student preference. Assessment for the Discourse Analysis class is a mixture of homework, formal test and student group presentations on a theme related to the course content. The Sociolinguistics course is combined with some Discourse Analysis and is assessed through essays on course themes and similarly encourages students to investigate either English or Japanese language themes.

**Table 1** Two contexts/participants

| Institution | Prefectural university/John | Private university/Naoki |
|---|---|---|
| History | Established in 2009 as a university with EMI ambitions; previously a women's college since 1960s. | Established in 1994 as a private university to foster students specialize in languages and information. |
| Curriculum | As a college a large English studies department existed but closed in 2009. From then EAP has been compulsory for all first year students followed by some EMI; Content curriculum is economics, politics, environment and cultural studies. | There are four foreign language courses (English, Russian, Chinese, Korean) and English is compulsory for all first year students. EAP is optional for first year students. Then two EMI (Sociolinguistics and World Englishes) courses are offered for third and fourth year students. |
| Teacher | Male/British in 50s | Female/Japanese in 40s |
| Languages | English (L1), German, Japanese | Japanese (L1), English |
| Qualifications | Business studies degrees, RSA Diploma, MA and Doctorate in Applied Linguistics | Japanese university literature degree, teaching license, two MAs in Applied Linguistics and Education. |
| Learning experience in non-L1 Medium instruction | Studied business in German in Germany at university | Studied Applied Linguistics in English in the UK at university |
| Teaching experience | 30 years teaching English in UK, Thailand, Germany and Japan; previously in the corporate world in Germany and UK. | 20 years mostly teaching English in Japan (Junior High School, College and universities) and UK teaching Japanese |
| Current classes taught | EAP (1st grade), EMI (Discourse Analysis to 2nd/3rd graders), 4th year dissertation class on Discourse Analysis. EMI classes are optional and large (60 plus). | EAP (1st grade), EMI (Sociolinguistics to 3rd graders), 4th grade dissertation class on Sociolinguistics and Discourse Analysis. EMI classes are small (n = 16) and optional. |
| Languages used in class (when) | English/Japanese<br>(English: handouts, homework, tests, some class input, some extra readings; Japanese: class discussions, some class input, some extra readings) | English/Japanese<br>(English: handouts, some class input, some group discussions, essays, BA dissertations, students' academic presentations; Japanese: some class input, some group discussions, |
| Assessment | Homework, paper test, group presentations | Essays for first and third graders, BA dissertations, individual presentations, oral exam for 4th graders |
| Institutional language policy | Flexible; most Japanese faculty teaching content through Japanese; most expatriate teachers use English only in language classes. | Flexible; most Japanese faculty teaching content through Japanese<br>Some English teachers (both Japanese and non-Japanese) use mainly English in language classes. Two Japanese English teachers teach content through English. |
| Students in EMI/ language proficiency (IELTS equivalent) | Japanese 2nd and 3rd year students varying from advanced to intermediate (approx. IELTS 4.5–6.5) | Japanese 3rd–4th year students' proficiency varies from approx. IELTS 3.5–5.5. |

## *5.2 Classroom Methodologies*

We present here a selection of activities which are in various degrees and forms aided by visuals. As previously argued, this is representative of the scaffolding of content input in order to not simply convey course input for comprehension purposes, but also to act as a means for student activity involving either individual or small group work.

**Example 1: L1 Language Awareness/Translanguaging**
The first example comes from the Sociolinguistics class and requires students to write the Chinese characters (in Japanese *kanji*) which are used in everyday life in Japan (Japanese consists of three types of scripts derived originally from Chinese. *Kanji* are pictorial representations of meaning as opposed to the other two scripts, *hiragana* and *katakana* which are phonetic). As students are expected to master a wide range of *kanji* for daily and academic use, it was considered to be a valuable awareness-raising task to ask them to write three common *kanji* and analyse them for the inclusion of the character for 'woman' in each one. Discussions focused on the potential sexist implications in each character as the meanings of 'jealous', 'hate' and 'noisy' are predominantly negative. Students were frequently surprised in discussions and feedback from groups suggested that most considered the negative connotation to be sexist.

Rubric: Many words or expressions show discrimination towards men or women. In Japanese, what language do you know which is "sexist"? Please write the *kanji* for 1.netamu (to be jealous), 2. kirau (hate), and 3. kashimashi (noisy).

| 1. 妬む | 2. 嫌 | 3. 姦し |
|---|---|---|

Why is the kanji for woman (女) in these negative meanings? Is this discrimination? Write your response below and compare with a partner.

| |
|---|
| |

**Example 2: Lesson Extract on Speech Events**
This next example from the Discourse Analysis class requires students to reflect on class input on speech events by assessing the degree of formality on a speech event continuum. The task is completed firstly individually by marking a number on the continuum. Pair and group comparisons then follow and students are prompted to discuss why they have placed a speech event at a certain point. This task is particularly useful in encouraging student awareness about their own discourse in various speech events which vary in hierarchical nature.

Rubric: Sacks et al. (1974) looked all many types of speech events and made a "continuum" from the most formal type of talk to the most casual.

Most formal Most casual

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In pairs, decide where these speech events go on the continuum of speech events and compare with a partner. How are your answers different or the same?

1. Talking to your mother on the phone
2. Talking to an old friend on the phone
3. Talking to your old teacher on the phone
4. Giving a graduation speech
5. Opening a party at cherry blossom time
6. Speaking to a waiter in a restaurant
7. Speaking to a junior at college
8. Speaking to a senior

**Example 3: Dialect**

The Sociolinguistics course has a lesson on dialects, part of which focusing on London 'Cockney.' The rhyming nature of Cockney with its standard meaning and then producing a sentence proves to be amusing and quite unique for students.

Rubric: In London, some local people use Cockney. The word for an underground train in London is "tube." In rhyming Cockney English, they say "cube". Cockney speakers also change the letters of words and add new words, e.g. "Bees and honey" means money.Try to match these Cockney words (left) with the standard English (right) with a line ----------:

| | |
|---|---|
| Lollipop | home |
| Gates of Rome | road |
| Dickey dirt | single |
| Frog and toad | look |
| Adam and Eve | shop |
| Mandy dingle | believe |
| Butcher's hook | face |
| Boat race | shirt |

Can you make a sentence?

Example: Let's take the cube = let's take the tube

**Example 4: Context and Discourse**

The next example comes from both the Discourse Analysis and Sociolinguistics course and is taken from the means to describe the context underlying discourse by Hymes (1974).

Rubric: The following is the SPEAKING model by Hymes (1974). Now use it to analyse an extract from a movie of your choice.

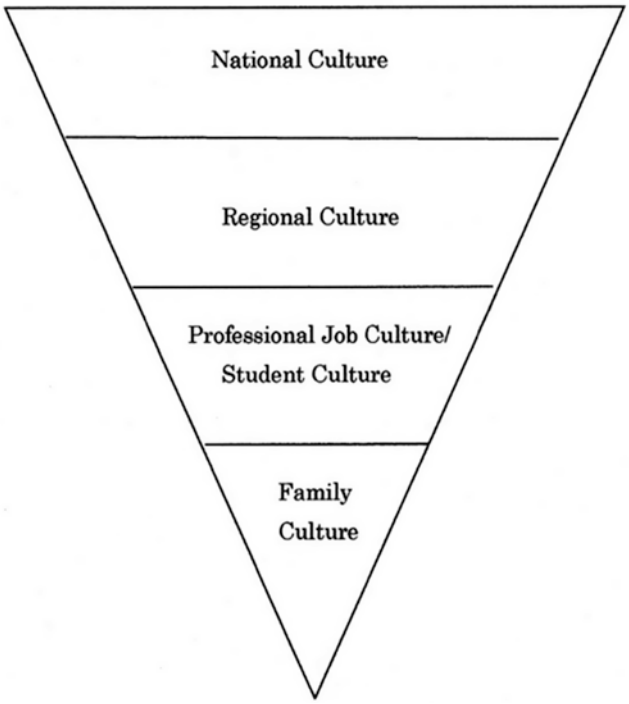
| Initial | Word(s) | Explanation |
|---|---|---|
| S | Setting and scene | Time and place of a speech act |
| P | Participants | Speakers and audience |
| E | Ends | Purposes, goals and outcomes |
| A | Act sequence | Form and order of the events |
| K | Key | Tone, manner of spirit of the speech act |
| I | Instrumentalities | Forms and styles of speech |
| N | Norm | Social roles governing the event and participants' action and reaction |
| G | Genre | Kind of speech act or event |

The following is one student's analysis of a scene from the movie *Charlie and the Chocolate Factory* and illustrates the compact and visually clear nature of using the SPEAKING model in tabulated form. Student language output is notably short which accommodates linguistically less proficient students in the task.

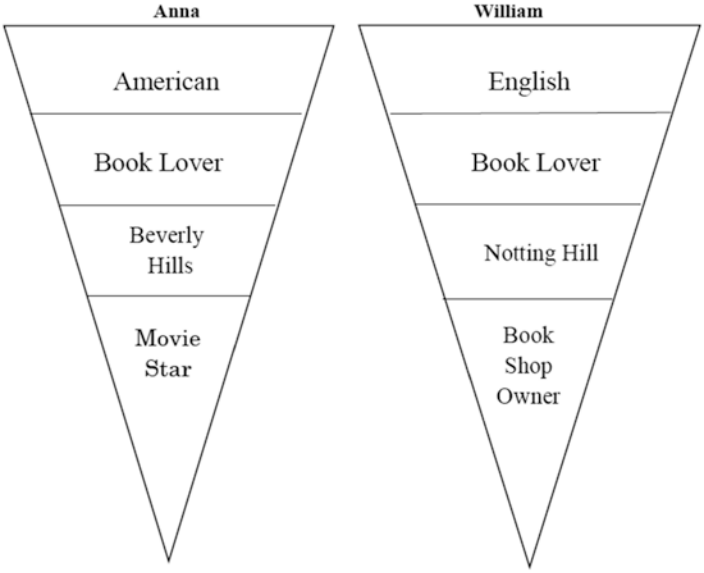
| Initial | Criteria | Analysis |
|---|---|---|
| S | Setting& scene | Charlie gets the last ticket that it can go to the chocolate factory therefore his family needed to decide who was going to the factory with Charlie. |
| P | Participants | Speakers: Charlie and his Family, Audience: Family members |
| E | Ends | Charlie and family decide go to the Chocolate Factory. |
| A | Act sequence | Family decided that Grandpa Joe was going with Charlie to the factory. However, Charlie said that he did not go to the factory, because he decided to sell the ticket to someone. |
| K | Key | Charlie: hiding his true feeling, Father: modest, Grandpa Joe: determined, Mother: honest |
| I | Instrumentalities | Casual conversation among family members |
| N | Norm | Charlie did not have appetite of child. Therefore, he could not say his feelings better. |
| G | Genre | Conversation |

**Example 5: Cultural Identities**

The final example is from the Sociolinguistics course and uses Holliday's (1994) concepts of multiple affiliations to cultural groups in identity. It acts as a means to raise awareness among students that they belong to diverse 'cultures' which impact their relationships. After representing these 'cultures' in pyramid form below, students are asked to represent their own cultures in similar form and use the concept as a way to analyse a part of a movie.




The example below shows one student's analysis from the movie *Notting Hill* (1999) in which Anna, a rich American movie star meets William, a struggling English book shop owner in London. Differences and similarities in their respective cultures become visually clear.



### *5.3 Collaborative Autoethnographies*

The first stage in creating our CAE narratives was to create "frames" (Warwick and Maloch 2003, p. 59), the broad themes around which stories could be told. We negotiated the following seven frames to use for our CAE:

1. Moving from EFL to EMI practice
2. Adaptations in EMI for local Japanese students
3. Scaffolding issues
4. Translanguaging issues
5. Assessing learning outcomes (Language/content)
6. Student perceptions
7. Implications for further practice/investigation

The second stage signalled the start of the actual CAE which took place through 2016 in written mode on *Google Drive* allowing us to store our narratives and interact without necessarily meeting. For the third stage, data analysis of the discourse was a "crystallization" (Hycner 1985, p. 279) to represent the 'essence' of the narratives within each frame. Key parts are presented below (John's narrative in *italics,* Naoki's normal script*.)*

**Extract 1: Moving from EFL to EMI Practice** Themes emerging in this first frame revealed similarities in what John and Naoki teach and highlighted their realization of the importance of linking 1st year EAP with EMI study later.

> (Naoki) EMI was very challenging for me because in their final year, my students need to write their BA dissertation in English (5,000 words), oral presentations and oral examinations in English. I realized that it is quite a responsible job to do compared to teaching EFL.

> (John) *This is a similar situation to me as I also teach 4th students who need to write a dissertation in English doing a discourse analysis followed by a short presentation. In a sense all the academic writing instruction I give to 1st graders has a final objective with the dissertation.*

> (Naoki) I also started to teach English for Academic Purposes (EAP) for small groups of 1st year students since last year. In this class, I teach basic study skills which can be a preparation for EMI lessons when they become 3rd and 4th years.

**Extract 2: Adaptations in EMI for Local Japanese Students** This frame emerged as key in understanding John and Naoki's adaptations in EMI. Both referred to their ways of scaffolding the classes in terms of language, namely simplification of delivery and modelling of essays. Content simplification was also mentioned, John noting that his prefectural university's fields of study were not primarily focused on educational or linguistics so many students lacked a background in Applied Linguistics.

> (John) *As my large EMI lessons are for mixed proficiency students, I need to make some adaptations in terms of language, and also in some sense, content too. Students at my university are not studying linguistics.*

(Naoki) Although my classes are smaller, my EMI is similar because my students' main subjects are international politics, economics and culture. Also, their language proficiency is perhaps lower but still varied, so I believe that simplification of the content delivery and scaffolding the lessons are essential.

**Extract 3: Scaffolding Issues** In terms of how both teachers scaffold EMI, John focused more on in-class language issues (pre-teaching vocabulary items) and simplification of content delivery, whereas Naoki's concern was more on providing final writing models (templates) as a basis for the final year dissertation.

(John) *I try to scaffold both English use and content ideas. For language, I write a short list of key language terms at the side of the board either before or concurrent to content input. I tend to slow down in delivery when they take notes and provide teacher copies for this in which terms are defined simply.*

(Naoki) As for my 1st year EAP and 4th year seminar classes (Sociolinguistics and Discourse Analysis), I always make sure to show models. Then students can understand what kind of essays or dissertation they need to write. I recommend they use my template with set expressions.

**Extract 4: Translanguaging Issues** Both have bilingual stances and advocate L1-L2 use without top-down language policy implementation. This encourages student choice and decision-making about which language to use since the course objective in EMI are more content- than language-focused.

(John) *One major difference from English-only EMI practice for me is the use of students' L1 (Japanese) in various ways. Firstly, I use Japanese at times to manage the lesson or to make strategic explanations of some concepts. My feedback is sometimes in Japanese after a task. Also, students may use either English or Japanese for discussions. They can also analyse Japanese discourse (movies, recorded data etc) with frameworks (from their Discourse Analysis classes) in English. I don't forbid Japanese because the objective of the lesson is not to develop English skills but content understanding. In this way, I hope that lower proficiency English students will not be reticent in discussions. There is a hybridity of free-flowing L1-L2 use by myself and students simply to 'get the job done'; each student or group makes their own language choices rather than through 'policy' imposed upon them by me.*

(Naoki) My stance is also similar as I don't forbid my students' Japanese use. I also use both English and Japanese during the lessons. Additionally, I occasionally use a sociolinguistics textbook in Japanese to supplement English handouts and deepen students' understanding. After all, the purpose of the lessons is to understand the content of Sociolinguistics and Discourse Analysis.

**Extract 5: Assessing Learning Outcomes (Language/Content)** In consideration of assessment, John and Naoki indicate that content criteria are prioritized and that only language issues hindering comprehension lead to marking down student grades.

(John) *My evaluation criteria are content-focused rather than language-based. Of course, if presentations and reports are written in such poor English that I cannot understand, then they need to be marked down.*

(Naoki) My evaluation criteria is similar because I focus on both content and language. The main reason is my relatively small groups of students so I can advise on language use for essays and dissertations.

**Extract 6: Student Perceptions** Formal surveying of student perceptions of John's course was institutionally based revealing generally positive student feedback, although he is concerned about student motivation for his class. And how Japanese faculty who teach content through Japanese may regard his course. Naoki's course has no institutional survey but feels perceptions are positive.

(John) … *official feedback has been positive too although I wonder what motivation some students have for taking the class: An easy option? Curiosity? A content class to practice English? Japanese content teachers may view my content classes as less rigorous than theirs.*

(Naoki) Actually, since my EMI lessons are conducted in the seminar classes with small groups of students, there is no official student feedback. However, students seem positive possibly as these are optional so students are genuinely interested.

**Extract 7: Implications for Further Practice/Investigation** Both John and Naoki see a need to investigate L1 use more. Naoki particularly wishes to survey student perceptions more formally.

(John) *In terms of practice, I think I need to reflect on how I use L1 (Japanese) more – is it effective? too much? too little? Should I learn how to explain technical terms more in their L1?*

(Naoki) Yes, I agree with John to investigate more about the use of L1. Also, since there is no formal student feedback in my EMI class, it is difficult to know about students' perception. Therefore, conducting questionnaire or interview for students would be interesting.

## 6 Discussion

In light of the findings presented from the contextual details in the two settings (Table 1), methodological practices teaching EMI, and the CAE insights, it emerges that a degree of hybridity in practice and underlying rationale exists. Clearly we both share pivotal experiences in learning content through an L2. We both stress the importance of language sensitivity through models and vocabulary, as in Lyster and Mori's (2008, p. 134) "counterbalanced approach" to EMI. Additionally, significant to the notion of "hybrid" practice (Fujimoto-Adamson and Adamson 2015), we embrace the students' L1 for discussions, background reading and within content tasks (see Example 1 on the *kanji* for woman and Extract 4 on how analysis of Japanese language is encouraged). This stance sees translanguaging for "bilingual supportive scaffolding" (Doiz et al. 2013, p. 213) in language comprehension, and as part of the content syllabus. Language then takes on the role of medium and content accommodating "bilingual language practices" (Garcia and Wei 2014, p. 80) of all participants. In this sense, our own language competencies – Naoki's as a fluent

Japanese speaker and highly competent English speaker, and John's as fluent English speaker with some Japanese competence – could be contrasted by concluding that the ability to translanguage between English and Japanese is a shift in which Naoki can excel, possibly more so than John when the focus is cast upon subtleties in Japanese. In reverse, when the focus shifts to subtleties in English, John may be seen as possessing deeper knowledge of English; however, our respective competencies are not simply language-bound as content issues of Sociolinguistics and Discourse Analysis in EMI are not solely limited to language proficiency.

Assessment of both EMI courses are content-focused, although John notes extremely poor language leads to downgrading. Important here is the avoidance of confusion as to what assessment is based upon – content or language – as we are recognised in our institutions primarily as language faculty (Lamsfuß-Schenk 2002). The issue of "disjuncture" (Mehisto 2008, p. 93) does not emerge but John mentions (Extract 6) how other faculty may regard his simplified delivery. Naoki appears less concerned with such adaptations and stresses the practicality of language modelling for essay writing, perhaps a consequence of her own EMI experiences in the U.K. and heightened sensitivity to student struggles in academic writing (Extract 3). Interesting, we both note the link in EMI practices to EAP instruction (Extract 1), providing justification and relevance for the "horizontal alignment" (Turner 2012, p. 24) of EAP aims to local EMI norms (Brown and Adamson 2012). As we teach both EAP and EMI, it appears we are well-positioned to transfer skills taught in language classes over to content classes, thereby combining skills from "separate spheres" (Ottewill and Drew 2003, p. 186). This natural familiarity with content and its vocabulary avoids the issues outlined by Celik et al. (chapter "Are We Really Teaching English for Specific Purposes, or Basic English Skills? The Cases of Turkey and Latvia", this volume) of the language teacher's struggles with technical terminology.

In terms of government (MEXT) policy advocating the adoption of EMI, there is a clear sense of localization of content and languages which exhibits our own interpretations of "the educational agenda" (Tsui and Tollefson 2003). Our experiences as students ourselves and as language teachers give us sensitivities and insights into EMI practice which are pedagogically pragmatic and reflective. There is a "fluid practice at the institutional level" (Goodman 2014, p. 131) in practice informed by CLIL research and an expansion of the use of language(s) in EMI which challenges the monolingual 'E' in EMI. Bilingualism in our local EMI practices is however tempered by awareness that tensions exist concerning translanguaging (Cross 2016) due to potential feelings of monolingual language beliefs among some students who see John's course merely as a means to practice English (Extract 6). This is in contrast to the acceptance of plurilingual language policies as outlined by Mačianskienė and Bijeikienė in the Lithuanian tertiary context (chapter "Fostering Active Learner Involvement in ESP Classes", this volume).

## 7 Conclusions and Implications for Teaching and Research

Our conclusions to this study are limited to the case study boundaries from which the data was gathered. The findings are in this sense intrinsic to our practices alone; however, these practices are shaped by broader trends in Japan and globally to which other EMI practitioners are inevitably exposed. Our first concluding thoughts are that the CLIL literature focusing on how content and language are combined has greatly informed our practice as it gives us, as language and content practitioners, a source of studies which can be contrasted to our own experiences. Although our study has focused on the EMI experiences of teaching Discourse Analysis and Sociolinguistics, our primary teaching activity in EAP course which precede EMI provide a rare but unique informative set of insights into the role of language in content instruction, a sensitivity towards students struggling in language proficiency with which we are engaged daily. The essential message for us as language educators is to encourage students to carry over skills acquired in EAP lessons to EMI learning and not to regard them as "separate spheres" (Ottewill and Drew 2003, p. 186). In our EMI practice itself, we coin the expression '"hybrid" (Fujimoto-Adamson and Adamson 2015) to try to encapsulate how teaching and learning take on a "fluid" nature (Goodman 2014, p. 131), noted in CLIL practice as "organic" (Ikeda, p.12). In concrete terms, this manifests itself in the inclusion of the students' L1 (Japanese), not as a top-down policy but more of a pragmatic and natural means to translanguage into meaning. Language use is seen both to achieve comprehension and as part of the content syllabus. This, as previously argued, fundamentally challenges the 'E' in EMI. Also in this hybridity is the scaffolding of content through simplified visuals which is not uncommon in any content instruction, yet takes on greater significance when learning content in one's L2. Our own experiences studying content abroad in Germany and the U.K. possibly help shape that practice.

The implications for this small-scale study are to firstly collect more data longitudinally, not just to continue the CAE which have provided valuable insights over one academic year for us, but to expand by triangulating with data exploring student perceptions about our hybrid EMI practices. Of particular interest, here would be how students view translanguaging, as a practice which contravenes their beliefs about content instruction or language learning. Fundamentally, this asks whether monolingualism or bilingualism should be integrated into EMI. In the process of adopting EMI in Japanese tertiary institutions, the complaints of a lack of uniformity and clear government direction in implementation due to resistance and teacher competence may actually give rise to the creation of a flexible space for pedagogic experimentation as seen in our study in non-elite universities. Of final note is the methodological approach using CAE which we both feel to have had a synergistic effect (Chang et al. 2013) on how we give voice to our perceptions on our practices.

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# Fostering Active Learner Engagement in ESP Classes

**Nemira Mačianskienė and Vilma Bijeikienė**

**Abstract** This chapter focuses on research into the quality of teaching English for Specific Purposes (ESP) with the focus on active learner engagement into the learning process. At the foundation of the study lies the belief that language learning, especially learning a language for specific or occupational purposes, is a lifelong learning endeavor. Participants of this study were 78 first-cycle and second-cycle students of Vytautas Magnus University (VMU) who took four ESP courses, namely *Business English, English for Diplomats, English for Politics* and *Legal English*, in 2015 and 2016 spring and autumn semesters and 10 teachers of 15 different ESP courses. The study used the Mixed Method Approach to collect more comprehensive data and interpret it from different perspectives. Among other results, the study has revealed that most problematic is the development of those competences that relate to students' active participation in the learning process and their development of transversal skills. We hope that the findings of the study will contribute to the field of ESP methodology by providing insights into fostering active learner engagement through efficient ESP teaching and learning activities and methods.

**Keywords** English for specific purposes · Language for specific purposes · Active learning · Learner engagement · Formative assessment · Transversal skills

## 1 Introduction

Over the last decade European Space of Higher Education has experienced a skyrocketing increase in English-Medium Instruction (EMI) and English-Medium Education in Multilingual University Settings (EMEMUS) (Milne et al. 2013; Dafouz and Smit 2016; Smit and Dafouz 2012; see also Fujimoto-Adamson and Adamson (see chapter "From EFL to EMI: Hydrid Practices in English as a Medium of Instruction in Japanese Tertiary Contexts" in this volume) for EMI in Japanese higher education and Soruç et al. (see chapter "Listening Comprehension Strategies

N. Mačianskienė (✉) · V. Bijeikienė
Vytautas Magnus University, Kaunas, Lithuania
e-mail: nemira.macianskiene@vdu.lt; vilma.bijeikiene@vdu.lt



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of EMI Students in Turkey" in this volume) for EMI in Turkish higher education), which has triggered vast research on how content is taught using English as an additional language and as the main language of research and studies, or *lingua academica* to use Phillipson's (2009) term. EMI is becoming a rule rather than an exception of a European university and this change has resulted in an extreme shift towards the research on the acquisition of content in EMI programs or dealing with international audiences leaving the development of linguistic competences largely of a secondary concern. Nevertheless, an increasing number of EMI study programs do not simultaneously guarantee either the quality of English for Specific Purposes (ESP) that must be an indispensable part of such a study process or the competence of ESP that students and teachers must inevitably possess for such a study process to be implemented with efficiency and success. While ESP is generally regarded as a commonsensical and taken for granted part of EMI, it is of utmost importance to make every effort to ensure its quality in the teaching process and in the development of students' communicative competences.

Education at Vytautas Magnus University (VMU)[1], established in 1922, closed during the soviet occupation, and re-established in 1989, is based on the principles of Liberal Arts and Sciences which embody the provision of broad versatile higher education, in-depth studies in the chosen major field and acquisition of transversal skills. The university adheres to its values – to be critical and engaged, to be international and multilingual, and to promote creativity in science and arts – listed in its Mission and Vision statements. *Artes Liberales* ethos permeates the organization of interdisciplinary studies in a broad range of fields ranging from humanities, social sciences and arts to the fundamental sciences, environmental sciences and biotechnologies. It fosters students' creativity and social responsibility as well as active engagement in the study process through acquisition of analytical thinking skills, plurilingual communication competences, ethical decision making and lifelong learning skills, ability to cope with challenges of complexity, diversity and change and contribute to the well-being of the society.

Following the principles of Liberal Arts and Sciences, the university creates favorable conditions for language learning so that a student of any cycles and any major can choose any of the offered languages[2]. For instance, a major in business administration may opt to gain communicative competence of Chinese or a major in IT may choose to learn Norwegian, thus generating a wide spectrum of language-enhanced specialty options. The English language, on the other hand, is obligatory to all majors of the first-cycle programs and strongly recommended to all other students.

[1] www.vdu.lt

[2] VMU offers around 30 languages as compulsory or elective courses including Arabic, Catalan, Chinese, Danish, English, Estonian, Finnish, French, German, Modern and Old Hebrew, Italian, Japanese, Korean, Kyrgyz, Latin, Latvian, Lithuanian and Lithuanian Sign language, Modern, New Testament and Ancient Greek, Old Norse, Norwegian, Portuguese, Polish, Russian, Spanish, Swedish, Turkish and Yiddish.

The VMU model of Liberal Arts and Sciences uncovers vast possibilities for each student to develop their transversal skills including the improvement of communicative competences as enshrined in *VMU Language Policy* adopted in 2014 and the latest amendments of *VMU Study Regulations* of 2016. While the former document guarantees linguistic rights and language learning options for all VMU community, the latter document increases language learning options for the first-cycle students by the formula 12+12: all first-cycle students have to use 12 ECTS for language learning as compulsory courses and can spend the other 12 ECTS taking language courses as electives. Aiming at interdisciplinarity of the newly developed and current study programs – as one of the strategic University objectives – students are offered a number of Languages for Specific Purposes (LSP) courses (English, French, German, Latin and Russian) including such courses as *French for International Relations*, *German for Work, Business Russian*, and *Latin for Lawyers*. As far as the English language is concerned, the required competence for all first-cycle students is C1 level (according to the *Common European Framework of Reference for Languages*, 2001). Attuning to the CEFR levels and forming language groups on the basis of students' actual level of competence allows ESP teachers to avoid challenges of significant differences in students' proficiency, noted by Çelik, et al. (see chapter "Are We Really Teaching English for Specific Purposes, or Basic English Skills? The Cases of Turkey and Latvia" in this volume). It can be attained through a broad choice of skill-oriented C1 level courses, such as *English Grammar for Communication*, *English for Intercultural Communication, Reading and Listening, Academic writing* etc., and C1/C2 level courses of ESP for different specific domains like *Business English, Legal English, English for Diplomats, English for Art, English for Social Sciences, English for Natural Sciences, English for Politics, etc*.

The ESP courses provided at VMU were evaluated as "promising examples" and acclaimed as "using new technology and innovative combinations of other approaches" in the Report of the CELAN[3] (*Language Strategies for Competitiveness and Employability*) project, coordinated by the Business Platform for Multilingualism. It is also indicated in the Report that the ESP courses delivered at VMU "cover a range of disciplines, including Psychology and Social Work, Political Science, Technology, Arts, Law, Education, and Business and Academic English". These courses, as further maintained in the Report, focus on a variety of communicative and general skills: "teaching students how to negotiate, work in teams, organize discussions, write business letters and plans, and conduct job interviews". Moreover, VMU utilizes the virtual learning platform Moodle to create a virtual environment for language learning, in addition to employing computerized learning advantages provided by multimedia classroom and resource management system SANAKO LAB 300".

As a result, VMU English for Specific Purposes courses aim at helping students to prepare for carrying out efficient professional communication at the workplace, having acquired work related language and communication skills and having gained

[3] www.celan-platform.eu

understanding of the key principles and ideas of the professional field. Assuming that language learning, especially, learning a language for specific or occupational purposes is a lifelong learning endeavor, ESP courses aim at fostering the development of learner autonomy, enabling students to take control over their learning and learn to learn throughout their lives. Therefore, the engagement of learners into the language learning process encouraging them to become more autonomous is an acute problem in teaching ESP.

The **aim** of the present study is to analyze the implementation of ESP targeted to foster active learner engagement. The following **objectives** were set to achieve the aim:

1. To examine ESP course descriptions;
2. To identify the ESP learner needs;
3. To analyze methods and activities used in ESP courses as different from those used in General English (GE) courses;
4. To determine job related competences acquired in ESP courses;
5. To explore opportunities for active learner engagement in learning languages for specific purposes and assessment activities.

## 2 Theoretical Background

In his analysis of the current issues for language policy in Higher Education, Kelly (2013) states that teaching a foreign language at tertiary level has to be sensitive and responsive to the changing contexts in society and the labor market. Such responsiveness, or adaptation, as contended by Kelly, may include new materials which "address themes of current concern", better fitting methods which have more focus on group work or independent learning, more use of technological tools, new organizational arrangements with more engagement of students as well as better "involvement of employers and other stakeholders in course development" (pp. 15–16). These observations of Kelly's especially pertain to ESP courses, the fundamental features of which are variability and diversity in terms of content and methodology as predetermined by their purpose to serve the particular needs of students opting for perfection in their different study fields and specific subject domains.

Along the same lines, Paltridge and Starfield (2013) emphasize students' specific needs as the common denominator in the development of the content and aims of ESP courses and single out their main focal points such as "the language, skills, and genres appropriate to the specific activities the learners need to carry out in English" (2013, p. 2). The scholars further raise the main questions to be answered while planning and designing ESP courses, namely "how to identify learner needs, the nature of the genres that learners need to be able to produce as well as participate in, and how we can know that our learners have been able to do this successfully, and, if not, what we can do to help them to do this" (2013, p. 2). Similar questions are

reflected and focused on in numerous studies on ESP origins and development (Hutchinson and Waters 1987), on its implementation, as for instance Belyaeva (2015), Bijeikienė and Meškauskienė (2013) in the context of English for Politics, Bartnikaitė and Bijeikienė (2017) and Juodinytė-Kuznetsova (2015) in the field of Legal English, Dudzik and Dzięcioł-Pędich (2017), Ferguson (2013) and Gutowska (2017) in English for Medical Purposes (EMP) to name a few.

Bijeikienė and Meškauskienė (2013) analyzed the specificity of ESP planning for students in the fields of political sciences and diplomacy. In addition to more universal components of ESP such as specialized vocabulary, terminology and collocations, as maintained by the scholars, students of political sciences and diplomacy have to gain mastery in political discourse analysis in order to be efficient and successful in politics related contexts. Given that political discourse is rich in literary tropes, euphemisms, double talk, indirectness and other linguistic and rhetorical devices (Charteris-Black 2014; Fairclough and Fairclough 2012; Wodak 2009), an ESP course for such students has to provide them with the skills and capacity to cope with these features of political texts. Thus, in their analysis of metaphor and metonymy in an ESP course *English for Politics*, the scholars aimed at investigating students' "awareness of the role of metaphor and metonymy in understanding and producing political texts" as well as their "experience and capacity to identify metaphorical and metonymical expressions in a piece of political discourse" (Bijeikienė and Meškauskienė 2013, p. 91). The scholars discovered that students' theoretical knowledge of metaphor and metonymy as well as students' comprehension of their importance in political discourse were quite satisfactory. Nevertheless, students' capacity to identify and analyze metaphorical and metonymical use in a piece of political discourse was not adequately developed suggesting that ESP courses have to equip students better with sound practical and analytical skills for their future careers.

Bartnikaitė and Bijeikienė (2017) carried out a needs analysis in the context of Legal English. Namely, they interviewed legal practitioners in two Lithuanian law companies and Kaunas district court to examine the adequacy of General English and Legal English skills that the respondents had acquired in tertiary education for their job related tasks. The study showed that up to 30% of the respondents evaluated their receptive and productive skills of General English as inadequate and even 50% indicated that their intercultural communication skills were not developed in tertiary education at all. This finding closely correlates with the findings of Dudzik and Dzięcioł-Pędich (2017) in their analysis of EMP courses where they state that "the notion of intercultural competence is hardly ever, if at all, presented to them [the students]" of medical programs (p. 64).

Communicative competences of Legal English in Bartnikaitė and Bijeikienė's (2017) study, such as using legal terminology, writing and translating legal texts as well as consulting clients orally and in writing, were self-evaluated by the respondents as even worse developed. The respondents especially highlighted their urge for more fluency in oral communication with partners and clients and their need to continuously update and enrich their personal Legal English repertoire. Such results not only propose the necessity to increase the quality of teaching Legal English to

future practitioners at universities, but also accentuate a high demand for the development of students' transversal and learning skills so that they are prepared for future autonomous learning, informal education and personal development. Likewise, Belyaeva (2015) in her study on the organization of ESP curriculum, emphasized the complexity and difficulty of planning an all-inclusive ESP course on the grounds that "future professional roles" (p. 87) of today's students are impossible to be clearly determined while planning an ESP curriculum; thus, students' preparation for lifelong learning is of utmost significance.

## 3 Research Design

A descriptive research was applied in this study which was primarily concerned with the following research question: Do ESP C1/C2 level courses provided at Vytautas Magnus University create opportunities for student active engagement in language learning and its assessment processes, allowing students to acquire independent and autonomous lifelong learner skills?

### *3.1 Methods of Data Collection*

The Mixed Methods Approach (Cresswell et al. 2011; Gilbert 2008) was applied in the research using qualitative followed by quantitative and then again qualitative methodologies to gather and analyze the research data. The qualitative data were obtained through document analysis, i.e. the analysis of 6 ESP C1/C2 level course descriptions with regard to the aims and active learner engagement and using semi-structured in-depth interviews for teachers, followed by collecting quantitative data through questionnaire surveys for students. In total 100 questionnaires were administered to VMU first-cycle and second-cycle students who took four ESP courses in spring and autumn semesters in 2015 and 2016 with the return rate of 78%. The Mixed Method Approach helped to collect more comprehensive data and interpret it from different perspectives, thus increase its validity and enhance understanding of the phenomenon of teaching ESP at tertiary level.

### *3.2 Participants*

The research participants were 78 students of 4 ESP C1/C2 level courses at VMU who returned the filled in questionnaire surveys: *English for Diplomats* (29.5%), *Legal English* (32.1%), *Business English* (26.9%) and *English for Politics* (11.5%). After the student surveys had been analyzed, semi-structured in-depth interviews

were performed with 10 teachers who deliver ESP courses at VMU: *English for Diplomats*, *English for Politics*, *Business English*, *Legal English*, *English for Social Sciences*, *English for Information Technologies*, *German for Professional Work* and *Latin for Lawyers*. Some courses (*Business English* and *Legal English*) are taught by two teachers each other semester and some teachers deliver more than one ESP course, thus in total the teachers provided their opinion on 15 ESP courses. The purpose of the interviews was to obtain teacher information on the research object and clarify some specific issues as well as to obtain more comprehensive data.

As VMU ESP courses are offered at C1/C2 level, the research participants were expected to have advanced English language competences of C1 level, thus they either had completed General English courses of B2 level while studying at secondary school or at the university prior to being enrolled in the advanced level ESP courses; therefore, not surprisingly, 80.8% of the research respondents self-evaluated their current General English language competence as rather good, 15.4% as average and only 3.8% as insufficient.

However, the results of the self-evaluated current ESP language competence were different, as a smaller number of students (61.5%) considered their ESP language competence to be rather good and 34.6% stated that it was average; the same small number of students evaluated it as insufficient (3.8%). With regard to the cycle of study, only six students were the second-cycle students, whereas the rest 72 were the first-cycle students. With regard to gender composition, 63% of the respondents were female students and 37% – male.

## *3.3 Instruments*

A questionnaire for students was prepared for the research study targeted at identifying student opinion on ESP courses taught at VMU. The questionnaire for students contained 13 questions to identify students' language learning needs, current GE and ESP competences, their self-identified differences between these two types of courses, knowledge and skills developed in ESP courses, and student engagement and opportunities for active learning and assessment. There were 3 closed questions collecting demographic data, 5 open-ended questions and 5 questions with Likert-type scales where students had to choose the most suitable variant from 3-items (Yes. Sometimes. Never.) or 4-items (Yes. Not enough. No. I don't know (NA) or Yes. A little. No. NA). The Likert-type scales exhibited balance and symmetry, i.e. they contained equal number of positive and negative values. Furthermore, the semi-structured in-depth interviews were employed to identify teacher opinion on fostering active student engagement, evoke teacher self-assessment of the use of active learning methods and receive teacher comments and explanations on some data obtained from student questionnaires.

# 4 Research Findings

## *4.1 ESP Course Descriptions*

At VMU the ESP course design and descriptions are based on a thorough analysis of literature on ESP, talks with discipline teachers and interviews with university alumni with improvements made on the basis of the comments received from the Attestation of Foreign Language Subject Committee; all courses have been attested till 2019. Analysis of course descriptions of 6 ESP C1/C2 courses provided at VMU (*Business English*, *English for Art*, *English for Diplomacy*, *English for Law*, *English for Politics* and *English for Social Sciences*)[4] shows them to have a common aim, namely, improving students' receptive and productive skills through:

1. building up students' subject related vocabulary (e.g. "broadening specific vocabulary", "building on political concepts and the specialized political vocabulary", "acquiring appropriate terminology and the specialized vocabulary", learning to "use relevant legal terms and lexis");
2. reading, listening to, analyzing and discussing subject related texts (e.g. "political texts and events", "culture related texts and issues", "legal discourse", "various authentic texts on issues in social sciences");
3. developing written communication skills (e.g. "writing politics related analyses, practicing the relevant discursive strategies and brushing up the relevant grammar", "writing analyses of cultural events, learning and practicing the relevant grammar", "gaining the ability to write clear and succinct legal texts"),
4. developing oral communication skills (e.g. learning "to present effective oral argumentation in a variety of legal settings", improving "language competence necessary for formal and informal communication in profession related fields", participating in "ongoing, integrated business simulations, which present everyday challenges for the motivated business person in the fields of intercultural communication and social activities, organizational behavior, human resources management, financial management, marketing", "performing and presenting a research").

Thus, on the basis of the analysis of the aims and content description, it can be presumed that ESP courses create possibilities for active student engagement as they focus on the analysis and discussion as well as communication skill development. Furthermore, most English C1/C2 level courses indicate the use of active learning methods directly, by focusing on the development of students' English language for specific purposes skills through individual, pair, group and class work, self-study tasks, practicing the language in simulated real-life situations, in SANAKO lab and virtual MOODLE environment (on-line activities, synchronous and asynchronous conversations and discussion forums, interactive tests and

[4] http://uki.vdu.lt/courses/

exercises). However, no direct or indirect indications of problem solving and transversal skill development were found in the analyzed course descriptions.

Aiming at sharing the best practices of ESP provision at VMU, the research further focuses on practical implementation of ESP courses, starting with the needs analysis based on two sources: the opinion of students (questionnaire surveys) and teachers (interviews).

## *4.2 Needs Analysis*

Given that most of English C1/C2 level courses are offered as electives[5], it was important to find out what determines the students' choice of an ESP course or, more exactly, what their needs were. It was assumed that motivation leads to more active involvement of students into the learning process.

The respondents' answers to the open question on their needs differed. More than half of the respondents (53%) stated that they needed a C1/C2 level course as a study program requirement. They further justified their choice of this particular ESP course by adding some specific reasons which were mainly related to their major: e.g., "I am studying marketing so Business English seemed to be the right English course to choose" or "I'm studying political sciences therefore a specific course related to this field was the main motive to choose the course". Other respondents expressed their intention to enrich their communication skills relevant to a particular study field, as for instance, English speaking and writing skills in *English for Diplomats* or to acquire new knowledge in *Legal English*. Yet another group of respondents opted for more general communication skills such as to improve "skills profoundly and gain new competences and approaches". There were respondents who intended to continue learning the language with an urge for more practical skills: a choice of Business English "as it is practically useful in life". Finally, some respondents chose an ESP course because of the teacher, like in the following case of selecting *Business English*: "the main reason of my choice was the lecturer. She is very professional, flexible and objective at the same time". In general, quite a high percentage (21%) of the respondents mentioned a lack of communication skills and "felt a need to further refine" them.

In addition to focusing on the students' perspective, the present study also aims at discovering the LSP teachers' attitudes regarding the needs of students who chose their LSP courses. The opinion of the teachers – research respondents – on the needs of their LSP students largely iterated the students' opinion by simultaneously providing responses that are more comprehensive. In teachers' view, students need to gain specialized vocabulary, e.g. "Students can communicate in general English quite well but have insufficient vocabulary in the specific area of their major, in

[5] *English for Diplomats* is compulsory for students of the study program Diplomacy and International Relations, Legal English is compulsory for Law program students. However, students from other study programs regularly take both these courses as elective ones.

particular, business or law". They also lack knowledge of and especially experience in "using more complex grammatical structures, which are encountered in difficult authentic texts and hinder their comprehension, e.g. contract texts in Legal English". Students who already work in the areas related to their studies (business enterprises, educational institutions, etc.) and have to use English in different work related situations lack practical skills in the application of their theoretical knowledge, thus they need "to improve their ESP competences in order to perform job tasks better and get promoted". Moreover, teachers believe that in LSP courses students opt for improving not only their practical communication skills but also their transversal skills to become more competitive in the labor market, e.g. "intend to prepare for their professional career better", "seek for broader opportunities in the prospective professional activity", or "have ambitions to better career prospects". Finally, there is a category of students who take their courses for more general reasons, e.g. "some simply like the English language" or they generally want to "improve their English".

### *4.3 Specific Features of ESP in Comparison to GE*

Research on ESP acknowledges that ESP makes use of the underlying methodology and activities of the discipline it serves (Dudley-Evans and John 1998). Nevertheless, it is often the case that language teachers delivering ESP courses use learner-centered active language teaching methods which involve active learner engagement in the learning process and may proceed face-to-face as well as in the virtual environment. The students and teachers of the present study were asked to evaluate peculiarities of ESP courses and compare them to GE courses along the following parameters: teaching and assessment methods, activities, forms of learning and textbooks (see Fig. 1).

The research respondents-students were asked to express their opinion on all listed variables by choosing the suitable variants from four item Likert-type scale. In general, positive views towards the given statements seem to dominate all over the given options. According to the students, the most obvious feature of ESP courses is "studying specific, specialty related words and expressions"; the absolute majority (even 92.3%) of the respondents marked this option. In addition, 85.9% assert that ESP courses offer "more opportunities to express their opinion and give suggestions". Two thirds of the respondents find "analysis of complicated specialty texts" and "discussions on various work-related topics" (74.7% and 73% respectively) as other important features of ESP courses.

Considering different methods used in ESP, 67.9% of the respondents agree that different methods are applied and half of them (53.8%) admit that ESP courses offer analytical tasks which require the use of higher order thinking skills (27% chose the option "a little") and more creative tasks. Almost half (46%) of the students agree that ESP courses offer more pair and group work but one third of them disagree with this opinion (28.2%) and 19.2% agree only to some extent.

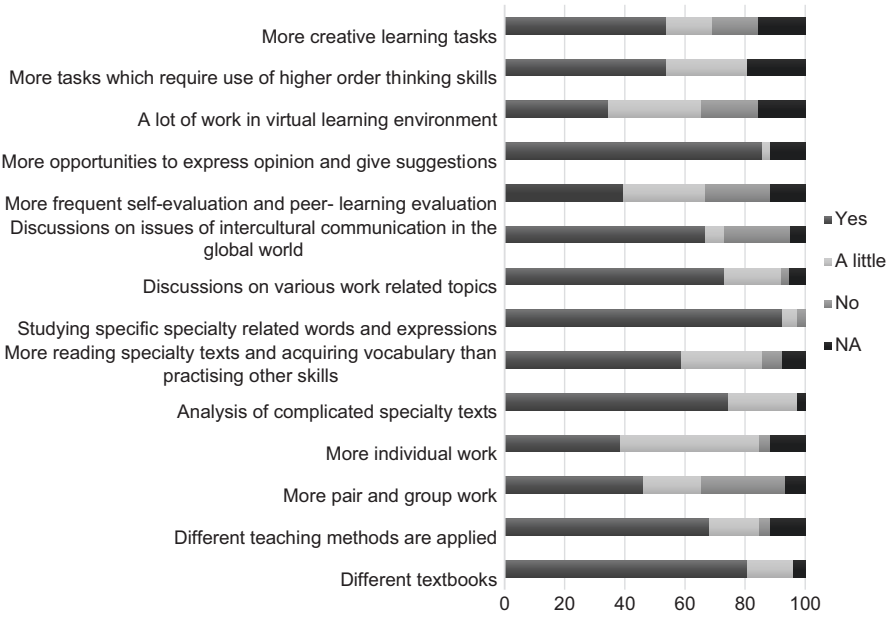


**Fig. 1** Students' opinion on differences between ESP and GE courses

Individual and independent work is another feature which evokes students' different opinions: 38.5% of the respondents consider that ESP courses provide more individual work, whereas more students (46.2%) admit that there is only a little more individual work in an ESP course. Similar results are found while evaluating two other features: providing opportunities for self-evaluation and peer evaluation and work in virtual learning environment. With regard to the former, almost 40% of the respondents agree that self-evaluations and peer-evaluations are more frequent in ESP courses, but almost one fifth of them (26%) are of the opinion that these courses provide only a little more opportunities for self- and peer-evaluation; whereas 21.8% of the respondents disagree that there are differences in this respect. What concerns independent work in virtual learning environment (an indispensable element of teaching all language courses at VMU, including ESP), one third of the students agree and almost the same number (30.8%) agree to some extent that ESP courses provide more assignments for independent work in Moodle virtual environment. Only 19.2% of the students see no difference between the General English and ESP courses with regard to this feature. Finally, answers to open questions, which were also provided to the students, show that students find ESP courses "more specific and deeper than general English ones". They also appreciate the fact that ESP courses are more concerned with practical skills, e.g. "ESP courses are more oriented to the functions that I will need to use in real life", and that they are helpful to those who study in EMI programs, e.g. "we are studying the subject matter only in English".

Teachers' opinion analysis shows that teaching methods and activities at large depend on the subject specificity, for instance, the courses of *English for Politics* and *English for Diplomats* require competence in recognizing, comprehending, analyzing and using rhetorical means such as metaphor, metonymy, irony, rhetorical questions, etc. because of such specific features of political discourse. Another type of specificity, namely, its specific legal vocabulary and terminology, is a distinguishing feature of *Legal English*. In *Legal English*, it is very important that students be able to differentiate between a mundane and a legal meaning of a word. *German for Work* involves assigning practical tasks and problem solving activities to students the solutions of which require addressing specialists in German enterprises in Lithuania; thus students work in teams practicing the language in real communication encounters. *English for Social Sciences* employs jig-saw activities, simulated press-conferences where students justify and defend their positions, perform small scale research drawing connections among ideas, select, analyze, graphically present and interpret data, formulate recommendations and design models of future actions. *Latin for Lawyers* focuses on the analysis of specific lexical connotations and lexical variances as well as on the use of aphorisms, maxims, sayings, statements and clichés; therefore, more individual analysis and synthesis are applied.

## *4.4 Job Related Competence Development in ESP*

In order to identify if the aims of an ESP course have been met and if students have achieved the targeted learning outcomes, the research respondents-students were asked to self-evaluate if they have acquired job related knowledge and skills during ESP courses.

The absolute majority of the students (92.3% and 88.8% respectfully) have a unanimous opinion with regard to two job related competences: they have expanded job related vocabulary as well as independent and autonomous learner skills, i.e. now they are capable of learning /developing their ESP language skills on their own in their lifelong learning endeavors (see Fig. 2). About 70% of the respondents think they have gained experience to discuss various job related issues, and over 65% of the respondents have acquired job related English language knowledge and job related communication skills, but over 30% of them feel the lack of such knowledge and skills and one third of the respondents (30.8%) feel prepared not enough to communicate in English efficiently at the workplace. 23% of them admitted having acquired these skills but not enough, and one tenth (11.5%) evaluated their preparation to communicate in English at the workplace negatively.

Students' opinions diverged mostly while self-evaluating the development of problem solving skills (yes – 38.5%, not enough – 26.9%, no – 23.1%). Another aspect which received almost half of negative evaluations was learning complicated grammar structures of ESP (23.1% – not enough, 11.5% – no, 11.5% NA).

As some students study and work at the same time, they were asked to mark the situations where they apply ESP competences at the workplace (see Fig. 3). The

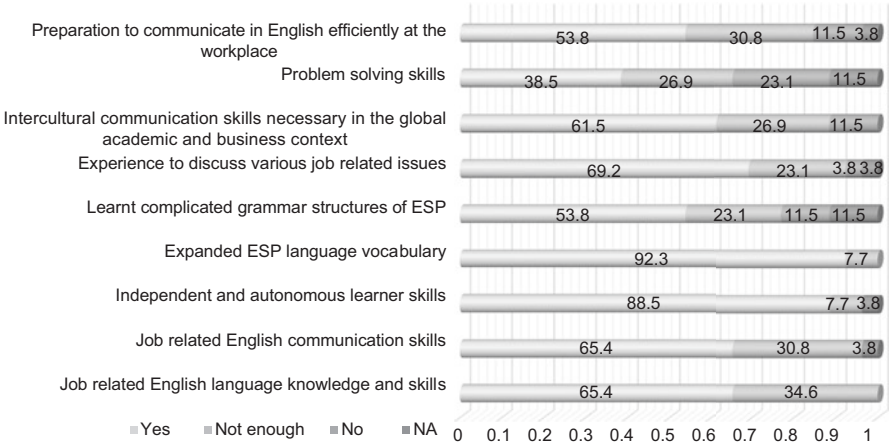


**Fig. 2** Job related competences acquired by the students at the end of an ESP course

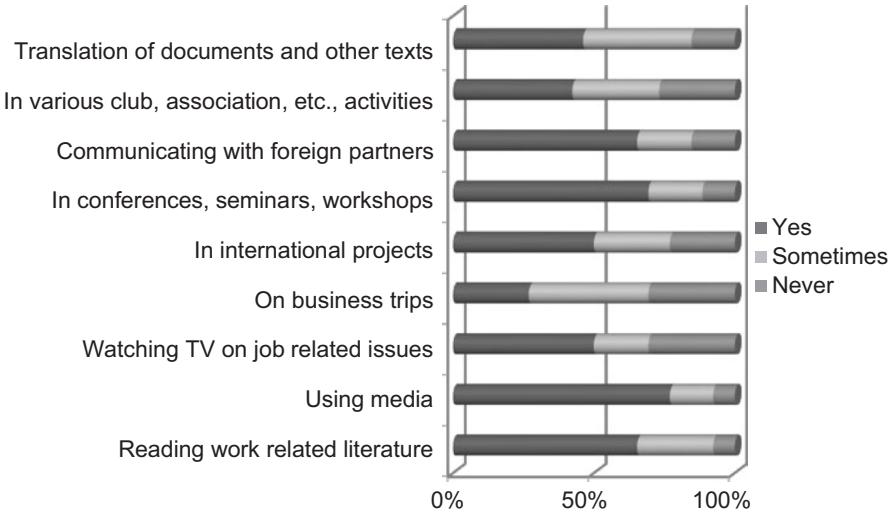


**Fig. 3** ESP competences already applied at the workplace

students mostly apply competences gained in ESP courses using media (76.9%), in conferences, seminars, workshops (69.2%), reading work related literature and communicating with foreign partners (both 65.4%) and watching TV on job related issues (50%). Fewer than half of the respondents use knowledge and skills acquired in ESP courses in various club and association activities and for translating documents and other texts. Only one fourth use these skills on business trips.

Teachers asserted that the employed students are more concerned with the course content and skill development; they are more self-critical evaluating their current knowledge and skills and often request to revise some grammar topics (for instance,

tenses or articles) which are usually not analyzed in depth in advanced level courses as they focus more on perfecting students' English language skills.

As regards the development of intercultural communication skills necessary in the global academic and business context, the research results are rather positive in contrast to other research: it was found that 61.5% of the respondents-students feel they have acquired intercultural communication skills necessary in the global academic and business context, and one third of the respondents (26.9%) feel lack of such skills ("not enough").

## *4.5 Opportunities for Becoming Active Learners*

It is assumed in this study that ESP courses should aim at providing opportunities for students to become active learners; therefore, it was important to find out if the research respondents – students feel themselves as being active participants of the study process. Almost two thirds of the students (61.5%) self-evaluated themselves as being active participants in the learning process and one third of them (34.6%) evaluated themselves as active, but not enough (see Fig. 4). Three students did not provide any answers to this question. Even 80.5% of the respondents admitted being encouraged to participate actively by the teachers and that their opinion and suggestions were appreciated in class.

Learning and developing English used at the workplace (specialty language) is a lifelong learning activity. Thus, the students were asked if they have acquired useful language learning strategies in this course (efficient ways how to learn, e.g. vocabulary, etc.) as necessary components of independent and autonomous learner who can continue learning beyond the class and throughout their lives. Even 69.2% of the respondents admitted having acquired such strategies with 15.4% who feel they

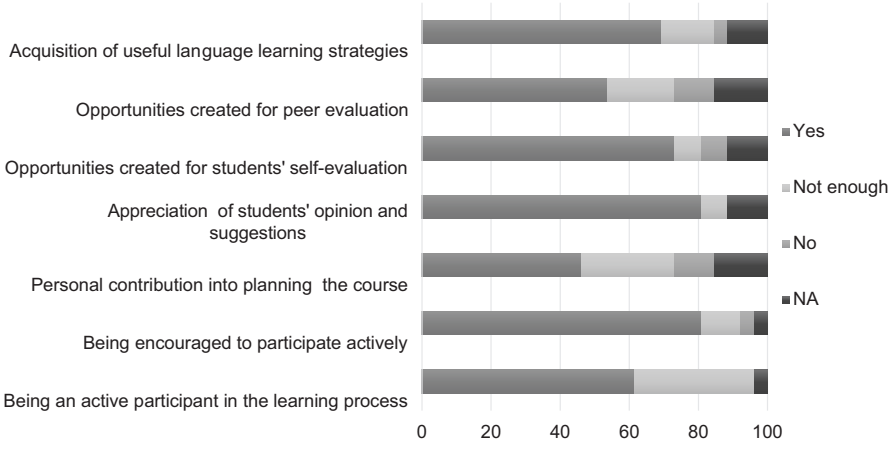


**Fig. 4** Students' active engagement in ESP courses

have not acquired enough of the useful language learning strategies. The majority of the students are satisfied with the opportunities created for them to self-evaluate themselves (73.1%), but only half of them were satisfied with opportunities created to evaluate their peers (53.8%), 19.2% considered having not been given enough of such opportunities and even one tenth of the respondents (11.5%) denied having such opportunities in their ESP course. The opportunity to personally contribute to planning the course, e.g., suggesting topics for analysis or discussion, was evaluated lowest by the students, but quite moderate in general, as less than half of them (46.2%) admitted contributing to course planning with almost 27% who said "not enough".

Teachers support the students' opinion on creating opportunities for active student engagement in course planning as they see it as a possibility to better adhere the course syllabus to the students' needs and as an opportunity to develop active learners who assume responsibility for their learning. In *English for Politics* courses "students' needs and suggestions are taken into account more, particularly, when groups are multicultural or when students from different specialties join the group". *English for Social Sciences* course teacher provides opportunities for students to discuss the course syllabus and make some amendments depending on their needs, i.e. suggest topics for discussion and analysis to be included in/excluded from the course syllabus. Students can also choose topics, material and form for their individual or pair presentations.

## 5 Discussion and Implications

The document analysis, namely, the analysis of ESP course descriptions, has revealed that most English C1/C2 level courses aim at development of subject specific vocabulary and work-related oral and written communication skills as well as other receptive and productive language skills. As far as the means for active learner involvement are concerned, they also include the use of active learning methods (such as group and pair-work) to engage students into active development of English language for specific purposes skills in face-to-face and virtual learning environments. However, the development of transversal skills (including problem solving, etc.) in the course descriptions could be more elaborated so that the preparation for lifelong learning through active learner engagement would be predetermined and justifiably expected by the learners while joining the course.

As the investigation of the needs analysis revealed, students' and teachers' opinions converged: although each second student chose an ESP course because they had to take a C1/C2 level course, but their choice of specific ESP course shows they were motivated to upgrade their communication skills in a particular field of studies. Thus students' active engagement in the study process could have been presumed.

Comparing the students' opinion with that of the teachers on specific features of ESP in comparison to General English courses, it is evident that both teachers and students share the same ideas except for some incongruences with regard to the

following activities: individual work, cognitively demanding problem-solving tasks which develop students' higher order thinking skills as well as self-evaluation and peer-evaluation. All the interviewed teachers have a more favorable opinion with regard to these activities which require active learning. First, teachers consider that ESP courses require more individual and independent work, whereas the students' opinion on this issue is inconsistent. When teachers were asked to provide reasons for such divergence in student and teacher opinion, the following assumptions were made: "some students might have studied a lot independently in lower levels of English and therefore do not see much difference here"; "frequent discussions, debates and pair/group work activities of ESP courses may take less time to prepare for some well-read on the subject and savvy students" or "class and group work prevail in advanced levels of English so students might not include homework which most frequently requires individual and independent work".

Regarding the second aspect, teachers assumed that their LSP courses developed students' problem-solving skills as they were created opportunities to negotiate and participate in business simulation and similar activities, still research respondents-students' satisfaction with the development of such skills was low. Analyzing teacher opinion on opportunities provided for self- and peer-evaluation, the majority of teachers admitted applying both formative and summative assessment methods in their ESP courses. However, some teachers indicated using more traditional methods of assessment such as a test or revealed that they were not sure about how to provide students with opportunities for self- and peer-evaluation. Consequently, the teachers of the Institute of Foreign Languages had an opportunity to participate in the Erasmus + project FAB[6] – FAB – *Formative Assessment for Foreign Language Learning and Teaching in Higher Education* – an international educational project, financed through European Union funds under the Key Action 2: Cooperation for innovation and the exchange of good practice in 2015–2017. The project aimed at improving the quality of language instruction through providing the language teachers with suitable formative assessment tools to evaluate speaking skills. A number of teachers participated in workshops where they gained theoretical knowledge, integrated formative assessment tools in their language teaching lectures and observed colleagues instructions nationally and internationally where they gained practical skills on integration of formative assessment.in language teaching, including teaching ESP (see more https://faberasmus.org/).

As most of the research respondents-students admitted having expanded their job-related lexical domain and acquired independent and autonomous learner skills, it can be assumed that teachers aimed and succeeded at fostering active learner engagement by using various methods which require taking responsibility for task performance on the part of the learners. On the contrary, problem solving skills, although not indicated in course descriptions but mentioned as targeted at by some teachers, were evaluated the lowest by the research respondents-students. In addition to that, one third of the students admitted having acquired not enough job related English language knowledge and communication skills and feeling not enough prepared to communicate efficiently at the workplace; over one tenth of the respondents feel not having acquired such skills at all. In view of these two lowest

ranked results, it is possible to assume that even having gained high competences of English, as is also shown by the results, students might not feel secure about the sufficiency of this competence for their future jobs. Moreover, the results also suggest that students are also not sure about the acquisition of transversal skills as is evidenced by the low score of a problem-solving skill.

Although the comparison of responses across different ESP courses was not in the focus of attention in this study, however, the responses to the question on development of intercultural communication skills diverged at large. Therefore, the responses to the question of development of intercultural skills were compared course-wise and significant differences were revealed: the respondents of *Legal English* exhibited lack of acquisition of intercultural communication skills (only 24% were satisfied with the acquired skills) and even 44% felt they had not acquired enough intercultural communication skills and 32% admitted not having acquired such skills at all; whereas the responses of students of other courses were significantly more positive: almost 80% of students of other ESP courses admitted having acquired such skills, and one fifth – not enough. Implications can be drawn that *Legal English* courses are more focused on preparing students for national workplace and that issues of intercultural law and job-related skills for international workplace should be included in the curricula.

Teachers have also drawn attention to the fact that the work experience that some students already have when they take an ESP course may serve as a strong motivating factor for the students to become more active learners. These students show more awareness regarding the skills they have not developed yet that they assume they will need at the workplace and may have devoted more of the personal contribution to the course arrangement. Moreover, as some of the teachers have maintained, ESP is far from being just a language course, but rather a doorway to students' specialty field which offers opportunities for them to actively search for the favorite niches of their field of studies and to choose topics for presentations, course papers, group discussions and other personal initiatives in the course. On the other hand, however, such options as students' self- and peer-evaluation or their opportunities to influence the arrangement of ESP course content do not demonstrate much of teachers' support, even less support to these categories permeates through teachers' scarce comments on the means how such evaluation or influence can be achieved.

## *5.1 Pedagogical Implications*

Despite numerous examples of successful implementation of ESP at VMU, there is space to zoom in and to spot the aspects in need of improvement. Given that the main postulate of the present study is learners' active engagement in ESP classes, it is namely the skills that relate to students' active participation in the learning process and their development of transversal skills that pose the most concern here.

First, the relatively low scores of both the students and the teachers as well as the teachers' limited comments in the category of peer-evaluation suggest that students'

cooperation, initiative and collaboration can be and must be boosted by developing this skill. Teachers also would benefit from more awareness of application of formative assessment tools, expanding both their theoretical knowledge and practical skills.

Furthermore, the relatively low score in the category of *preparation to communicate in English efficiently at the workplace* shows that, having gained the robust competence of ESP in their respective skills, students do not feel confident and assured about being effective communicators of English in their professional life. This implies that teachers should revise the content of the courses by focusing more on workplace related problems and situations. As one of the possible remedies, more adherence to the genre analysis, as the source of the authentic input into the learning and teaching process, could be opted for (cf. Bhatia 2004; Paltridge and Starfield 2013). Soruç et al. (see chapter "Listening Comprehension Strategies of EMI Students in Turkey" in this volume) suggest "schema building activities", "well prepared by the lecturers before the class considering students' different needs in their major."

Above all, the relatively poor support in the category of problem solving evidences more need of attention to the development of transversal skills in general.

Finally, for the arrangement of full-fledged quality ESP courses, the integration of the expertise of the professionals in the study field and the stakeholders relevant to the study field is of utmost significance and should not be neglected. This idea is also supported by Soruç, Dinler, and Griffiths, chapter "Listening Comprehension Strategies of EMI Students in Turkey" in this volume who see the collaboration between subject teachers/lecturers and language teachers particularly useful "while preparing course content or classroom materials, especially on the language level of the materials".

## 6 Conclusions

We argue in the present study that ESP teaching can be highly enhanced through a more *learner-centered approach* which takes learner specific needs into account and bases the course on a range of *active learning and teaching methods* integrating independent, pair and group work in *real and virtual learning environments* through more *cognitively demanding problem solving* tasks which develop students' higher order thinking skills. Moreover, we believe that ESP fits especially well within the *Liberal Arts and Sciences* model like the underlying model of VMU studies and research. Under the principles of *Liberal Arts and Sciences*, a student's education in a selected study field is embedded in the development of his/her interdisciplinary competences, humanistic values, transversal and communication skills, creativity and initiative along with learning foreign languages. In other words, the *Liberal Arts and Sciences* model can be assumed to create favorable conditions for the implementation of ESP that integrates the above-mentioned aspects.

The survey analysis identified ESP students' needs, assessed the efficiency of active learning methods and activities used in the ESP courses, acquired job related

competences and opportunities provided for active student engagement in learning. The analysis generally has rendered positive results as to how ESP competences are developed at VMU and how they contribute to fostering students' active engagement into the learning process. The large majority of questions in the students' quantitative survey display positive answers. High scores in such categories as the *appreciation of students' opinion and suggestions* or students *being encouraged to participate actively* in the learning process presuppose favorable conditions for learners' active engagement in ESP courses. Along the same lines, acquisition of the *expanded ESP language vocabulary*, also ranked high by the students, shows that students acquire a good foundation for the use of English at the workplace. Moreover, a high score in the category of *independent and autonomous learner skills* can lead to students' better lifelong learning preparation and capacity.

All in all, it is evident that ESP courses provide opportunities not only for acquisition of subject related vocabulary, development of receptive and productive skills, but also – which is of utmost importance while preparing students for efficient work in the global market – for the development of their transversal skills. Students learn to negotiate and collaborate, to arrive at particular solutions and express them, to support their opinion with sound arguments on the specialty related topics and, even gain more insights into the subject matter of their relevant study fields.

We dare trust that the findings of the present study will contribute to the field of ESP methodology by providing insights into efficient ESP teaching and learning activities and methods. We also hope that the findings will add to the research on ESP that targets the major aim of empowering students to become successful and efficient in global academia and in global labor market.

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# Are We Really Teaching English for Specific Purposes, or Basic English Skills? The Cases of Turkey and Latvia

**Servet Çelik, Anna Stavicka, and Indra Odina**

**Abstract** English for specific purposes (ESP) has evolved as an important sub-field of English language education to meet the career-related needs of non-native speakers of English in a wide variety of contexts. As such, ESP instruction in specialized subject areas ranging from vocational (e.g., tourism and hospitality) to professional (e.g., international law or banking) to academic (e.g., thesis and dissertation writing) is often integrated in the training and degree programs offered at higher education institutions. However, the ability of these institutions to provide adequate ESP instruction has often been called into question, with critics indicating that insufficient resources and planning, lack of teacher preparedness, and low motivation of students result in courses that cover little more than basic language skills. With these concerns in mind, the researchers carried out the present study to examine the circumstances at two state-run universities in Turkey and Latvia, calling on 12 ESP instructors to describe their views in terms of their institutional environment, their level of training and preparedness, and their individual efforts to overcome the challenges they faced in their practice. The results demonstrate that institutional problems (e.g., poor planning and management and overcrowded classrooms), students' lack of basic English skills, limited access to specialized teacher training and difficulties with subject-area terminology created obstacles to carrying out more than basic English instruction. In light of the results, some recommendations are offered with respect to program design, teacher training and teacher motivation.

**Keywords** Business English · English for Academic Purposes · English language teaching · ESP · ESP teacher training · Professional English

S. Çelik (✉)
Karadeniz Technical University, Trabzon, Turkey
e-mail: servet61@ktu.edu.tr

A. Stavicka · I. Odina
University of Latvia, Riga, Latvia
e-mail: anna.stavicka@lu.lv; indra.odina@lu.lv



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## 1 Introduction

The status of English as a global language has been firmly established, and it is well known that English as a foreign or second language is a core aspect of education in the majority of countries where it is not spoken as learners' mother tongue. In most educational settings where English is taught, the aim is to provide students with a foundation of general language skills that will – in theory, at least – allow them easy access to a world in which English is viewed as a key to success. Yet, as Bracaj (2014) points out, education in general English may often be *too* general. On the one hand, English is emphasized as the language of international politics, trade, technology, scientific research, and so on – all areas that point to very specific language needs. On the other hand, English language teaching programs typically address a very broad range of skills, leaving learners with basic knowledge about its lexis and grammar, as well as the ability to communicate in a variety of common situations… but without the high-level skills that would support the complex, specialized interactions that take place in any of these spheres.

English for Specific Purposes (ESP), as a sub-field of English language education, has evolved precisely to address this concern (Hyland 2007). As Dudley-Evans and St. John (1998) explain, the role of ESP is to: (1) meet the needs of a group of learners who require English skills related to a specific non-language discipline (e.g., business, law, medicine, academics, and so on); (2) make use of the underlying methodologies and activities of the discipline it serves; and (3) center on the language appropriate to these activities in terms of the grammar, lexis, register and discourse related to that discipline (Dudley-Evans & St. John, pp. 4–5). In addition to these "absolute" features that are considered as indispensable to ESP, several optional or "variable" characteristics have also been suggested; for instance, that ESP learners are typically adults, and that they generally have at least some level of background knowledge in English.

Ideally, when properly implemented, these need-oriented characteristics should enable ESP learners to acquire the specialized language skills necessary to discuss the interests of shareholders in the boardroom; or engage meaningfully with peers at an international educational conference; or explain the features of a new technological tool to a potential investor. In many instances, courses in ESP may indeed provide these benefits, in line with Hyland's support for the field as a dynamic and thriving aspect of English language education. However, in one of the contexts in which ESP courses are most frequently implemented – institutions of higher learning – these expectations often fall far short of reality (Chen 2011; Hoa and Mai 2016; Suzani et al. 2011; Ünal 2014).

### *1.1 Challenges in Implementing ESP in Higher Education*

Higher education institutions in non-English speaking countries commonly offer instruction in English for specific purposes in consideration of students' expected language needs (Bracaj 2014); whether vocational (e.g., a career in tourism and hospitality); professional (e.g., international banking); or academic (e.g., educational research) (Charles 2013; Thompson 2013). In some cases, these courses may deliver on their intent; however, extensive problems related to student motivation and performance, lack of appropriate materials, issues with teacher quality, program design and other institutional factors are often seen as major constraints in the successful delivery of ESP instruction in universities and professional schools (Chen 2011; Flowerdew 2012; Hoa and Mai 2016; Suzani et al. 2011; Ünal 2014). The ability of teachers to incorporate the teaching of language skills with instruction in subject-area content has also been raised as a concern (Fujimoko-Adamson and Adamson 2017).

**Problems Related to Student Motivation and Performance** In spite of the high level of importance placed on English language learning, not all students have internalized the connection between English ability and success in their future careers. Often, they may feel that there is little chance they will ever use their language skills outside of the classroom; and thus, language-related courses may be seen as a burden, rather than an opportunity (Hoa and Mai 2016). In addition, Hoa and Mai (2016) note that in contexts such as Vietnam, students who are enrolled in ESP courses often lack basic English skills and are simply not ready for language instruction in their area of specialization. Ünal (2014) similarly points out that in ESP classes in Turkish higher education, learners typically come from a range of different language learning backgrounds and experiences. As such, students who have not studied English for years may be enrolled in a language course alongside students who possess a high level of proficiency. Under these circumstances, lower-level students may become frustrated and anxious, while high-performing students may be bored and undermotivated; and teachers may struggle to balance the disparate needs of learners in their lesson planning.

Furthermore, traditional teacher-fronted instructional practices, often the norm in EFL contexts, are seen as contributing to poor learner engagement (Mačianskienė and Bijeikienė 2017). Soruç et al. (2017) point to an additional concern relating to traditional instructional practices, noting that learners themselves are often accustomed to teacher-centered instruction and lack the autonomy and self-motivation needed to master complex language skills in an ESP setting.

**Lack of Appropriate Materials** Successful teaching of English relies, in part, on the availability of appropriate teaching tools. However, learning materials such as English teaching texts that address a specific subject area can be difficult to find in many ESP contexts (Hoa and Mai 2016). In such cases, it is not unusual for teachers to employ basic English teaching texts that cover general grammar and vocabulary

topics (Hoa and Mai 2016; Maruyama 1996), rather than materials that are specific to their learners' subject area; and to focus their instruction accordingly.

**Issues with Teacher Quality** A perennial concern in all aspects of English as a foreign language education is that of teacher quality (Çelik Submitted; Özer 2005; Özmusul 2011), and ESP is no exception. Inadequate teacher training, lack of meaningful professional development opportunities, low pay, and heavy workloads have often been cited as contributing to this ongoing problem (Büyükkantarcıoğlu 2004; DeVillar and Jiang 2006; Kızıldağ 2009). These issues are further complicated in ESP settings, where instructors ideally require not only the pedagogical knowledge and practical skills to teach English as a foreign language, but also a working knowledge of the subject area in question. Individuals who possess all of these characteristics to a sufficient degree are rare, and as such, it is often the case that the instructors assigned to teach ESP courses are either English specialists who have little knowledge of the given subject area; or subject area teachers who know some English but who have not been trained in the teaching of foreign languages; or individuals who speak English but are generally inexperienced in teaching and are not aware of the appropriate methods for delivering ESP instruction (Hoa and Mai 2016).

**Institutional Factors** Aside from shortages of qualified instructors, which may lead to under-prepared individuals being appointed to teaching positions, a number of other factors may pose significant challenges to the successful implementation of ESP on an institutional level. Inadequate planning or poor understanding of the resources needed may result in problems such as lack of a coherent curriculum (Chen 2011; Gatehouse 2001); inconsistency in the level of quality from one course to another (or even in the same course taught at different times); insufficient time allotted for ESP courses (Ünal 2014); and overly crowded classrooms (Suzani et al. 2011).

## 2 How ESP Is Carried Out in Higher Education: Examples from Turkey and Latvia

With these general concerns in mind, it is worth taking a closer look at how ESP instruction is carried out in real-life educational contexts. For this purpose, we will focus on the cases of Turkey and Latvia, two countries that are very different in terms of their history, political structure and culture, but in which English language education plays an important role. In order to clarify the approach to English instruction in each country, some general information on the educational frameworks is given, particularly with reference to higher education. Afterward, the implementation of ESP is described.

## *2.1 Turkey's Case: The Status of English in Turkish National Education*

In the Republic of Turkey, instruction in English as a foreign language (EFL) has been included in the formal educational process for decades; particularly since the end of the Second World War and the formation of the NATO Alliance, of which Turkey is a member. Beginning in the 1950s, English was established as a mandatory subject at the secondary level (Kırkgöz 2007), both for high school students preparing for university education and for students learning a trade or profession in vocational schools. However, due to widespread inconsistencies in the content that was taught, the materials used, the number of hours of instruction, and issues with teacher quality, large numbers of learners struggled to achieve an adequate level of proficiency.

Given the growing implications of English in terms of the country's economic and sociopolitical success in a globalizing world, this concern – along with other systemic problems – led the Turkish Ministry of National Education (MoNE) to institute a major reform of the public education process. Part of this restructuring, which was put into effect in 1997, included the addition of English as a compulsory subject for all students from elementary school onward. Learners were now required to attend EFL courses starting in the 4th grade, continuing until their graduation from high school in the 12th grade (Kırkgöz 2007, 2009; Kırkgöz et al. 2016). At the same time, a new curriculum, based on a communicative model, was adopted for implementation in all schools in order to maintain consistency of instruction (Kırkgöz 2007, 2009).

With these measures, it was expected that the overall English language proficiency of Turkey's students would improve. However, ongoing deficiencies in learner outcomes have prompted further attempts at reform: once, in 2005, with a revision of the EFL curriculum; and again, in 2012, with another major overhaul of elementary and secondary education. This most recent, comprehensive action had a particularly significant impact on the way that English language instruction is delivered, as the age for beginning formal schooling was decreased from 6–6½ years to 5–5½ years, and at the same time, the starting point for compulsory English learning was lowered from the 4th grade to the 2nd grade of elementary school. The net result is that Turkish children now begin learning English at the age of 6–6½ years; and they continue to receive EFL instruction until graduating from high school (Kırkgöz et al. 2016). Afterward, students who elect to continue their education may enter a 2-year vocational school – a tertiary-level institution where they are prepared for work in a trade or profession (e.g., nursing, tourism and hospitality, business, and so on); or they may enroll in a 4-year bachelor's degree program. In either case, they continue to receive instruction in English throughout their training or studies.

**Where ESP Fits In** At the elementary and high school levels, students follow the English language curriculum prescribed by the Ministry of National Education (Kırkgöz 2007; Kırkgöz et al. 2016). However, at the tertiary level, English

instruction varies according to program type and field of study. As outlined in the British Council's's (2015) report on the status of English in higher education in Turkey, 4-year university programs may be administered through either English-medium or Turkish-medium instruction (EMI or TMI, respectively). Students who are entering an EMI program are required to take a standardized English achievement test. Those who do not achieve a satisfactory score are required to attend what is known as a preparatory year, during which they receive intensive instruction in basic English skills prior to beginning their regular program of study. Then, throughout the remainder of their undergraduate term, their coursework is conducted with English as the medium of instruction. At the same time, they may continue to receive direct instruction in English through ESP courses that are aligned with their intended careers (e.g., psychology, medicine, law, engineering, and so on). Students enrolled in TMI bachelor's degree programs receive instruction in the Turkish language. However, they may choose to take ESP courses as electives within their discipline, since English skills are viewed as essential in virtually every field. Students in 2-year vocational programs may likewise enroll in ESP courses specific to their intended trade or profession (British Council 2015).

**Who Teaches English as a Foreign Language in Turkey?** English courses in elementary- and secondary-level Turkish schools are generally taught either by teachers who have successfully completed a 4-year English language teaching program (Karakaş 2012) or by graduates of other English-related fields (e.g., English Language and Literature, among others) who have obtained a pedagogical teacher education certificate. In higher education, teachers of English as a foreign language may also possess one or the other of these qualifications, but this is not required; anyone who holds a degree in an English-related field may become an English lecturer, whether or not he or she has training or experience in teaching.

**The English Language Teacher Training Process** As Karakaş (2012) notes, the majority of English language teachers in Turkey receive their training through 4-year teacher preparation programs administered by university faculties of education. All teacher candidates within a particular program follow a similar curriculum. There is no differentiation based on the type of courses they will eventually teach, whether general English, English for specific purposes, or otherwise. Nor is there any variance according to whether candidates will teach at the elementary, secondary or higher education level. Furthermore, there is a high degree of uniformity in English teacher training from one university to the next, as Turkish universities are centrally controlled by the Yüksek Öğretim Kurulu (Council of Higher Education, or CoHE), (CoHE 2014; Yüksel 2012), which specifies requirements for teacher training programs.

Under CoHE oversight, individual teacher education departments do have some latitude in terms of structuring their courses; the content and materials may vary depending on the department and the discretion of individual instructors; and all programs are required to offer electives constituting a minimum of 25% of their courses. However, as Karakaş (2012) explains, all prospective teachers are expected to complete certain core requirements. For instance, first-year students solidify their

English language content knowledge and skills through courses such as Contextual Grammar, Advanced Reading and Writing, and Listening and Pronunciation. Then, in their second, third and fourth years, they take pedagogical content knowledge courses such as Approaches in English Language Teaching, Instructional Technologies and Materials Design, Specialized Teaching Methods, Foreign Language Teaching for Children, and so on. The final year of study additionally emphasizes field experiences, with students observing EFL classes in cooperating local schools, as well as planning and teaching their own lessons. Throughout the 4-year term, students also receive instruction in general pedagogical subjects that may include educational psychology, educational science, and classroom management. These courses involve application, as well as theory (Coşgun-Ögeyik 2009), giving pre-service teachers the opportunity to practice the related skills in a controlled environment (e.g., preparing lesson plans and learning materials and performing microteachings). Other required subjects that are not related to teaching include Turkish history courses such as Atatürk's Principles and the History of the Turkish Revolution, as well as Turkish Written Expression and Turkish Oral Expression (Altmışdört 2016). Aside from these core courses, various electives relating to culture, additional foreign languages, reflective teaching, academic research, and others, may also be included at the discretion of individual university programs.

A second path to teacher candidacy, as previously mentioned, consists of pedagogical certification for graduates of 4-year degree programs other than English Language Teacher Education – typically English Languages and Literatures. In this case, individuals who have completed a 4-year degree may enroll in a teacher certification course in which they receive intensive instruction in the pedagogical aspects of language teaching. This is ordinarily a two-semester program consisting of eight courses, comprising (1) general education subjects such as Instructional Principles and Techniques, Educational Psychology, Assessment and Evaluation, Educational Program Development, and so on; and (2) English language teaching subjects such as Specialized Teaching Methods, as well as a practicum course.

Whether prospective teachers pursue a 4-year degree in English language teaching or pedagogical certification, the focus of these programs is on general English language instruction. Specialized training or coursework in English for Specific Purposes is not widely available; there is a general assumption that knowing how to teach English is enough, and little consideration has historically been given to the need for specialization within the field (Ünal 2014).

**Certification and Job Placement** For candidates who are planning to teach in a state-run elementary or secondary school, completion of a teacher education or certificate program is the first step in the process. Afterward, they are required to take a civil service exam, as they will become government workers. In addition, they take a subject area test in teaching. The scores of these exams are used by the Ministry of National Education in determining job placement. Candidates are appointed to their positions by the Ministry, rather than applying directly to schools (Yüksel 2012). On the other hand, teacher candidates who are not appointed by the MoNE

may apply directly to individual schools; but they are hired on a temporary basis and do not receive the same pay or benefits as an appointed teacher (Çelik Submitted; Yüksel 2012).

At the higher education level, institutions recruit their own English lecturers, and candidates may apply to them directly. Criteria for employment are established by the individual programs/departments. While a bachelor's degree is typically a prerequisite, there is usually no requirement that a prospective language teacher have training or experience in teaching. Furthermore, in terms of ESP courses, the main criterion for employment is English ability, rather than pedagogical knowledge concerning ESP teaching or even content area knowledge in the related subject area (Ünal 2014). The net result is that – for example – students in a faculty of medicine may receive ESP instruction from a lecturer who knows how to speak English, but has no background knowledge concerning the medical field, including the related terminology and communicative norms.

**Professional Development for Turkish Teachers of EFL** Once English teachers have been appointed to an elementary or secondary level position, the primary avenue for professional development is through periodic training workshops that are provided by the MoNE (Daloğlu 2004; Çelik Submitted). These workshops often consist of standardized content that is not tailored to the specific needs of the teachers who attend them; as such, they are largely viewed as ineffective, and teachers frequently view them as having little impact on their practice (Çelik 2016; Çelik Submitted). Currently, there are no professional development requirements for EFL lecturers at the higher education level.

## *2.2 Latvia's Case: The Changing Roles of Foreign Languages and the Growing Importance of English*

With the collapse of the Soviet Union in the early 1990s, drastic alterations were made in both language policy and language practice in many post-Soviet countries. In Latvia, these changes have been especially impacted by the complex historical developments of the second half of the twentieth century, with the official national language being challenged by the spread of minority languages (Druviete 1997, 1999, 2000). Furthermore, while the Russian language continues to hold important status in post-Soviet Latvia, the process of globalization and the resulting spread of English as the lingua franca in many professional fields have led to English taking on an increasingly prominent role. Thus, instruction in English as a foreign language is now mandatory for all Latvian students (Stavicka 2015).

**English Language Education in Latvia** At the elementary and high school levels, students follow the compulsory EFL curriculum prescribed by the Ministry of Education and Science of the Republic of Latvia. Students continuing their education at the tertiary level may enroll in university programs offering academic and

professional degrees; or in non-university professional programs (Regulations on State Standard of Academic Higher Education – Cabinet Regulation No 2, adopted January 3, 2002). In the majority of these, the Latvian language is the dominant medium of instruction. Some institutions (not funded by the state) offer Russian-medium programs that are attractive not only to Latvian residents, but also to students from other post-Soviet countries, as well as from Russia itself (Stavicka 2015). On the other hand, most state-run institutions offer English-medium degree programs in specified academic and professional domains; and some individual subject area courses also use English as the medium of instruction.

Aside from its role as a medium of instruction in higher education, English may also be taught as a foreign language. Additionally, students must demonstrate a certain level of proficiency in English as an entrance requirement to most programs of study. While proficiency levels are established on the basis of exam result scores, as well as the CEFR proficiency levels of candidates, the minimum requirements are set by individual institutions, rather than by national mandate. Furthermore, while English proficiency is considered as one criterion for university admission, the general practice is to admit students to degree programs through a competitive process. This frequently leads to mixed-ability classrooms, where students have very different levels of proficiency in the subjects in question (including English).

**The Role of English for Specific Purposes** As concerns the provision of ESP, Latvian higher education institutions offer both mandatory and elective English language courses in line with the fields of study, in addition to extracurricular language courses. However, none of the institutions examined for the purposes of this study offer mandatory courses in academic writing (excluding specialized language programs). This could be viewed as a serious challenge for students at all levels (e.g., undergraduate, masters and PhD) and in all disciplines, as they are generally required to write a research paper as a condition for graduation (Stavicka 2015).

**Who Teaches English as A Foreign Language in Latvia?** English courses in elementary- and secondary-level Latvian schools are generally delivered by teachers who are either enrolled in or have successfully completed a 4-year English language teaching program; or by students and graduates of other English-related fields (e.g., English Philology) who have obtained a pedagogical teacher education certificate. At the tertiary level, as with Turkey's case, lecturers in English as a foreign language may also possess one or the other of these qualifications, but this is not a requirement for a teaching career within the higher education sector; anyone who holds a degree in an English-related field may become an English lecturer (Regulations of the Ministry of Education and Science of the Republic of Latvia, Nr 662, 2014).

**The English Language Teacher Training Process** The majority of English language teachers in Latvia are awarded the necessary qualification through either a 4-year teacher education program; a master's study program; or an in-service training course for teachers with qualifications in other subject areas (https://www.

european-agency.org/country-information/latvia/national-overview/teacher-training-basic-and-specialist-teacher-training). These programs are generally administered by university faculties of education. The curriculum for teacher education programs is designed by individual university faculties and confirmed by the Ministry of Education and Science of the Republic of Latvia. Teacher training comprises several components, including general education courses; content-area courses; and professional courses. Whether prospective teachers are pursuing a 4-year degree in English language teaching or pedagogical certification, the focus of these programs is on general English language instruction; teacher education curricula do not differentiate in terms of the types of English that candidates might teach (e.g., General English, ESP, and so on). However, in certain instances, such as the program administered by the University of Latvia's Faculty of Education, courses in ESP teaching methodologies for the subjects of Psychology and Art may be offered (Regulations of the Ministry of Education and Science of the Republic of Latvia, Nr 662, 2014).

## 3 Rationale for the Study

Given the standing of English as an international language, students who have not mastered a satisfactory level of English proficiency are at a clear disadvantage. Therefore, it is the responsibility of higher education institutions to build on the basic skills that have been acquired at the elementary and secondary levels, allowing students to achieve the degree of mastery needed to thrive as future world citizens. On the other hand, the researchers – who are all professionals in the field of English as a foreign language – are well aware of the previously-outlined challenges that exist in carrying out effective ESP instruction. With this in mind, they felt that an in-depth examination of the status of ESP teaching at their respective universities was warranted in order to pinpoint the problem areas and suggest areas that need improvement.

In considering how best to pursue such an examination, the researchers determined that course instructors, as the individuals immediately responsible for the implementation of ESP, might have the most direct insight concerning their own teaching ability, the institutional environment, and other issues that may impact the quality of ESP instruction. Furthermore, the researchers believed that investigating the situation from the perspectives of their separate educational contexts, and then examining the similarities and differences between them in terms of what works and what does not, might allow for an additional level of understanding. With this in mind, the following research questions formed the basis for this study:

1. How do ESP instructors characterize their general teaching environment, and how do they feel it impacts the teaching of English to non-English major students?
2. What skills do ESP teachers feel are required for teaching English for specific purposes, particularly within in their subject area?

3. Do they believe they have the necessary skills to teach English effectively in their subject area? How did they acquire these skills?
4. What challenges do they face in their teaching, and what steps (if any) do they take to overcome them?

## 4 Methodology

Because the researchers' aim was to explore the ways that ESP instructors made sense of their roles within their unique contexts, the investigation was carried out through a qualitative approach (Yin 2014), in which the participants were asked to respond to a series of in-depth, open-ended questions concerning their teaching background and experiences, their level of training and preparation, perceptions of their ability to deliver ESP instruction, their institutional environments and any challenges they faced.

### *4.1 Setting*

The study was carried out simultaneously in two different institutions, major research universities located in Turkey and Latvia respectively.

**The Turkish Context** In Turkish universities, instruction in English as a foreign language may be delivered in various circumstances. First, all students who are enrolled in non-English-related degree programs (from engineering majors to art majors and so on) are required to take two basic English courses – English I and English II – usually in their first two semesters of study. These mandatory courses are organized by schools of foreign languages – found in all Turkish universities – that are responsible for organizing and delivering EFL instruction for all students (with the exception of students in English related fields such as English Philology, English Language and Literature, and English Language Education, who receive English instruction throughout their study in their own departments). Second, many degree programs offer English-related courses (e.g., Business English, English Reading and Writing, and so on) that are administered by the related departments, either as core subjects or as electives. These courses may be taught either by lecturers from the schools of foreign languages or by faculty members of the related departments.

As noted previously, English lecturers in Turkish universities are not required to have a background in English language teaching (or even in English). Because of this, teachers of English for Specific Purposes *may* have training in language instruction; but they may also be assigned without a language teaching background, either because they are involved in an English-related field or because they simply have a working knowledge of English. For example, an individual with an advanced degree

in engineering who has spent time abroad in an English-speaking country may be considered as qualified to teach English to engineering students.

At the Turkish university targeted in this study, ESP courses are mainly delivered by lecturers from the Department of Modern Languages within the School of Foreign Languages; these may be individuals with degrees or pedagogical certificates in English language teaching, or they may be degree holders in other English-related fields. On the other hand, some courses may be taught by subject-area instructors who are simply proficient users of English. It is common practice at this institution for the instructors who will be teaching English to meet at the beginning of the academic year to decide on a strategy for teaching. In this process, they may select a textbook that they will all use in their courses, regardless of their academic subject area. The end result of this is that courses intended to provide subject-related English skills typically involve little more than grammar instruction.

**The Latvian Context** The Latvian university that was involved in this study encompasses academic education programs that last three or 4 years for bachelor's degrees, 1 or 2 years for master's degrees; and 3 or 4 years for doctoral degrees. Furthermore, professional higher education degrees are available; these are divided into first level and second level professional higher education. These programs last at least 4 years. Programs at all of these levels were targeted for this study; within them, English for specific purposes is taught in departments such as education, psychology, information technology, sports sciences, and so on. Courses are typically taught by English language teaching professionals with either ELT degrees or pedagogical certificates; however, as is the case in Turkey, some courses may be taught by individuals from other academic disciplines.

## *4.2 Participants*

As the discussion of the study setting makes clear, instruction in ESP at each of these universities is applied in multiple departments, and the organization is not always clear. Due to this circumstance, an efficient means for contacting the full population of English instructors was not available. Therefore, the participants in the study were selected via a purposive sampling process (Creswell 2007), wherein the researchers reached out to colleagues who were able to identify ESP lecturers who might be willing to participate.

A total of twelve instructors were contacted and asked to volunteer; six from each university. All twelve of these agreed to participate. Six of the instructors were Turkish males; four were Latvian females, and two were Latvians who did not identify their gender in their demographic information. The respondents had anywhere from 2 to 35 years of teaching experience. All but one had an educational background in an English-related field such as English language teaching or English philology. This individual had a PhD in philosophy, but had spent a number of years studying in the United States and had a high level of English proficiency. At the time

of the study, the participants were teaching ESP in subject areas including medicine, international relations, educational philosophy, education, research methodology, sports sciences, information technology, household and economics, social pedagogy, psychology, design and law. None of the Turkish participants had received any type of training in teaching English for specific purposes. Two of the Latvian instructors had taken courses in ESP methodology. While three of the other Latvians did not indicate that they had taken courses in ESP teaching during their teacher preparation, they reported that they had encountered the topic through professional development activities. One of the Latvian instructors had no background in ESP. A summary of the participants' characteristics is provided in Table 1.

### *4.3 Data Collection and Analysis*

The data for the study were collected via self-administered interviews consisting of twelve open-ended questions that asked the respondents to elaborate on their training and skills as ESP instructors, the teaching environment in which they worked, the challenges they faced, and any steps they might have taken to overcome them. The self-interview process was preferred by the researchers, as this allowed the respondents time to gather their thoughts and provide reflective responses to the questions (Allett et al. 2011). The questions were initially prepared by the first researcher and then reviewed by the second and third researchers to determine whether they addressed the research questions sufficiently. After verifying the content of the questions, the researchers distributed them to the participants, who completed them and returned them via email. The participants were assured that taking part in the study was voluntary and that their identities would not be revealed.

In analyzing the data, the responses to the self-interviews were read several times by the researchers in order to develop familiarity with the content (Kvale 2007). Recurring ideas were identified and then used to categorize the types of responses. The content was analyzed according to these themes, and similarities and differences between the two sets of respondents (Turkish and Latvian) were noted. The researchers discussed the analyses to ensure agreement concerning the interpretations (Creswell 2007). The results of the investigation are presented in the following section.

## 5 Results and Discussion

The results obtained from the self-interviews are described in the following sections. Because the response types aligned closely with the research questions, they are discussed accordingly, using examples from the participants' responses to support the researchers' interpretations. Throughout the reporting, the participants are designated as 'T' for Turkish or 'L' for Latvian, with a number assigned to each; for

**Table 1** Participant information

| Participant | Age | Gender | Years of teaching experience | Educational background | ESP training? | Current ESP subject area |
|---|---|---|---|---|---|---|
| T1 | 53 | Male | 25 | ELT | No | Medical |
| T2 | 57 | Male | 26 | ELT | No | Medical |
| T3 | 35 | Male | 13 | ELT | No | Medical |
| T4 | 39 | Male | 12 | ELT | No | Medical |
| T5 | 41 | Male | 17 | ELT | No | International relations |
| T6 | 35 | Male | 2 | Philosophy | No | Educational philosophy |
| L1 | 47 | Female | 26 | ELT | Professional development | Education, research methodology |
| L2 | 59 | Female | 35 | ELT | Professional development | Education |
| L3 | N/A | N/A | 14 | ELT | ESP methodology course during teacher training | Sports, IT, household and economics, social pedagogy, psychology |
| L4 | 67 | Female | 34 | English philology | ESP methodology course during teacher training | Design, "all kinds of courses" |
| L5 | 40 | N/A | 19 | English philology | Professional development | Law |
| L6 | 44 | Female | 18 | English philology and teacher qualification | No | Medical |

instance, T1, T2, L1, L2, etc. The aim in doing so was to differentiate the Turkish and Latvian instructors while maintaining their anonymity.

## *5.1 The Institutional Environment and Its Impact on the Teaching of English*

Throughout their responses, the Turkish participants, in particular, noted several aspects of their institutional environment that made teaching English difficult. For instance, participant T2, who was teaching ESP for medical students, indicated that crowded classrooms were "the worst obstacles in teaching English." This problem was compounded because his students had varying levels of proficiency, so it was

not possible to group them effectively. His view echoes the beliefs of Suzani et al. (2011), who argue that crowded classrooms are significant institutional obstacles to effective instruction in English; as well as Ünal (2014) and Hoa and Mai (2016), who found that differences in learner proficiency in a single course prevents ESP teachers from tailoring their instruction to students' ability levels. A further problem, pointed out by T1, was a general lack of organization and poor management on the part of the administration of the school of foreign languages. Participant T4 expanded on this issue with his view that administrators should appoint English language teachers who had experience in the relevant subjects to teach ESP courses, rather than assigning them at random. As he explained, "It is not efficient or reasonable to ask a teacher to teach to students of civil engineering one year and students of medicine the other."

To one degree or another, all of the Turkish respondents seemed to believe that *someone else* should be responsible for teaching ESP courses. Those who had backgrounds in English-related fields generally expressed that the departments in which they were teaching should administer their ESP courses with their own faculty members, rather than "passing the buck" [participant T2] to the English professionals. On the other hand, the one subject area teacher in the sample reported the opposite:

> Professionals educated specific[ally] for teaching English should teach any English courses at any university. Having a lack of … instructors in this field is not an excuse for placing a burden on other academics who are educated in other fields.

While most of the Turkish instructors expressed negative views of the teaching environment, the Latvian participants had little to say on this issue. However, one instructor, L2, did comment on the inconsistency in how ESP was administered from one department to another. Furthermore, she felt that the timing of ESP courses in terms of learners' progression of study was inappropriate. As she put it, students were unlikely to benefit from English courses related to their subject area while they "almost completely lack subject knowledge in their mother tongue" – a concern that has also been indicated by the British Council (2015) as highly problematic. Furthermore, participant L4 found that access to appropriate materials was problematic, as with Hoa and Mai (2016).

Taking the views of both the Turkish and the Latvian participants into account, it may be argued that neither of these universities provides an ideal environment for the teaching of English for Specific Purposes. Problems such as lack of organization and planning (which were more strongly indicated by the Turkish participants, but also mentioned by the Latvians) may lead to confusion as to how and why English is being taught, as well as inconsistencies in its implementation. Furthermore, overcrowded classrooms, as well as the enforcement of instruction in ESP with students who do not yet have the prerequisite basic English skills, results in a situation where students are largely unable to benefit from ESP learning. Similar issues have been frequently cited in contexts as diverse as Albania, China, Vietnam, and Iran (Bracaj, 2014; Chen 2011; Hoa and Mai 2016; Suzani et al. 2011), as well as by other studies carried out in Turkey (e.g., Ünal 2014).

### 5.2 Skills Required for Teaching English for Specific Purposes

Because the instructors targeted in the study all had a significant level of experience in teaching English for specific purposes, it was expected that they would have a good level of understanding of the skills that are needed for teaching English skills in relation to a given discipline. In this respect, both the Turkish and the Latvian participants expressed similar views. For the majority of the participants, a combination of English language skills, pedagogical knowledge, and subject area knowledge was considered to be a satisfactory balance. As participant T6 explained, a mix of "subject area knowledge, pedagogical knowledge, intercultural experience and language skills are required to meet the needs of any ESP learners." Participant L3 expanded on this with her concise assessment of the requirements for ESP teachers, which involved:

> (1) an introduction to the subject area, (2) consultations provided by subject area teachers on the topics to be covered, (3) guidelines provided by the institution and specific program directors on what competences should be developed in a foreign language course, (4) additional training courses abroad (in Latvia you cannot get these) on how to work with subject-related texts and methodology, [as well as] where and how to select teaching materials financially supported by the institution.

This last statement, in particular, reflects the need for a comprehensive approach to English language teacher preparation, an area that has often been found to be lacking by researchers such as Büyükkantarcıoğlu (2004), DeVillar and Jiang (2006) and Kızıldağ (2009).

### 5.3 Teachers' Views of Their Pedagogical Skills and How They Developed Them

Overall, the participants expressed a consensus regarding the skills required to teach ESP effectively within their individual contexts. However, their views on their own level of ability were somewhat varied. The Turkish instructors often expressed that they had the necessary English-related knowledge and skills; yet they believed that subject area knowledge was more important for teaching effectively and felt that they were deficient in this regard. According to participant T3:

> I believe that if I am to teach medical English, it is not enough to have a good command of the language. I feel that I need to know more about the particular field that I was teaching … I feel confident in terms of all the [language] skills involved, but jargon is where I feel insufficient. My pedagogical knowledge of teaching English does not actually seem to matter, either; it is hard teaching in a medical faculty.

Their difficulties in this regard are reflected by Hoa and Mai's (2016) contention that ESP teachers often lack sufficient knowledge in the subject area in which they are teaching, and that their ability to deliver effective instruction suffers from this shortcoming. On the other hand, the Turkish instructors expressed, on the whole,

that they were able to compensate for their lack of subject area knowledge through experience in the ESP classroom; according to T2, after 4 years of teaching the same course in medical-related English, "I have enough skills."

In the case of Latvia, the lack of training in subject area skills appeared to be less of a problem, as several of the participants had received training in ESP – either through their initial teacher preparation or through various professional development efforts. Participant L1, for example, explained that, although she had not received direct training in ESP through initial teacher preparation, "Learning from colleagues, British Council Courses, self-studies, [and] professional development courses" had contributed to her ability to deliver effective ESP instruction. Furthermore, as with the Turkish instructors, their own classroom experiences had been beneficial in developing their skills. For instance, as L3 reported, "University education gave me the direction and a broad understanding, but everything else I have learned from my own experience and practice."

The responses of both the Turkish and the Latvian participants revealed that, on the whole, they believed that professional experience, rather than their teacher training, had provided them with the necessary skills to teach English for specific purposes. While experience may have considerable merit, inadequacies in teacher quality have often been blamed on sub-standard teacher training (Çelik Submitted; Özer 2005; Özmusul 2011). With this view in mind, it may be argued that it is not enough to leave teachers to develop their own skills through practical experience or individual efforts at professional development; instead, institutional measures are needed to provide both the subject-matter knowledge and the pedagogical skills in relation to English for specific purposes prior to assigning teachers to ESP classrooms.

## *5.4 Challenges Faced in Teaching ESP and Steps Taken to Overcome Them*

By far the most often reported difficulty in teaching English for specific purposes in either the Turkish or the Latvian context involved subject-related terminology. This problem was especially prominent in the Turkish context, where most of the participants were teaching medical-related ESP courses. As an example, T3 explained that while the grammar related to his subject area was not an issue, the field-related terminology posed a major challenge. He reported having to spend a great deal of time looking up medical "jargon" on the Internet, a necessity which he found to be "very difficult and … time-consuming." Participant T4 mentioned a similar experience, noting that:

> I have to study/prepare for a longer period of time than usual to research about the topic. Sometimes, I research in my mother tongue to learn about the topic in detail, because knowing the vocabulary does not mean that you can understand the topic or a text.

While the Latvian instructors also faced difficulties in preparing and delivering ESP instruction, they were often able to find outside assistance, rather than dealing with them on their own. Participant L2, for instance, was able to find opportunities to learn more about teaching English for specific purposes through resources offered by "Oxford University Press, Pearsons, Longman, [and] participation in projects and conferences." However, L4 felt that opportunities for professional development were out of her reach. As she pointed out:

> There are opportunities to attend courses/trainings abroad, but [they are] self-financed, and I do not think that I should spend so much of my personal income in order to satisfy the institution that cannot not even provide a decent teaching program.

The notion that professional development may place an unreasonable financial burden on EFL teachers, or that the available opportunities are irrelevant to teachers' individual contexts, has been emphasized by researchers such as Çelik (2016); and these issues seem to be at play in the current case, as well. While some teachers may be self-motivated to seek out opportunities for improvement, others may need greater encouragement, whether through institutional support or other means.

## 6 Conclusions and Recommendations

Although this study involved only a small number of participants who were teaching English in just a handful of subject areas, the characteristics of the study participants and the contexts in which they work are fairly typical within the related educational systems. Thus, while larger-scale studies in a broad range of institutions may provide more generalizable data, some preliminary conclusions can be drawn. The overall sense that can be established from the results is that the conditions for teaching English for Specific Purposes are not ideal in either the Turkish or the Latvian context, and that systematic change is needed in a variety of areas to move beyond the teaching of basic English to providing actual ESP training, as discussed in the following sections.

### *6.1 The Institutional Environment*

In terms of teaching environments, the Turkish and the Latvian cases exhibited similar limitations. While the Turkish education system has been long-established, and the Latvian system is still in a state of flux following a period of political upheaval, both of these contexts appear to be characterized by a lack of planning and organization of ESP programs. Under these circumstances, teachers are obligated to deal with:

- a lack of consistency in curricula, leading to confusion about what is to be taught;

- limited access to appropriate teaching materials, leaving teachers to either find or create their own, or to turn to general grammar texts, rather than focusing on subject-area language skills.
- learners who lack basic English skills and are therefore not well-prepared for specialized language training.

In addition, in Turkey's case, overcrowded classrooms, with students who are of varying proficiency levels, makes it difficult to tailor instruction to meet the needs of all learners; a circumstance that posed less of a concern in the Latvian context. However, in both cases, the general attitude was that both the teaching environment and the characteristics of the students limited the ability to address complex language skills, and that basic English was all that could be taught.

With these issues in mind, it can be suggested that higher education institutions should, through in-depth needs analysis, develop a standardized strategy for the provision of ESP, with a clear definition of the competencies to be achieved and the standards for instruction; and that this strategy should be implemented from a holistic perspective, rather than left to individual departments. By doing so, university and professional programs may deliver a more consistent approach that makes sense both to course instructors and to students. Moreover, resources should be allotted to provide for smaller class sizes, with adequately trained teachers and materials that are specifically designed for ESP training within the given subject areas.

## *6.2 Skills Required for the Teaching of ESP*

With respect to English language teaching skills and training, it can be argued that the teachers – as the individuals most closely involved in the implementation of ESP – may have the best understanding of the skills that are needed, and that their views should be considered in determining the types of training that are necessary. In this study, both the Turkish and the Latvian teachers stressed that subject area knowledge should be considered with at least as much emphasis as pedagogical skills, and training should be offered in terms of the discipline-specific terminology, register and discourse.

Therefore, to address this need, instructors who are assigned to teach English for specific purposes may be provided with access to specialized training from ESP experts in the given subject area; either through workshops held within the particular institution or through financing to attend professional development programs. Furthermore, teachers should be supported in joining professional organizations and connecting with other ESP instructors in their fields as a means to collaborate on strategies for problem-solving, to share resources, and so on.

### *6.3 Approaches to Coping with Challenges*

Finally, as relates to the challenges involved in ESP instruction and how instructors deal with them, a substantial contrast was seen between the Turkish and Latvian participants. On the one hand, the Latvian teachers reported a degree of resourcefulness in dealing with the obstacles they encountered, such as seeking out professional development opportunities on their own or reading professional literature. On the other hand, the Turkish instructors appeared to be frustrated with the situation and to fault the system for their difficulties. In particular, they expressed the general attitude that teaching English was a burden and that the responsibility should belong to someone else. While some of the instructors tried, at minimum, to increase their knowledge by reading about the subject in which they were teaching, they mainly demonstrated little initiative to improve their circumstances. This points to a lack of motivation, which could be alleviated to some degree by addressing the institutional factors mentioned previously, such as overcrowded classrooms and a lack of clear learning goals and standards. Furthermore, adequate compensation, as well as visible institutional support for ESP instructors, may contribute to ESP teachers feeling valued in their role, and thus more invested in doing the job well.

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# Listening Comprehension Strategies of EMI Students in Turkey

**Adem Soruç, Asiye Dinler, and Carol Griffiths**

**Abstract** This chapter discusses the issue of English as a medium of instruction (EMI) at higher education, reporting specifically the results of a listening comprehension strategy survey and qualitative comments to open-ended questions. The study was conducted at three universities (two states, one private), conveniently sampling 76 students (30 male, 46 female) from four non-English-related departments such as Business Management (n = 38), Electronics and Communication Engineering (n = 15), Agricultural Biotechnology (n = 12), and International Trade (n = 11). The results of the questionnaire showed that of 32 items, students stated 24 items (median rating = 4) generally reflect what they do during the lecture to comprehend it, while another eight items received an overall median rating of 3 (neutral). As to differences, the study found statistically significant differences between male and female students for some strategies, between full EMI and partial EMI groups, among grades, and major/department, as well as finding a statistically significant relationship of students' general GPA scores to some questionnaire items. The qualitative results also revealed that the students used many strategies while listening to their lecture: notably they focused on the lecturer, took regular notes in a good shape, and came to class prepared. At the end of the chapter, some important implications are given to both students and lecturers in an EMI context, and suggestions are made for ongoing research studies.

**Keywords** Higher education · English as a medium of instruction · Comprehension · Listening comprehension strategy use · Individual variables

A. Soruç (✉)
Sakarya University, Serdivan, Turkey
e-mail: adem_soruc@hotmail.com; asiye.dinler@gmail.com

A. Dinler
Turkish Ministry of Education, Serdivan, Turkey

C. Griffiths
Auckland Institute of Studies, Auckland, New Zealand
e-mail: carolgriffiths5@gmail.com



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## 1 Introduction

Since the 1990s, the European Commission and the Council of Europe have encouraged pluriculturalism and plurilingualism to 'motivate and produce a highly skilled plurilingual, pluricultural workforce.' (Coyle 2008, p. 99). After the Bologna Declaration was signed in 1999 to make degree programs of European universities standardized and appealing to internationally mobile students, there has been an increasing shift towards English medium courses/programs and "this global expansion is showing no signs of slowing down" (Soruç and Griffiths 2017, p. 1). In response to this development, the EMI research centre was founded at the University of Oxford in 2014. This centre 'conducts research into English as a Medium of Instruction and develops and teaches professional development programs for teachers and lecturers' (Dearden 2014, p. iv) by cooperating with schools/colleges or higher education institutions around the world.

The main reason for institutions (chiefly universities) to adopt EMI is to attract international students endeavoring to gain an advantage in the competitive employment market. In addition, participation of foreign students and teaching staff was thought to increase internationalization of curricula at the universities. The adoption of EMI as "a mushrooming phenomenon" (Soruç and Griffiths 2017, p. 10), however, has not been without its problems (Macaro et al. 2016). Many students in EMI courses struggle with the task of learning content through a foreign language (Smit 2008), since the course content itself is often quite challenging (Hellekjær 2010; Mulligan and Kirkpatrick 2000).

## 2 Previous Studies

Over the years, English as a medium of instruction has gained popularity in Turkey, and there have been many studies relating to its use. For instance, Kılıçkaya (2006) compared lecturers' (n = 100) views on English-medium instruction to Turkish-medium instruction at eight universities in Ankara, Turkey. Questionnaire results revealed that lecturers generally favored "the idea of adopting Turkish as an instructional medium rather than English" (p. 8) because, according to them, the mother tongue can help students reach a deeper understanding and pass examinations in Turkish.

Students' motivation and perceptions of studying in an English-medium university was investigated with 203 university students at Çukurova University, Adana, Turkey (Kırkgöz 2005). A questionnaire was given to the first and final year students who were studying in EMI programs (Mechanical Engineering, Electric and Electronics Engineering, and Economics and Business Administration). According to the results, the students were found to have a positive self-assessment of their English proficiency, reporting that they felt good at reading and listening but not so good at speaking and writing. Although they had 'mainly instrumental orientation

towards long-term (post study) goals' (p. 116), the students still reported 'detrimental effects of learning subjects through another language such as a feeling of being distanced from their native language and culture' (p. 101).

Working on a curriculum renewal project for adult learners of EFL in Çukurova University, Turkey, Kırkgöz (2007) included over 1000 participants in the study. According to questionnaire and interview results, students needed more challenging materials, more productive learning, more autonomy through more challenging out-of-class tasks, better prepared content based materials, and more help with acculturation to prevent the initial culture shock experienced.

In a later study, Kırkgöz (2009a) investigated students' and lecturers' perceptions of the effectiveness of foreign language instruction in an English-medium university. The participants were 15 lecturers and 220 students from Çukurova University, Turkey. The instruments used were a questionnaire, semi-structured focus group interviews with students, and interviews with lecturers. The findings revealed that students perceive their own proficiency as low or somewhat effective and reported that the skill-based curriculum for English for academic purposes (EAP) is "inadequate in preparing students effectively for their academic requirements" (p. 92) because skills acquired in EAP are not always transferable to their academic classes. Lecturers likewise reported the inadequacy of the EAP curriculum. Thus, Kırkgöz suggests an approach which "constitutes a shift in emphasis from a skills-based curriculum to a discourse-community driven philosophy" (p. 92).

A study to find perceived reasons for success and failure of prep year program students (n = 158) at Anadolu University was conducted by Taşkıran (2010). Participants were given an open-ended questionnaire, and it revealed that most students (58%) considered themselves unsuccessful. They referred to 372 causes, the most frequent of which was school/program/system, followed by ineffective teachers, lack of effort and lack of strong educational background. The most frequently reported reason for their success, however, was personal effort.

In Korea, Byun et al. (2011) argued that EMI is viewed as 'a major instrument for innovation in terms of internationalization' (p. 432), as well as an important contributor to competition among Korean universities. Therefore, Byun et al. aimed to describe the state of EMI in Korea. Survey data and data from interviews held with 10 lecturers and 19 students showed that although the participants had positive feelings towards EMI, students were still found to have difficulty following lectures because of "compulsory enforcement of EMI without regard to students'/instructors' language proficiency" (p. 447). Lecturers also bemoaned "the lack of a much-needed support system" (ibid., p. 447).

A longitudinal study in Hong Kong by Evans and Morrison (2011) explored language-related challenges that first-year students face in an EMI program at the Polytechnic University. Over 3 years, data came from semi-structured interviews with 28 students, as well as a questionnaire completed by a large number of students (n = 3009). The results showed that students had problems 'understanding technical vocabulary, comprehending lectures, achieving an appropriate academic style and meeting institutional and disciplinary requirements. (p. 198). However, the study

also found that the students dealt with their daunting challenges, especially 'through a combination of strong motivation, hard work, effective learning strategies' (p. 206). Evans and Morrison also suggest that 'students' experience of studying in English prior to admission' (p. 206) to an EMI program should be considered both by subject teachers and language teachers.

In the United Arab Emirates, Rogier (2012) explored the question of whether language proficiency of EMI students (n = 59) increased over 4 years of EMI education, comparing the results to what lecturers (n = 161) believed. Although both students and lecturers thought 'EMI at the university level in the UAE is necessary for students to be able to compete in a global world' (p. 122), differences occurred in 'perception between students and faculty members regarding language ability' (p. 122); while students reported their language proficiency was good or excellent in four skills, lecturers reported that learners' proficiency was not good enough, especially in writing and listening.

The expectations of EMI lecturers from a prep year program at two universities in Turkey were investigated by İnan et al. (2012). A questionnaire was given to 85 EMI lecturers from a variety of departments. The findings revealed that lecturers gave greatest importance to reading and writing, especially to reading as it helps 'to understand all kinds of written material related to their field' (p. 3170). As to writing, lecturers at both universities expected students to 'prepare presentations in their courses and write short paragraphs during their exams' (p. 3170).

A study was conducted by Kırkgöz (2013) to explore first and final year students' (n = 151) approaches to learning in English-medium higher education (Mechanical Engineering, Electrics-Electronics Engineering, Economics and Business Administration). A questionnaire was given, and interviews were held (n = 48). The results showed that first year students have a tendency towards surface learning while final year students have a tendency towards a mixture of surface and meaningful learning depending on various factors, one of which was English medium of instruction at higher education level. Both first (n = 66) and final (n = 68) year students saw English medium instruction as "an obstacle to learning disciplinary knowledge" (p. 36) and to understanding their lecture(r)s in the class.

At Alfred Nobel University in Ukraine, Tarnopolsky and Goodman (2014) investigated the degree to which English as a medium of instruction allows for the use of Ukrainian (the state language) or Russian (the predominantly spoken language). Field notes, audio-recordings, video-recordings for 9 months in EMI courses and semi-structured interviews and informal conversations with 30 students and teachers revealed that both students and teachers recognize at times the importance and inevitable nature of using mother tongue 'for the purposes of aiding comprehension' (p. 393), thus arguing that the allowance for the use of two languages in EMI classes shows their 'current and future strength in the language ecology." (p. 395).

The perceptions of 157 EMI students (93 local and 64 foreign) at Southern Taiwan University of Science & Technology were explored by Huang (2015), using a questionnaire to survey students' learning motivation, learning anxiety, and learning achievement, and conducting focus group interviews with eight volunteer students. The findings revealed that although most students were found to be motivated

to take EMI courses, local students were still anxious due to their low English proficiency, and they experienced 'stress from the content comprehension as well as from peer competition' (p. 77). Huang therefore suggests teaching effective comprehension strategies that students with a low level of English can use, which will further improve those students' confidence and motivation to complete EMI courses.

Turkish university students' orientation towards English and its use as a vehicle for academic studies was investigated by Karakaş (2015). Altogether, 351 undergraduate students from Boğaziçi University (n = 106), Bilkent University (n = 132), and Middle East Technical University (n = 113) were first given a questionnaire, and of these, another 20 were later interviewed. The study showed that native speaker competence is popular among students in terms of written and spoken English, with a stronger orientation to native-like writing than speaking.

We can see from the studies summarized above, that EMI presents a number of challenges for both students and teachers in many different locations around the world. Especially salient among these challenges is the difficulty experienced by students with a low level of proficiency in English who are not able to cope with listening comprehension (e.g. Byun et al. 2011; Evans and Morrison 2011; Kırkgöz 2013). The research questions addressed in this study were therefore as follows:

1. What listening comprehension strategies do EMI students in Turkey use?
2. Does strategy choice depend on gender, context, class, major, and general GPA scores?
3. What do students frequently report about their strategy use?

## 3 The Study

This study sought to discover what strategies EMI students generally use to comprehend lecture(r)s more effectively and whether there is a significant difference in the strategy use between gender, context, classes (e.g., freshman, sophomore etc.), and major (international trade, etc.). In addition to exploring any relationship between questionnaire items and students' general GPA scores, the study also aimed to find qualitative data, and thus to reveal what the students generally do during the EMI lecture by asking them to write their opinions to the items in the questionnaire. Therefore, the study reported in this chapter will give both the results of a listening comprehension strategy survey and students' comments on the items.

### *3.1 Setting and Participants*

This study was conducted at one private and two state English medium universities, in Turkey. Data came from 76 students (30 male, 46 female) in four non-English-related departments such as Business Management (n = 38), Electronics and

Communication Engineering (n = 15), Agricultural Biotechnology (n = 12), and International Trade (n = 11). The students were selected according to convenience factors such as timetabling, students' classes, and legal permissions. All grades (Freshman = 23; Sophomore = 12; Junior = 23; Senior = 18) participated and they were at an average age of 18. None of the students were native-speakers of English – all were native speakers of Turkish, and therefore all had received an English prep year program before getting into the faculty of their choice.

### *3.2 Data Collection*

Data collection occurred in two stages. First, a preliminary study was run to develop a listening comprehension strategy questionnaire; second, the questionnaire developed was used to collect data for the main study.

In the first stage, before collecting data for the main study, in order to develop a listening comprehension questionnaire for an EMI context, a preliminary study with a limited number of EMI students was conducted; students were asked to write about the listening strategies they used to follow their lectures/lecturers more effectively. The data were transcribed and analyzed for the most common strategies used by the students, which were included in the strategy questionnaire to be used for the main study.

In the second stage, after the listening comprehension strategy questionnaire was developed, the first and the second author piloted the questionnaire with ELT students, and then three universities were visited to collect data for the main study. Prior to distributing the questionnaire, all the students (n = 76) were informed about the study, that they were free to leave any time without responding to the items, and that the results would not influence their grades. All agreed and signed the consent form.

### *3.3 Data Collection Instruments*

A questionnaire (see Appendix A) was developed with 37 items based on the data analysis of the preliminary study. To be able to extract students' reflections, they were asked to rate according to whether the items reflect what they do during the lecture (1 = always untrue of me; 5 = always true of me). To add a further qualitative perspective to the study, in addition to the ratings, students were also asked to write their comments or to respond to structured open ended questions in the column provided in the questionnaire (see Appendix A). All the items were given both in students' mother tongue (Turkish) and in the target language (English).

### 3.4 Data Analysis

The item ratings from the questionnaires were entered into SPSS and analyzed for reliability (Cronbach's alpha) and normality of distribution. Given the fact that Likert-type questionnaires are ordinal, and that the data from the questionnaire used in this study were not normally distributed, the data were analyzed for medians, nonparametric differences (Mann-Whitney U and Kruskall-Wallis H), and nonparametric correlations (Spearman's rho).

To analyze students' comments or opinions related to the questionnaire items, a grounded approach was adopted. As Dörnyei (2007) explains, a grounded approach involves examining the data recursively for salient themes (open coding stage), which are then grouped around a unifying axis (axial coding stage) before a core category is identified which over-arches the contributing themes (selective coding stage).

## 4 Results

### 4.1 Reliability and Normality of Distribution

The alpha co-efficient for reliability over all items was calculated at. 89, which is considered a reasonably high level of reliability (e.g. Dörnyei 2007). No item altered the alpha value if deleted (the lowest was. 88 for item 14, the highest. 90 for items 8, 12, 23, 29). A factor analysis using Principal Component Analysis and Equimax Rotation with Kaiser Normalization (see AppendixB for component matrix) found that almost all items stayed together as a unified construct (listening comprehension strategies), except for five items (8, 12, 23, 29, 35) which neither fitted with the other items nor formed a separate group. They were therefore removed from the survey, leaving a total of 32 items. When the alpha co-efficient for reliability was calculated again after the factor analysis, this time it showed a higher level of reliability at. 92. A Kolmogorov-Smirnov test of normality of distribution was run on the students' responses, which displayed that none of the items was normally distributed (in all cases, $p = 0.000$).

### 4.2 Medians

24 items received median ratings of 4 (generally true of me), while eight items (1, 4, 8, 11, 13, 14, 15, 28) received median ratings of 3 (neutral). These results are set out in Table 1.

**Table 1** Overall median rating for listening comprehension strategy items

| No | Listening comprehension strategy items | Median overall rating |
|---|---|---|
| 1 | Keep my attention high level | 3 |
| 2 | Try to remain alert/active | 4 |
| 3 | Sit in the front row | 4 |
| 4 | Come to class prepared before the class | 3 |
| 5 | Attend classes regularly | 4 |
| 6 | Participate in the classroom activities | 4 |
| 7 | Concentrate on the topic | 4 |
| 8 | Concentrate on lecturer's voice tones | 3 |
| 9 | Listen to the lecturer carefully | 4 |
| 10 | Try to keep up with what the lecturer says | 4 |
| 11 | Audio record the lecturer | 3 |
| 12 | Ask questions | 4 |
| 13 | Give examples | 3 |
| 14 | Ask for examples | 3 |
| 15 | Take notes | 3 |
| 16 | Try to understand instead of taking notes | 4 |
| 17 | Try to get all information in good shape | 4 |
| 18 | Improve topic knowledge | 4 |
| 19 | Improve topic interest | 4 |
| 20 | Try to remember my old knowledge | 4 |
| 21 | Use a dictionary | 4 |
| 22 | Guess the unknown words from context | 4 |
| 23 | Translate what the lecturer says | 4 |
| 24 | Imagine different situations and conditions related to the topic | 4 |
| 25 | Visualize the situation | 4 |
| 26 | Try to think out of the box | 4 |
| 27 | Think critically | 4 |
| 28 | Specify/clarify what I know | 3 |
| 29 | Try to understand rather than memorize | 4 |
| 30 | Try to get the main idea | 4 |
| 31 | Try to make the class active | 4 |
| 32 | Internalize the information into myself | 4 |

1-Always untrue of me; 2-Generally untrue of me; 3-Neutral; 4-Generally true of me; 5-Always true of me

## *4.3 Differences*

### 4.3.1 Differences According to Gender

The nonparametric two-independent-samples test of difference (Mann-Whitney U) was used to determine any differences in the use of comprehension strategies by male and female students. Of the 32 items in the questionnaire, according to

**Table 2** Significant differences according to gender

| No | Item | Difference | Mean rank (male) | Mean Rank (female) |
|---|---|---|---|---|
| 4 | Come to class prepared before the class | p = .045 | 32.40 | 42.48 |
| 5 | Attend classes regularly | p = .001 | 28.73 | 44.87 |
| 7 | Concentrate on the topic | p = .012 | 31.05 | 43.36 |
| 9 | Listen to the lecturer carefully | p = .003 | 29.88 | 44.12 |
| 11 | Audio record the lecturer | p = .016 | 31.23 | 43.24 |
| 18 | Improve topic knowledge | p = .011 | 30.93 | 43.43 |
| 20 | Try to remember my old knowledge | p = .006 | 30.35 | 43.10 |
| 25 | Visualize the situation | p = .045 | 32.57 | 42.37 |
| 27 | Think critically | p = .030 | 32.17 | 42.63 |

**Table 3** Significant differences according to full and partial EMI context

| No | Item | Difference | Mean rank (full) | Mean rank (partial) |
|---|---|---|---|---|
| 2 | Try to remain alert/active | p = .005 | 28.70 | 42.75 |
| 4 | Come to class prepared before the class | p = .009 | 48.33 | 34.24 |
| 9 | Listen to the lecturer carefully | p = .021 | 46.85 | 34.88 |
| 16 | Try to understand instead of taking notes | p = .019 | 29.91 | 42.23 |
| 30 | Try to get the main idea | p = .018 | 30.07 | 42.16 |

Mann-Whitney U test results, it was found that female students rated eight of the strategies (items 4, 7, 9, 11, 18, 20, 25, 27) significantly more highly than male students (see Table 2).

### 4.3.2 Differences According to Full EMI and Partial EMI Context

The nonparametric Mann-Whitney U test was performed to find out any differences in the use of listening comprehension strategies by full EMI program students and partial EMI program students. Five significant differences emerged; while three were in favor of partial EMI students, another two supported full EMI students' thoughts. Of the 32 items in the questionnaire, it was found that the partial EMI program students tried to remain active in the class (item 2), to understand the lecture(r) rather than take notes (item 16), and to get the main idea of the lecture (item 30), while full EMI program students came to class prepared before the class (item 4) and preferred to listen to the lecture carefully (item 9) (see Table 3).

**Table 4** Significant differences according to class

| No | Item | Difference | Mean rank (freshman) | Mean rank (sophomore) | Mean rank (junior) | Mean rank (senior) |
|---|---|---|---|---|---|---|
| 2 | Try to remain alert/ active | p = .019 | 30.80 | 32.50 | 40.80 | 49.39 |
| 5 | Attend classes regularly | p = .029 | 38.22 | 27.50 | 35.67 | 49.81 |
| 7 | Concentrate on the topic | p = .010 | 41.80 | 22.04 | 37.04 | 47.11 |
| 9 | Listen to the lecturer carefully | p = .000 | 49.67 | 17.96 | 30.83 | 47.72 |
| 11 | Audio record the lecturer | p = .033 | 31.87 | 39.00 | 35.35 | 50.67 |
| 12 | Ask questions | p = .007 | 29.15 | 38.92 | 36.80 | 52.33 |
| 20 | Try to remember my old knowledge | p = .026 | 31.05 | 33.42 | 38.22 | 49.28 |
| 24 | Imagine different situations and conditions related to the topic | p = .012 | 31.26 | 30.75 | 40.35 | 50.56 |
| 27 | Think critically | p = .050 | 32.33 | 33.88 | 38.50 | 49.47 |
| 29 | Try to understand rather than memorizing | p = .003 | 29.78 | 41.58 | 34.35 | 52.89 |
| 32 | Internalize the information into myself | p = .006 | 32.67 | 35.08 | 34.43 | 53.42 |

### 4.3.3 Differences According to Class (Freshman, Sophomore, Junior, Senior)

According to a Kruskall-Wallis H test of difference for several independent samples, there were 11 questionnaire items which indicated a significant difference according to class. Interestingly, all the differences except for one (item 9 = listening to the lecturer carefully) were in favor of what senior students were doing (see Table 4).

### 4.3.4 Differences According to Major

According to a Kruskall-Wallis H test of difference for several independent samples, there were nine questionnaire items which showed a significant difference according to students' major. Of these, seven were rated most highly by those studying International Trade, while two were rated most highly by students of Agriculture (see Table 5).

**Table 5** Significant differences according to major

| No | Item | Difference | Mean rank (business) | Mean rank (Elect.) | Mean rank (Agric.) | Mean rank (trade) |
|---|---|---|---|---|---|---|
| 2 | Try to remain alert/active | p = .002 | 30.47 | 45.30 | 40.75 | 54.50 |
| 5 | Attend classes regularly | p = .005 | 34.54 | 29.33 | 48.33 | 53.95 |
| 11 | Audio record the lecturer | p = .026 | 32.12 | 38.90 | 51.38 | 45.95 |
| 12 | Ask questions | p = .002 | 29.34 | 45.17 | 46.92 | 51.86 |
| 20 | Try to remember my old knowledge | p = .005 | 31.65 | 36.27 | 45.25 | 53.82 |
| 23 | Translate what lecturer says | p = .046 | 34.11 | 38.10 | 38.63 | 54.09 |
| 24 | Imagine different situations and conditions related to the topic | p = .024 | 32.42 | 39.50 | 43.13 | 53.09 |
| 27 | Think critically | p = .023 | 31.70 | 41.80 | 44.58 | 50.86 |
| 29 | Try to understand rather than memorize | p = .022 | 31.82 | 41.10 | 51.71 | 43.64 |

**Table 6** Items positively related to EMI students' general GPA scores with Spearman's correlation (C) and probability (P)

| No | Item | C | P |
|---|---|---|---|
| 2 | Try to remain alert/ active | .642 | p = 0.046 |
| 11 | Audio record the lecturer | .685 | p = 0.029 |
| 17 | Try to get all information in good shape | .667 | p = 0.035 |
| 20 | Try to remember my old knowledge | .832 | p = 0.003 |
| 24 | Imagine different situations and conditions related to the topic | .644 | p = 0.044 |
| 28 | Specify/clarify what I know | .730 | p = 0.017 |

## *4.4 Correlations*

### 4.4.1 Relationship of Students' General GPA Scores to Questionnaire Items

When analyzed using Spearman's rho test of correlation, students' general GPA scores were found to be significantly related to six questionnaire items (items 2, 11, 17, 20, 24, 28) as can be seen from Table 6. All these results seem to suggest that those EMI students having higher GPA scores try to remain more alert or active during the lecture, and they try to get all information in good shape. To do this, they audio record the lecturer, they use background knowledge, they imagine different situations, and thus they clarify what they know about the lecture.

## *4.5 Qualitative Results*

### 4.5.1 Comments

The students wrote 108 comments, altogether. Many students wrote in English, and their statements have been given verbatim with any infelicities. Other students preferred to write in their mother tongue, Turkish, to be able to clarify their opinions, and these have been translated by the authors of the study.

As the students wrote their comments in the column provided for each item in the questionnaire, when analyzing the comments, by its nature, they are already grouped according to the items, so no conflict occurred among the authors. In order to avoid repetition, the authors have only selected those comments which seemed most relevant or representative.

### 4.5.2 Students' Strategies to Follow the EMI Lectures

Although eight items in the questionnaire received neutral median ratings (neutral = 3) and twenty-four received median ratings four (generally true of me), the students still seemed to suggest a variety of ways to follow their lectures. When combined, these items fell into three main themes:

1. *Focus on the lecture(r):* Altogether 15 students stated that they gave their full concentration on the lecture or lecturer while listening during the class. One of the male students from International Trade department said "*I look at my lecturers' eye*". Similarly, while one student from Business said "*I focus just on the board*", another from the same department stated "*I keep my mobile phone away from me to focus on lecturer*".

    - I try to make eye-contact to my lecturer or interlocutor in order not to lose my attention (Electronics and Communication Engineering)
    - I make a good communication with teacher, ask to he/she some questions about the topic (Business)
    - By being careful about the questions of the lecturer (Agricultural Biotechnology)
    - While I am listening to lecturer, looking for if a word can be difficult (International Trade)
    - Trying to catch keywords during listening (Electronics and Communication Engineering)

2. *Note taking:* EMI students, especially those from Business Management, stated that they took notes to follow their lectures. They argued that it is one of the most common and effective strategies that they used to follow the lecture. Altogether, 35 students stated that they took notes during the lecture, of whom 27 took notes in English, while the remainder either took notes in Turkish or used both languages.

- I write keywords during listening (Business)
- I am generally taking some notes from the book (Agricultural Biotechnology)
- Actually, I prefer to listen the lecture, and I take notes (Business)
- I take notes in English but sometimes write down in Turkish to understand well (Business)

3. *Individual effort:* Many students also argued that it is important for them to come to class prepared and that to understand the lecture they should put great effort both before and after the lecture. One of the female students from the Business department stated that "*I prepared before class, repeat after class*", another from International trade said "*I research before coming to class*". They explained that they either give examples or make comments on the topics discussed or become involved in classroom discussions to keep themselves alert or their attention high.

   - I'm trying to write down what I learn after the class and also when trying to the exams I write down more than once. So that I do a lot of repetition (Business)
   - I repeat notes by myself repeatedly (Business)
   - I use top-down and bottom-up listening strategies in general. I repeat what lecturer said myself in my mind to clarify the topic (International Trade)
   - Memorization, creative writing, critical thinking, summarizing, paraphrasing, skimming, scanning (Agricultural Biotechnology)
   - Raising my hands all the time (Electronics and Communication Engineering)
   - I make some sketches (Business)
   - I talk too much in the class (International Trade)

## 5 Discussion

This study aimed to reveal what strategies EMI students generally use when listening to their lecture(r)s during the class.

Of 32 items in the questionnaire, 24 items were found "generally true" by all the participants, while another eight items were found "neutral". That is, median scores indicated that the students employed almost all strategies to be able to comprehend the lecture or to follow the lecturer. The EMI students stated that, throughout the lecture, they generally try to remain alert (item 1), sit in the front row (item 2), attend classes regularly (item 5), participate in the classroom activities (item 6), concentrate on the topic (item 7), listen to the lecturer carefully (item 9), try to keep up with what the lecturer says (item 10), ask questions (item 12), try to understand instead of taking notes (item 16), try to get all information in good shape (item 17), improve topic knowledge (item 18), improve topic interest (item 19), try to remember their old knowledge (item 20), use dictionary (item 21), guess the unknown words from context (item 22), translate what the lecturer says (item 23), imagine different situations and conditions related to the topic (item 24), visualize the situa-

tion (item 25), try to think out of the box (item 26), think critically (item 27), try to understand rather than memorize (item 29), try to get the main idea (item 30), try to make the class active (item 31), and internalize the information (item 32). The fact that almost all the items reflected what the students generally do during lecture indicates that they put great effort to override the obstacle to comprehend the lectures or to improve their academic knowledge (e.g. Kırkgöz 2013). As with Kılıçkaya's (2006) study, many students used translation as another strategy, arguing that they translated (item 23) what was said into their mother tongue to attain at much deeper understanding.

On the other hand, the students were also found neutral about eight items (median rating = 3), although in the comments section they, in fact, wrote many strategies that they used to keep their attention high (item 1) in the class such as making close eye-contact with the lecturer, asking questions about the topic, paying attention to words or keywords of the course, coming to class prepared (item 4), researching the course content before the class, concentrating on the lecturer's voice tones or look in the lecturers' eyes (item 8), sometimes audio recording the lecturer (item 11), taking notes (item 13), asking for examples (item 14), taking notes in the target language (item 15), or clarifying what they know (item 28). As can be seen, although the students gave "neutral" rating to those eight items, they in fact stated in their comments to the items that they used many of these listening comprehension strategies, and it is natural to find differences in the perceptions of students not only from the same departments (e.g. İnan et al. 2012) but also from different departments (e.g. Rogier 2012).

The inferential statistical analyses showed a series of differences between gender, context, class, major, and found a relationship of students' GPA scores to questionnaire items. Sex/gender is thought to be an important learner variable, which was also found in this study showing that females employed many more strategies than male students. That is, to understand the lecture, female students used higher critical thinking skills, visualized the situation discussed in the lecture, and used their background knowledge, etc. (see Table 2). Such a difference has been, in fact, already found in the literature (e.g., Ehrman and Oxford 1989; Green and Oxford 1995). As to any possible reason, Oxford et al. (1988) argued that it is because of the interactive nature of females that they show an advantage over men. As a biological explanation, Legato (2005) suggested that females use both right and left side of their brain, thus they were good at language development, while Kızıltepe (2003) argued that male students tend to be less attentive to their studies than female students.

According to whether students are in full EMI context, where they receive only English medium instruction, or partial EMI context, where they generally take one course per semester in English as medium of instruction, the strategies that they used changed significantly. The students who were receiving a full English medium instruction paid more attention to listening to the lecturer and coming to class prepared before the lecture, while those receiving only one English medium instruction course per semester, namely a partial EMI context, tried to remain alert, get the main idea, and understand the lecture. As can be seen, when students do not have

much exposure to English medium instruction, as in the partial EMI context, they start to use different strategies, generally endeavoring to understand the lecture by getting the main idea.

The study also found a significant difference in the strategy use from first year to final year students. When compared to the other classes, notably senior students (fourth graders) were found to have the highest mean ranks, which were all statistically significant. According to the results, when students were at fourth grade, they tried to remain more alert, attended to classes more regularly, concentrated on the topic, listened more carefully or audio recorded the lecture, asked questions, took advantage of content schemata or imagined different situations related to the topic, thought more critically, tried to understand rather than memorize, and internalized the information. According to Haggis (2003) and Marshall and Case (2005), learning at higher education occurs at two levels: surface and deep. The students at surface level do not question or criticize the information introduced (Entwistle and Ramsden 1983), generally leading to memorization or rote learning (Entwistle 2001), while at deep level the topic is discussed in the class allowing the students to ask questions, exemplify their ideas, and integrate what they have learned with what they know. According to Ramsden (2003), deep learning occurs when students find the task relevant to themselves, which will lead to higher level of understanding the concepts or theories (Entwistle and Ramsden 1983). The fact that fourth graders in this study generally espoused a different approach to their learning situation than the other graders also accords with the results found by Kırkgöz's (2013) study, in which first graders showed "a tendency towards surface learning" (p.30), while fourth graders chose to learn by making associations between concepts rather than memorizing them.

In addition, significant differences were found according to the students' major/department. International trade students, for instance, used significantly more strategies than those in Business Management, Electronics and Communication Engineering, and Agricultural Biotechnology. International trade students seemed to remain more active, attended classes more regularly, asked questions, used their background knowledge, translated what the lecturer said, imagined different situations related to the topic, and thought more critically, while Agricultural Biotechnology students tried to understand the lecture rather than memorize and probably because of this, they generally audio recorded the lecturer. The fact that the students from different departments used different strategies has been also found by the earlier research conducted on subject teachers/lecturers. For instance, İnan et al. (2012) investigated perceptions of 85 content area teachers on the importance of English language skill at two universities in Turkey. Their study similarly revealed that there were differences among lecturers from different departments not only between skills (e.g. reading, writing, listening, speaking) but also within the skill itself (e.g. writing). This was encountered in the comments section of this study, which likewise showed that students from different departments looked for a different aspect of vocabulary coverage in the lecture. For instance, while a student from international trade was looking for whether the word used in the lecture is difficult or not, another from electronics and communication engineering was paying atten-

tion to key words related to the lecture. In addition, students' comments showed that thanks to their individual effort students from both business management and international trade were giving greater importance to doing some research before the lecture and repeating/revising what they have learned after the lecture at home to understand it.

As to correlations, the higher GPA students' responses were found to have a significant relationship to six questionnaire items, indicating that the students having higher GPA scores were generally more active in the lecture, put effort to get all the information in good shape either taking notes or audio recording the lecture, both used background knowledge and imagined different situations related to the topic discussed in the lecture, and aimed to clarify what they know.

## *5.1 Pedagogical Implications*

A variety of implications can be drawn from the results of this study for different EMI contexts.

First, EMI lecturers or subject teachers should become aware of the fact that the students especially in expanding circle countries (e.g. Turkey) may have traditional study skills because of their traditional education background. That is, because many of the students may not know about how they can juggle with so many things in the class such as while listening to the lecturer on the one hand, taking notes or following power point slides on the other, not in their mother tongue, but in English spoken as a foreign language, they should be equipped with knowledge of metacognitive strategies. These strategies when especially given by subject teachers/lecturers are more likely to enhance students' awareness of strategy use effectively to understand the lecture. In addition to knowing some metacognitive strategies to survive in an EMI course, according to a recent study conducted by Soruç and Griffiths (2017) it was also found by stimulated recalls that students needed to know some affective strategies, namely how to "manage their emotional reactions such as shyness, embarrassment, boredom, distraction" (p. 9). Therefore, EMI lecturers as well as students need training and support.

Second, when teaching strategies or increasing students' awareness toward strategy use, as with the difference from first year to final year students in this study, especially freshman year students could be taught to adopt a "deep learning approach" such as imagining different situations or conditions related to topic (item 24), understanding rather than memorizing (item 29), or trying to internalize the information (item 32) (e.g. Kırkgöz 2013) rather than adopt surface learning strategies (such as memorizing).

In addition, it is important to consider how strategy instruction is given. For instance, according to the results of this study, activating background knowledge or schemata is very important to understand the lecture(r) for international trade students (mean rank = 53.82), while it is not that important for business management students (mean rank = 31.65). The same can be found in critical thinking skill

and imagination of different conditions to understand the lecture(r). Therefore, schema building activities should be well prepared by the lecturers before the class considering students' different needs in their major. Furthermore, while preparing course content or classroom materials, especially on the language level of the materials, subject teachers/lecturers should collaborate with language teachers. Such collaboration was found to be "highly beneficial" (Macaro et al. 2016, p. 51), because different backgrounds of both lecturers and language teachers brought about "change in content delivery" (ibid. 2016, p. 69) in EMI contexts at higher education. At the end of their collaboration, subject teachers/lecturers in Macaro et al. (2016) became aware of the fact that they should focus on their language proficiency as well, not only students', and thus that their language proficiency needs to be high enough in 'identifying and addressing students' language problems in their classes instead of merely expecting them to be ready for EMI when they arrive' (p. 70). Because of different needs of students in different majors, teachers should help them try 'certain strategies or different kinds of skills practice' (Graham 2006, p. 179) or students can be allowed to adopt some strategies such as asking the lecturer the content of the course in L1 (e.g. Airey and Linder 2006; Tarnopolsky and Goodman 2014). Such a case was also recently found in Fujimoto-Adamson and Adamson's study in this book (Chapter 11), who investigated practices and perceptions of two EMI practitioners at two Japanese universities. According to main result, as can be understood from the title of the chapter, it was found that hybrid practices were encountered when moving from EFL to EMI context, which emerged as the use of two languages in EMI courses, namely translanguaging, for discussions, background reading, etc. Given that using the languages interchangeably is thought to foster "choice" at least for some students, as Doiz et al. (2013) put it, such kind of practices can be viewed as "bilingual supportive scaffolding practices." (p. 213). Also, for a better overall quality of student learning, both universities and lecturers could take responsibility. Not only should EMI teachers "lower learning anxiety of local students" (p. 77), but also EMI universities should activate supporting systems or provide 'resources to support their students' English language learning.' (Huang 2015, p. 77). According to Kırkgöz (2009b) 'university teacher education programs need to be revised and updated.' (p.680)

Finally, although it is not possible to establish cause and effect relationships in correlational statistics, it may be still worth considering what higher GPA scorers generally do in the lecture to understand it, especially given the results of studies revealing the ineffectiveness of English language instruction in EMI universities in Turkey (e.g. Kırkgöz 2009a; British Council 2015). Therefore, when strategy training is given at least to some students who want to compete with the others on the international market (e.g. Graddol 2006), students should become aware of how it is necessary to be alert in the class, to get all information in good shape either by taking notes or audio recording the lecture(r), to take advantage of background knowledge, to imagine different situations or conditions related to the topic discussed, and to specify or clarify what they know during the lecture.

### *5.2 Suggestions for Ongoing Research*

Although the study was conducted with a limited number of EMI students from four non-English-related departments at three universities in Turkey, its results have still revealed some important insights for further research to generalize what was found in this study.

First, future research studies could involve many more participants from a higher number of universities, in different contexts, particularly investigating any difference in the strategy use between those at state or private universities. Second, the instruments for data collection should be varied, including stimulated recall protocols to find what students really think at the time of the lecture, or oral interviews to ask students to elaborate on what they really think or use as the strategy and why they use it. Also, not only subject teachers but also English language teachers at prep year programs should be involved as important stakeholders of EMI programs; what they think about students' strategy use and/or whether/what strategies they teach to help their students to survive in the lecture should be researched (e.g. Macaro et al. 2016). Further studies, especially studies conducted by language teachers such as action research (e.g. Dikilitaş and Griffiths 2017) however difficult it seems to be for them could be carried out. Finally, experimental studies can be conducted to explore whether strategy training in an EMI context is effective in promoting strategy use and students' success at understanding lectures.

## 6 Conclusion

This study investigated the strategies that EMI students used to comprehend their lecture(r)s, which, according to results, changed depending on gender, context, classes, and major. It also found what higher GPA scorers generally prefer to do to comprehend better, by running correlational statistical tests between GPA scores and questionnaire items. Qualitative data obtained by students' opinions also displayed complementary results; that is, students' comments were consistent with the questionnaire items. With larger numbers of students, including both subject and language teachers, in a variety of departments, future studies can yield more generalizable data in order to understand what EMI students generally do while listening to the lecture.

# Appendices

## *Appendix A: Listening Comprehension Strategy Questionnaire*

Dear student: We are doing a research study about your listening comprehension strategies. The result of the questionnaire is only for research and we will keep your personal information confidential. Thank you for your cooperation!

PART A. Background Information

Name: _____ Surname: _____
Age: _____
Gender: Male ( ) Female ( )
Major/Department: _____
Class: 1st Grader ( ) 2nd Grader ( )3rd Grader ( )4th Grader ( )
Took Preparatory Year: Yes ( ) No ( )
Nationality: _____

PART B. Listening Comprehension Strategies

Now please read the following list of comprehension strategies. Please mark each one according to whether they reflect your opinion or what you do during the lecture to understand it much better.

| 1- Always untrue of me | 2- Generally untrue of me | 3- Neutral | 4- Generally true of me | 5- Always true of me |
|---|---|---|---|---|

| No | When I am listening to the lecturer, I… | Rating (from 1 to 5) | Any comments? |
|---|---|---|---|
| 1 | Keep my attention high level | | How do you do that? |
| 2 | Try to remain alert/ active | | What specifically do you do? |
| 3 | Sit in the front row | | |
| 4 | Come to class prepared before the class | | What else? |
| 5 | Attend classes regularly | | |
| 6 | Participate in the classroom activities | | |
| 7 | Concentrate on the topic | | |
| 8 | Concentrate on lecturer's voice tones | | |
| 9 | Listen to the lecturer carefully | | |
| 10 | Try to keep up with what the lecturer says | | |
| 11 | Audio record the lecturer | | |
| 12 | Ask questions | | |
| 13 | Give examples | | |
| 14 | Ask for examples | | |
| 15 | Take notes | | |
| 16 | Try to understand instead of taking notes | | |

| No | When I am listening to the lecturer, I… | Rating (from 1 to 5) | Any comments? |
|---|---|---|---|
| 17 | Try to get all information in good shape | | In what language do you take notes? |
| 18 | Improve topic knowledge | | |
| 19 | Improve topic interest | | |
| 20 | Try to remember my old knowledge | | |
| 21 | Use dictionary | | |
| 22 | Guess the unknown words from context | | |
| 23 | Translate what lecturer says | | |
| 24 | Imagine different situations and conditions related to the topic | | |
| 25 | Visualize the situation | | |
| 26 | Try to think out of the box | | |
| 27 | Think critically | | |
| 28 | Specify / clarify what I know | | |
| 29 | Try to understand rather than memorize | | |
| 30 | Try to get the main idea | | |
| 31 | Try to make the class active | | |
| 32 | Internalize the information into myself | | |
| | Any other strategies you use… | | |

I consent to these data being used for research and/or publication:
_____ (signature)

## *Appendix B: Factor Analysis Using Principal Component Analysis and Equimax Rotation with Kaiser Normalization*

| Component Matrix[a] | |
|---|---|
| | Component |
| | 1 |
| A14 | .747 |
| A6 | .699 |
| A21 | .694 |
| A27 | .664 |
| A17 | .645 |
| A1 | .644 |
| A20 | .614 |
| A19 | .609 |
| A25 | .605 |
| A16 | .595 |
| A2 | .595 |

(continued)

| Component Matrix[a] | |
|---|---|
| | Component |
| | 1 |
| A24 | .595 |
| A37 | .584 |
| A10 | .574 |
| A22 | .572 |
| A34 | .550 |
| A18 | .532 |
| A7 | .515 |
| A11 | .515 |
| A15 | .512 |
| A31 | .510 |
| A13 | .496 |
| A28 | .488 |
| A9 | .472 |
| A5 | .441 |
| A4 | .430 |
| A30 | .429 |
| A26 | .412 |
| A36 | .388 |
| A33 | .357 |
| A32 | .347 |
| A3 | .328 |
| A35 | |
| A29 | |
| A8 | |
| A23 | |
| A12 | |

Extraction method: principal component analysis
[a]1 components extracted

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# Part IV
# ESP, CLIL and EMI

# ESP/EAP in University Programs in a Non-target Language Community – Issues and Challenges

**John O'Dwyer and Hilal Handan Atlı**

**Abstract** English-medium Instruction (EMI) in universities in non-English speaking communities such as Turkey brings advantages but also challenges. This chapter explores the curriculum, pedagogy, and standards with reference to the Turkish EAP context where students are placed in EMI universities and programs through a nationwide exam in which English plays no part. These universities employ a complex system of preparatory programs to ensure students, many starting at an elementary level, reach an appropriate English level within a limited time-period. How this level of English is defined and what English for academic purposes (EAP) entails in these contexts are moot issues. Concerns are raised as to whether, at entry to faculties, students and lecturers can sustain learning in the medium of English due to language levels, the common L1, a lack of pedagogical training for content lecturers, or a lack of general academic skills in the school population, or other such factors. The nature of general academic skills and the broader role of language instructors in EMI contexts are discussed, as is the role of assessment in EAP in this context. Fundamental to the development of effective EAP for EMI in non-Target language communities is the training of language and content instructors for which suggestions are made. The conclusion raises doubts about the capacity of systems currently in place in English-medium instructions to provide sustainable solutions to challenges being faced.

**Keywords** English for academic purposes · English medium instruction · English for specific purposes · Non-target language community · Second language learning · University preparatory programs

J. O'Dwyer (✉)
Graduate School of Education, Bilkent University, Ankara, Turkey
e-mail: johnbod@bilkent.edu.tr

H.H. Atlı
School of English Language, Bilkent University, Ankara, Turkey
e-mail: hilal@bilkent.edu.tr



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## 1 Introduction

The increase in international student mobility due to, amongst other things, the Bologna process in Europe and the undoubted desire for countries around the world to develop their access to international markets, has put pressure on universities to cater for a burgeoning population of migrant learners. Many universities in target language communities, notably the UK, Canada, and the USA, cater for students who aspire to gain an internationally recognized qualification and to familiarize themselves with the culture in the target language country.

However, many are the students who, while remaining in their own countries, still wish to reap the benefits of an education in the English language, which would allow them access to heightened opportunities in job markets. They are responding to a growing connection in their own countries to the global economy in which English plays an important role as a tool for business and wealth creation. In many European countries, and other nations such as China and Middle Eastern countries, a rush to open university programs in the medium of English has meant that opportunities have increased for study in the home country, also providing substantial cost benefits to the customer relative to study abroad. These initiatives have sometimes been seconded by universities from the target language communities, notably in China and the Gulf countries, or have been set up based on models from those contexts. Non-target language countries such as Turkey also benefit from migrant students who also wish for an English language education, through competing with target language countries on cost, although numbers are a relatively modest proportion of the total university population, just over 30,000 at the time of writing but with a target set of 150,000 by 2020 (ICEF Monitor).

This chapter considers the broad issues and challenges associated with the teaching of ESP/EAP in English Medium universities outside the Target Language Community (TLC) with reference, in the main, to the Turkish university sector of which the authors have had long experience. Disagreement exists as to the effectiveness of studies in the medium of English, part of which is attributable to a debate as to whether ESP can deliver standards of scholarship and understanding on a par with what would be considered the norm in first language contexts. English for Specific Purposes (ESP) might be better termed English for Specific Countries or Contexts (ESC), in view of the issues surrounding its implementation. As the discussion below illustrates, conditions prevailing in the education system at large, difficulties associated with maintaining the second language in universities where learners and instructors share a common first language, as well as a dearth of professional learning opportunities for both language and content instructors in ESP/ EAP settings, amongst other factors, make it difficult to extrapolate beyond the context itself. The historical connection of certain countries with the second language culture shortens the length of the bridge to be crossed in instituting effective ESP/ EAP in English medium universities, whereas those without such a past travel a longer road. The text starts with a presentation of challenges in non-TLC contexts such as

Turkey, goes on to discuss the vagaries of student entry into EMI university programs, before looking at challenges surrounding the design of the curriculum and associated assessment, and staffing concerns.

## 2 Challenges for ESP/EAP in Non-target Language Communities

The teaching of English for Specific Purposes (ESP), of which English for Academic Purposes (EAP) is a subset, encompasses the catering for specific needs, whether academic or occupational. Education for specific purposes is not confined to second language learning contexts and remains a challenge in first language contexts, too. However, in universities set up outside the target language community (TLC) an additional range of issues is present at the level of ensuring that learners meet the language requirements of their intended courses of university study. The first of these issues revolves around whether EAP taught in non-target language communities can equip students to function on a par with their counterparts in target language communities. A second relates to the design of an ESP/EAP curriculum. If students do not possess the target language on entry to English as a Medium of Instruction (EMI) universities or programs, what pedagogical conditions are needed to ensure that students achieve the competencies required to be able to successfully complete their studies in the medium of English. A third issue concerns detailed questions of level, course content and means of assessment in an ESP/EAP curriculum and how language performance is measured to ensure that necessary EAP skills are available to learners. A fourth issue involves ESP/EAP provision once students are in the faculties, and begs the question as to what distinguishes such faculty-based courses qualitatively from what might be expected in a curriculum designed to help learners achieve minimum access levels of proficiency.

A further set of considerations in ESP/EAP provision relates to the capacity of English medium universities or programs outside the TLC to deliver courses which are truly in the medium of English and ensure that the outcomes of students reflect specified curriculum aims on a par with counterparts in target language communities. Evidence in the Turkish context suggests that, where the learners and instructors share a first language, this is a challenge (Arkin 2013; Kırkgöz 2014). A related concern is whether teaching staff possess the necessary language competence and teaching skills to supervise EAP development in their students in a second language. Even if they do possess the necessary linguistic background, doubts may surface as to whether they possess the necessary professional education in EAP to ensure effective acquisition of EAP skills by students. As Räisänen and Fortanet-Gómez Chalmers note ‘teaching in English is a different issue altogether, requiring not only linguistic and communicative competence, but also, which has been far more difficult to realise, a re-evaluation of one’s pedagogical approach’ (2008, 7). If such education is provided, its shape is an issue, as is the level of instructors’

content knowledge and skills, and how these are combined into effective tuition. Both content and language instructors' awareness of the language levels of their students on entry into programs and courses, and the measures they adopt to support their students' further linguistic development, are further major considerations (see Dearden 2017, in this volume). In homogenous populations of students, the temptation to resort to translation looms large and might appear an attractive fall-back technique. This begs the question as to how instructors can encourage students to participate in the target language as the possession of a common L1, and a lower than optimal level of articulateness in the L2, may conspire against use of the L2 for learning. However, a literature is forming in which the combined use of L1 and L2 is deemed an acceptable instructional approach for EMI contexts (Karataş 2016). Finally, an assumption must be that assessment is carried out in the target language, English in this case, so a further concern must be the impact of the above issues on assessment formats and whether the formats adopted encourage the growth of the needed academic skills, or whether content transmission approaches become the norm. Where students' prior learning has been with a discrete-point testing approach, for example, with 'little requirement to process and produce texts', development of communicative competence will be an important EAP course objective (Bruce 2011, 41).

A third area for consideration relates to the provision of resources to support the learning of EAP. Are university administrations aware of the support needs of students who are operating in a second language outside the target language community? If so, how do they provide support? Does access to technological and library facilities compensate for the lack of direct access to the second language outside the university complex? (Staub 2017, in this volume, suggests implementing an accreditation framework to evaluate EAP provision). Thus, student views are crucial in assessing whether their experiences and expectations in EAP outside the TLC are being met, despite not having a basis for comparison with study in target language communities. Students may not be able to compare directly with the latter, but, in many contexts in Turkey, for example, they are surrounded by their peers studying in their first language in Turkish medium programs, or institutions, as illustrated by Kirkgöz (2014).

## 3 ESP/EAP in the Turkish University Sector – A Context

In the Turkish university sector the English language needs for students with low level English at entry must be addressed. Such needs are in some ways unique to EMI in non-target language communities. In L1 contexts international students generally arrive with English language levels vetted beforehand, and they can use the resources in the L1 community to help acquire the needed language and academic skills. This does not mean that they have an easy time of it, but certain of the issues broached above are attenuated: the classroom environment enhances English as a communication tool for sharing learning, often amongst students of different

nationalities; and the TLC is just outside the door (Braine 2002). Vetting language levels prior to acceptance in TLC contexts is an advantage, and is not available to EMI institutions in Turkey. All Turkish Universities, whatever their language of instruction, are part of the university placement system. English language performance is not taken into consideration when placing students in EMI university programs, or other programs for that matter. An optional national English test does exist, but is only requested for specialist areas such as English literature.

Turkey currently has 178 universities; just over one hundred state institutions, and the remainder private foundations. All universities are part of the state university placement system run by the Higher Education Council (YÖK). Teaching in the medium of English in Turkey has a long history. Middle East Technical University, set up in Ankara in 1954, was English medium from its inception as was Bilkent University, the first private foundation, set up in 1984 on a neighbouring campus. Bosphorus University in Istanbul morphed from an American college in the 1970s. Together with Koç and Sabancı Universities, both founded in the 90s, all these institutions teach in the medium of English. Four of them are currently in the top 500 world-wide (Times Education 2017). Thus, on the back of customer demand, other universities in Turkey have invested heavily in setting up English medium programs, either committing the whole university to study in English, or, within some universities, just certain high-profile faculties and/or departments, particularly engineering and medicine. Some first-degree programs, mainly taught in Turkish, have a required number of courses in English.

Students are registered to the department of their choice based on their ranking in the national university entrance exam. Universities with English as a medium of instruction (EMI) require a sophisticated network of preparatory programs to ensure students meet the minimum English language requirements prior to study in students' chosen faculties. At the time of writing, students can stay in these programs for up to 2 years at the end of which they are dismissed from the university if they have not succeeded in the exit level English proficiency test. Such tests are set and monitored by the universities themselves. Universities which require only a portion of their undergraduate courses to be in the medium of English may require students to attend a preparatory program for a maximum of 1 year, under YÖK regulations. Such students can then enter their freshman year even if their English language results are poor. Students may opt to present international English proficiency scores, for example, TOEFL or IELTS, to meet entry requirements, the thresholds for which are specified by university senates.

A substantial number of students pass through preparatory programs due in large part to poor English learning in the primary, middle, and high school sectors, which has been the subject of critical review (British Council-TEPAV 2013). Despite the extension of English to lower primary classes by the Ministry of Education (Kirkgoz 2009), poor standards persist at high school graduation (see Alonso-Belmonte and Fernández-Agüero 2017, in this volume for a Spanish perspective using CLIL). EMI universities can expect, therefore, to have 50% or more of their yearly intake at beginner or elementary levels, with only about 20% capable of direct entry to faculties (O'Dwyer 2008). In a university of 10,000 full-time students with 2000

new undergraduates, this translates into a direct intake of 400 into faculties, with 1600 placed in a preparatory program, at least 800 of whom will be of low English competence. Preparatory program student numbers can represent a large part of a university's population, say 2300 in the example, if those placed at elementary remain for a second year. Preparatory programs are a challenge in the Turkish context at least, from both an administrative and a customer perspective; they may employ between 50 and 150 English language teachers, and a good number of their students would rather be in the faculty courses. They can a create a cadre of learners, at times querulous and demanding, many of whom will fail to achieve the required proficiency for entry into their faculties.

The challenges of teaching ESP in the Turkish university context, then, start with low level learners in preparatory programs, who need to develop English for Academic Purposes (EAP). Preparatory programs differ but they generally consist of a placement test, several levels to get through, with success measured by an exit test. Some programs operate on a semester basis, with no opportunity for students to change level groups over the course of a semester, confining students to over 400 h of learning without the opportunity to advance based on performance. More recently, programs have divided the learning cycle into 7 or 8 week courses, allowing more homogenous grouping and more rapid progress based on performance.

The Common European Framework of Reference (CEFR) for Languages has become a benchmark to set the minimum requirements for preparatory programs. Most state a B2 level requirement, but few are the institutions which have gone through a process of standard setting; for an example see Kantarcıoğlu et al. (2010). Programs depend in the main on their own understanding as to what constitutes a suitable English entry level into faculty, which opens programs to the charge of not reliably determining the needed level of EAP. Poor pass rates exert a downward pressure on entry level due to high dismissal rates as universities may find pass rates unacceptably low and seek ways to buffer this (O'Dwyer 2011). Large student numbers may promote language testing weighted towards testing receptive skills, mainly reading and grammar, without productive skills, viz. speaking and writing, two key EAP skills.

In the faculties students are enrolled in English language credit bearing courses, generally English 101/102 or Composition 101/102. Some departments may offer English beyond freshman for specific academic purposes; e.g. report writing for business, project writing for engineering, medical terminology, or primary texts for philosophy. The format of freshman English must meet the needs of students who enter directly, or those from preparatory programs. Direct entry students' English level, as they come from different English learning backgrounds, may be higher, which may complicate matters (Ateşkan et al. 2015). For example, those with an International Baccalaureate Diploma have a different skill set, which includes academic writing, to those who have gone through a more traditional language program. In Turkey university entry requirements do not promote first language writing skills due to multiple choice question exam formats. Hence reliance on L1 to L2 skills transfer is not tenable. Some programs used to deal with disparate language levels by differentiating the number of hours given in the Freshman English language

programs according to level determined by the English language proficiency test for entry to the faculties; either 5 or 3 h per week.

## 4 ESP/EAP Curriculum Design Issues in English Medium Programs in Turkey

The discussion above emphasizes the difficulties of EAP in non-TLC contexts. Even where English language levels are homogenous, previous learning backgrounds, variability in content discipline needs, content instructor views on English language instructor involvement in teaching elements of their subject, and other considerations, conspire to make the design of the ESP/EAP curriculum a challenging one. An ESP/EAP curriculum should ideally encompass both the needs of low level learners as competence increases, of freshman students, and ESAP for specialist subject needs, which may be very different one from another in terms of subject matter, research tradition, genres, lexis, and required language skills (Bruce 2011).

ESP/EAP is also about incorporating broader academic skills so that language programs contribute to academic development not defined uniquely in terms of language, such as study skills, time management, organised planning, or approaches to effective learning. Or, EAP/ESP may incorporate twenty-first century or life skills, developing in students the ability to cope with the challenges facing society and the need for flexible, organised, and creative thinking to respond to those challenges. As O'Dwyer states, within language learning academic contexts

> 'simply imparting (language) skills is not enough'. We 'should include work in developing learners' thinking skills: analytical inquiry-based thinking which encourages students to explore a context; critical thinking which focuses on evaluating evidence and making informed choices; problem-solving which confronts learners with scenarios, projects, cases from real life in which the use of skills is contextualised' (2013, 5).

Additionally, a case can be made for EAP to be a vehicle for developing social responsibility and an ethical stance towards life in the community, be it the university or the wider world. Such a broad approach to EAP is particularly apposite in a university context where a language teacher is considered an educator, part of an educational team delivering the wider educational goals of a university (O'Dwyer 2013).

Writing is an integral part of EAP in a university setting, as a test of appropriate language use in specific discipline areas and the ability to display the broader academic skills outlined above. Written academic conventions may differ from the L1, discounting script complications. The EAP curriculum would focus on new forms and genres on the assumption that students possess an L1 writing culture. However, in university entry exams with no extended writing, students arrive with little formal writing experience in the L1, meaning that EAP writing entails a more onerous path. Research suggests that International Baccalaureate Diploma (IBD) students transit

their degree programs more quickly (Ateşkan et al. 2015), explained in part by their English level at entry and in part by the IB Diplomas heavy weighting towards academic writing and critical thinking. Thus, an ESP/EAP curriculum would be reliant on a needs analysis to evaluate a learner's previous learning, transferrable skills, and subject area requirements.

Therefore, EAP curriculum design in a non-target language community presents design challenges. Preparatory programs in Turkey typically adopt a general English approach, using level specific general English textbooks leading towards an exit level proficiency exam. Specific needs may not have been broached prior to faculty entry as English for general Purposes (EGP) textbooks do not necessarily cater for the academic market. A range of English for General Academic Purposes (EGAP) textbooks have appeared; for example, *A Course in English for Academic Purposes* by de Chazal, McCarter, Rogers and Moore (2012), although not seen as a positive development for ESP/EAP by all (Gillet 2013). ESP/EAP in faculties depends crucially on the type and level of English of students at entry to their departments. In institutions where an entry level benchmark has been empirically established at B2, then operating in the medium of English and continuing with English for Specific Academic Purposes (ESAP) is feasible, particularly if EGAP was taught in the prior curriculum. Students entering at, say a B1 level on the CEFR, would be hard pressed to deal with courses in the medium of English. O'Dwyer et al. (2017) provides empirical evidence to show that entry scores as measured by the TOEFL iBT correlate with performance in a Freshman EAP program. Those with entry scores below a B2 boundary experience greater difficulties in English, as measured by their ENG101/102 GPA, their English instructors' comments, and by performance in content courses as measured by CGPA.

English for vocational or occupational purposes (EOP) is also a key area, an integral part of EAP in the university context. EMI universities aim to equip students to function in the target language in the sectors of the economy to which their qualifications relate. Teaching EOP is sought-after in academic disciplines such as Science and Technology (Parkinson 2013), law (Bargiela-Chiappini and Zhang 2013), business (Northcott 2013). Students whose undergraduate degrees are more vocationally-oriented, English in the workplace (Marra 2013), such as in Hospitality Management, Information Technology, Nursing (Bosher 2013), Aviation (Moder 2013) have more specific needs, not necessarily academic. Two-year associate degree courses are often directly connected to a profession, such as Graphic design, Fashion Design, Tourism, Culinary Arts, Accounting and Taxation. Such 2 year courses present a dilemma for ESP/EAP in EMI. Language achievement in the Turkish context may be lower amongst students who access 2-year Associate Degree courses due to lower required scores in the national university placement test. Some English medium universities have in the past set lower English language boundaries for entry to the freshman year for these students (O'Dwyer 2011), with consequences for teaching content courses in the medium of English.

Creating a coherent ESP/EAP curriculum depends also on the administrative and leadership arrangements for the management of programs and in-faculty English language support. In many EMI contexts in Turkey, preparatory and in-faculty EAP programs are separated within Schools of Foreign Language, or Schools of English Language. English instructors enjoy a lesser professional status within the academic community and may be viewed as peripheral to the main job of a university in some contexts. The senior managers appointed to run language programs may be academics with no background in language teaching, and no teaching qualifications for that matter; thus, they may be unaware of the development, delivery, and assessment of language curricula. Language requires a teaching and learning culture which university departments, fragmented into research interests, may not share. A strong argument exists for language curricula to be a continuum, designed as a logical whole, under a single leadership. Contacts with departments would then allow pooled resources to meet the needs for English for Specific Academic Purposes.

## 5 Curriculum and Assessment in ESP/EAP in the Turkish Context

Preparatory programs in Turkish EMI universities approximate to pre-sessional courses in universities in target language contexts, and they offer 400–800 h of tuition per academic year, in one or two semesters respectively, with typically 25–30 h a week. Progress tests lead to summative level exams at the end of courses. The proficiency exam at the end of a preparatory program often follows the same pattern as progress tests and level exams. Education for academic purposes encompasses broader educational aims, study skills, life skills, or whole person skills, as discussed above, and if analytical and critical thinking are also deemed essential, then the shape of assessment and program design should reflect this. Assessment formats generally used in summative type tests do not develop students' ability to write extended texts, to build an argument, to critically appraise viewpoints, to organize learning effectively, and so forth. Academic skill development requires reflection, feedback, and time; no academician writes articles in an examination room. Course design, along with teaching and assessment processes, needs to provide space for formative assessment, combined with regular 'developmental feedback' (Bruce 2011, 208).

Programs with a quiz-based approach to assessment, with no recourse to projects, term papers, lectures, articles, or research activities, find themselves hard pressed to cater adequately for academic needs. Traditionally, preparatory programs provide students with some familiarity with general academic discourse through skills teaching, with short writing outcomes, and a level of oral competence. As most students in English-medium education in Turkey transit preparatory programs, those entering their freshman year will not have received intensive training in writing extended academic discourse, in engaging in seminars or discussions, or in criti-

cally appraising texts and writing summaries. Those students entering directly to their departments, on the other hand, may already be familiar with EAP depending on their backgrounds, although our experience has shown that only a few have high level EAP skills.

Freshman English programs are faced with the challenge of defining what academic needs to target, and the way to do so. A traditional needs analysis may not be feasible, as de Chazal (2014) points out, in the everyday fray of teaching. However, some programs have instigated a substantive needs analysis when considering major curriculum change. Bilkent University, the first English medium foundation university in Turkey, commissioned a university wide needs analysis in 1992–1993 as a precursor to major curriculum change focussing on EAP in the wake of poor student performance. The university-wide study was carried out with the help of consultants leading a team of a small team of instructors internal to the program (Allsop et al. 1993). This was followed up with a colloquium which brought together members of the teaching staff of the faculties, once the new curriculum had been put into operation, 'to familiarise themselves with the current English Language Curriculum in the Preparatory Programme' during which 'members asked questions and discussed areas of concern' and made suggestions (O'Dwyer 1994, 2). This led to a second colloquium at which communication with the faculties was continued as the curriculum developed.

Freshman programs in EMI in the Turkish context, for example ENG101/102 or COMP101/102, are often a prolongation of the preparatory program with a similar approach, based on a text book, assessed through mid-term and final exams, echoing the format of other faculty credit courses. Some EMI institutions, however, have gone for a Freshman approach which focusses on English for General Academic Needs and requires students to learn the conventions of academic writing, including summary writing, annotated bibliographies, relevant genres, referencing, term papers, as well as integrating writing with informal and formal presentations, the latter being linked to a research paper, although not faculty specific. Assessment is formative in providing regular feedback and re-scripting of written texts, and credit is given throughout a course for work undertaken, as opposed to using traditional summative formats. Bilkent University, mentioned above, follows such an approach, with each instructor developing their own academic content for each semester long course, thus ensuring a range of interest for students, but with all instructors tied into a program wide specification of common EAP objectives to be achieved. The ENG101/102 course typically involves 5 contact hours a week over two 14 week semesters. The program is given high status in that it is the only Freshman program with a minimum pass grade of C for ENG101; students who do not achieve this must repeat the course, which eliminates the possibility for students to fail the course, still meet grade point average criteria, and pass the year.

## 6 Training in ESP/EAP

Training for EAP and content instructors is a crucial part of delivering a program which meets the specified needs of students. Teaching English for Academic Purposes (TEAP) courses exist (BALEAP) which cater for the would be or seasoned practitioner. However, firstly, it seems essential for EAP instructors to be able to write acceptable academic discourse if working, for example, in Freshman programs of the type described above. Thus, a logical follow-on from this would be to have a selection mechanism for EAP instructors in which they were required to display the ability to write an academic essay, using suitable academic conventions. A belief certainly exists that anyone who has a university degree should be able to meet such a criterion, but the reality is that not all international or local staff in the Turkish context have this ability, for reasons related to their own academic careers, backgrounds, or levels of language. Secondly, a TEAP program should help the instructor acquire the skills needed for designing an EAP program. This might start with a recourse to the literature on EAP and an exploration of the field. Then the training program could assist the instructor to design an EAP course which would be put into practice over a semester, say, and which would be evaluated as it progressed, leading to an academic paper towards the end of the training program, outlining the implementation of the EAP course, with recommendations. Such a reflective practitioner approach would focus on 'localised and specialised knowledge' (Sharpling 2002, 91). This template exists in one in-service context in Turkey, leading to an in-service certificate in EAP.

However, it appears common in Turkey, and elsewhere, for EAP to be taught by ELT teachers, without them having had specialist training in EAP. This may be acceptable in preparatory and Freshman programs which teach general English, but where a university aspires to provide an English medium education, then EAP would be best served by specialist, hands-on in-service training. 'Higher institutions are beginning to acknowledge that EAP teaching requires areas of knowledge and skills that go beyond those considered necessary for general language teaching' (Bruce 2011, 105).

The other side of the training coin involves the content faculty in English medium education. Little is apparent in the Turkish context to ensure that lecturers in the content areas are given in-service training to help deal with students whose English may be at a level where they still need support to be able to follow their main subject courses (see Dearden 2017, in this volume). Some have instituted Centres of Excellence (see Şahin et al. 2016) which have a general aim of developing subject instructors' skills, and which also deal with language issues, but which are not providing fully-blown courses as such. Others have explored the use of both L1 and L2 in the delivery of EMI (Karakaş 2016). The provision of in-service training for subject lecturers seems an area which is poorly developed in the Turkish context, although it is gaining coin in other contexts such as UK universities, for example the

Post-graduate Certificate in Higher Education course (PGCHE) at Nottingham University (Nottingham University). Given the challenges of EMI in the Turkish context where many students struggle to meet the demands of English in their chosen department, creating awareness and techniques for subject instructors is an area for development.

## 7 Conclusion

The complexities of English Medium Education in non-target language communities are daunting for the EAP practitioner. The school system in Turkey is challenged in delivering quality English education for students wishing to study in the medium of English. This inevitably means that most students going into EMI institutions must go through a preparatory program, many of them starting at the lower levels. Bringing them up to a notional CEFR B2 level within the time constraints imposed by the Turkish Higher Education Council is difficult. Some doubt persists as to the number of institutions able to meet such requirements.

Teacher education courses are needed to develop perspectives and practices of EAP within the EMI university sector, along with professional learning opportunities for content lecturers, so that practices can reflect needs. Initiatives which favour collaboration between language and content instructors would further enhance learning in EMI contexts.

Thus, EAP in the national context discussed here, with some exceptions, rarely appears to escape from English for general purposes (EGP), the output level of which has mostly not been verified through empirical study. This raises doubts about how well-founded an EMI policy is in the context. The feasibility of the development of a level of academic English, both general and specific, which serves its purpose, is open to question. The context should be subjected to further research focussed on curriculum development, course delivery and assessment standards, and professional training for instructors.

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# The C of Cognition in CLIL Teacher Education: Some Insights from Classroom-Based Research

**Isabel Alonso-Belmonte and María Fernández-Agüero**

**Abstract** This chapter aims at describing real foreign language (FL) teaching practices in state bilingual schools in the Region of Madrid (Spain) through the lens of the teachers involved in Content and Language Integrated Language (CLIL) settings. More specifically, our objective is to map the variety of pedagogical tasks proposed in the CLIL classroom to promote critical thinking skills around the comprehension of a given content. The source of these data is 71 experienced FL primary teachers working in the Madrid bilingual programme. The area of Madrid is considered here as an illustrative example of other monolingual regions of Spain, where some primary school subjects such Natural and Social Sciences, Arts & Crafts and Physical Education have been taught in English for more than 10 years now. Findings highlight that the most frequent CLIL reported practices in primary are designed to review and activate prior knowledge before the comprehension process of a given text, followed by a series of tasks aimed at working on low order thinking skills mainly. These results partially confirm certain dissension with the academia about the real implementation of CLIL in the primary classroom and suggest the need for a thorough discussion about good practices and routines in CLIL and their application in ESP teacher training.

**Keywords** Cognition · CLIL · Primary FL teachers · Thinking skills · Critical thinking skills · Teacher training

## 1 Introduction

There is a plethora of studies focused on the benefits of Content and Language Integrated Learning (CLIL) in primary education (e.g. Jiménez Catalán et al. 2006; Lasagabaster 2000; Hüttner and Rieder-Bünemann 2010) and in other teaching

I. Alonso-Belmonte (✉) · M. Fernández-Agüero
Faculty of Teacher Training and Education, Autonomous University of Madrid, Madrid, Spain
e-mail: isabel.alonso@uam.es; m.fernandez@uam.es



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contexts (e.g. Admiraal et al. 2006; Loranc-Paszylk 2009; Whittaker et al. 2011). There is also a bulk of literature which describe CLIL effective practices (De Graaff et al. 2007; Halbach 2008; Leung 2015; Meyer 2011; Navés 2009). These include a balanced integration of content and language, inductive reasoning, scaffolding, cognitively challenging activities and thinking skills. However, our own observations and conversations in Madrid with in-service teachers, student trainees and language assistants unveil difficulties and discrepancies with the academia about the real implementation of CLIL education in the primary classroom. Topics such as the lack of specific work on intercultural competence, the unbalanced focus of language over content, the partial absence of proper materials, among others, have repeatedly arisen in our teacher training activities – particularly in peer-coaching sessions and interviews with our student teachers doing placements at bilingual schools.

Our aim in this chapter is to dig into one of these issues: the role of cognition, one of CLIL's four dimensions (4 Cs) (Coyle 2005; revisited Coyle et al. 2009). Learning new content through a foreign language (FL) often requires learners to find information by processing language and extracting meaning from spoken and written texts which are at a higher level than the learners' current productive capability. On the other hand, thinking skills lead to effective communication and improve problem-solving ability. Thus, by being taught specific thinking skills and the associated language, learners are better equipped to deal with the complex academic and cognitive demands of learning school subjects in a FL.

Unfortunately, there is a paucity of research on cognition in CLIL. Not many studies get down to the classroom to observe its development in the primary classroom in this respect, albeit with some exceptions. A close review of the scholarly work developed in the Spanish teaching context reveals that CLIL teaching practices and textbooks in primary are more dedicated to developing lower-order thinking skills (LOTS) than to higher-order thinking skills (HOTS) and critical thinking (Gerena and Ramírez 2010; Santo-Tomás 2011). Thus, we intend to offer an evidence-informed contribution to this ongoing debate by describing and analysing the most common teaching practices regarding thinking skills in primary as voiced by educators who are daily involved in CLIL settings. The ultimate objectives we pursue are: (1) to contribute to the convergence between FL research, the exercise of the primary teaching profession and CLIL teacher education; and (2) to propose possible ways to improve training for teaching in CLIL, as we contend that good teacher training is critical to CLIL's success (Coyle 2009; Hillyard 2011).

For this purpose, in this chapter we present findings mostly drawn from the analysis of 71 questionnaires of experienced FL teachers working in the bilingual programme of the Region of Madrid. These questionnaires belong to a wider corpus of 400 surveys designed, collected and analysed in four different European countries within the framework of the European project SBATEYL[1]. SBATEYL is an Erasmus + K2 programme aimed at designing web and school-based reflective resources for FL teachers of young learners based on data from practising teachers in Turkey, Slovenia, Italy and Spain.

[1] SBATEYL is an acronym for *Web and School-based Professional Development Project for Foreign Language Teachers of Young Learners* (2014-1-TR01-KA201-013197).

## 2 The Context of This Study

As English as a foreign language (EFL) teacher trainers at university, our main aim is to equip future primary teachers to master the FL and prepare them to thrive in diverse education settings. In the Region of Madrid, where we live and work, a large number of FL teachers in primary education carry out their professional activity within the framework of the so-called *Programa Bilíngüe* (bilingual programme), which is based on CLIL education (VVAA 2016). As implemented in Madrid, this means that in addition to the EFL lessons – 4 or 5 sessions per week –, children get up to 5 sessions of other content subjects in English – with the exception of Mathematics and Spanish Language and Literature. In practice, they typically receive English instruction in Natural and Social Sciences and Arts & Crafts, and to a much lesser extent, in Physical Education (Fernández-Agüero 2010).

Madrid's bilingual programme began 12 years ago in 1st of primary in 26 primary state schools and has progressively been implemented in all the school years up to the end of compulsory secondary. Nowadays, this programme has 463 participant schools belonging to the state education regional network: 353 primary schools – 242 of which work completely in CLIL – and 110 high schools – 81 teach CLIL across compulsory secondary[2] (see Llinares and Dafouz 2010 for an overview of this programme).

Madrilean regional authorities generally entrust primary FL teaching to language specialists with at least CEFRL[3] level B2 (the government aims at C1 by the year 2020) who, in the CLIL provisions, may also be asked to teach content subjects, provided they obtain a specific qualification, normally through a comprehensive exam that certifies their capacity to teach FLs independently of their previous training for teaching. In Madrid, primary student teachers complete a 4-year bachelors' degree (240 ECTS) to be able to obtain the required qualifications to work in any Spanish school (either private, public or state subsidised). The study programmes at the Spanish universities are focused on both theoretical contents and pedagogical practice. In the case of Autonomous University of Madrid (UAM), primary student teachers combine on-campus theoretical modules with different periods of teacher training at state schools. During the last year of their degree, some students obtain a certificate as EFL specialists following specific pre-service training (ESP language subjects such as 'English for education' and 'classroom English for teachers', FL teaching and children's literature) and a 16-week school practicum. It is very likely that these student teachers' professional career will be related to CLIL in one way or another.

[2] Data from academic year 2015–2016 (VVAA 2016).

[3] CEFRL stands for Common European Framework of References for Languages (Council of Europe 2001).

## 3 Content and Language Integrated Learning: Benefits and Drawbacks

In the 1990s, CLIL emerged as an umbrella term covering different learning forms in which a language has a special role in the process of learning disciplinary matter or content. Gradually, this acronym has been adopted by European researchers and institutions as a generic term for such forms of education, and CLIL programmes are now widely implemented in Europe (European Commission 2012). CLIL education, frequently defined as "a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language" (Coyle et al. 2010: 1), is an "increasingly acknowledged trend" in FL teaching (Pérez Cañado 2012: 319), put forward as a solution to Europe's deficient language standards after the research on the age factor in second language acquisition seems to have come to the conclusion that 'the earlier the better' is not the case with mainstream FL instruction (García Mayo and García Lecumberri 2003; Muñoz 2006). Certainly, CLIL has gathered momentum, being perceived – whatever the age of CLIL onset – as the long-awaited answer to the need to train European citizens who are competent in several languages of plurilingual Europe, more specifically language users of at least three languages (Pavesi et al. 2001: 77). Likewise, the teaching of content through English in higher education in contexts where English is a FL – commonly known as English as a Medium of Instruction or EMI – has rapidly grown to attract prospective students by increasing internationalisation at home and providing an added value in terms of employability and career prospects (Dearden 2017, this volume; Staub 2017, this volume).

The popularity of CLIL is initially grounded on research into bilingual models such as the renowned French immersion programmes in Canada launched in the 1960s, which consistently and rigorously supported the advantages of bilingual instruction (Swain and Lapkin 1982 in Ontario; Genesee 1987, 1994 and Cloud et al. 2000 in Montreal; Krashen's work such as Krashen and McField 2005; Lambert and Tucker 1972) and were related to maintaining or boosting the bilingual status of two languages in a given community. In these situations, it has been argued that bilingualism promotes creativity and cognitive flexibility, and has metalinguistic and intellectual benefits for the learner, who is forced to apply and develop more communication and problem-solving strategies (Cummins 2000). Bilingual children in immersion education experience language inhibition (Bialystock 2005), which means that they tend to engage in language tasks by forgetting language as a code. This involvement in the task makes them persist when difficulties arise and as a consequence, in this type of education there is in-depth language processing.

European CLIL, for its part, is typically associated with providing instruction in a FL – normally a socially-prestigious international lingua franca such as English – in a sort of educational, rather than social, bilingualism where "the focus changes from language as a vehicle of culture to language as a means of communication in academic settings" (Lorenzo 2007: 28). In this milieu, many scholars advocate for bilingual education too, as a realistic way to improve exposure and intensity to the

target language in an otherwise overloaded school curriculum (García Mayo 2003: 107). Surely, CLIL is supported by a solid research tradition (Dafouz and Guerrini 2009; Escobar Urmeneta and Nussbaum 2011; Lasagabaster and Ruiz de Zarobe 2010; Lorenzo et al. 2011; Navés and Muñoz 1999; to name just a few). Even though teaching content through a FL does not automatically convey an improvement in students' FL proficiency (Dearden 2017, this volume), recent research conducted in Europe claims that CLIL learners usually outperform non-CLIL ones in general proficiency (Admiraal et al. 2006; Jiménez Catalán et al. 2006; Loranc-Paszylk 2009; Ruiz de Zarobe 2010) and in the subject-matter they perform at least equally (Heine 2008; Jäppinen 2006).

Nowadays, CLIL tends to be presented as a cognitively desirable option (Cenoz 2003; Lasagabaster 2000; Muñoz 2007) and is usually discussed from a broader perspective encompasing principles of good pedagogy such as fostering critical thinking (Mehisto 2008). It is supposed to be an acquisition-rich environment, where content information processing strategies abound and students "are intellectually challenged to think critically about content and language in both content and language classes, look for relational links among subjects, and reflect upon the learning process" (Mehisto 2008: 96). CLIL learners report using a wider range of strategies than non-CLIL learners, with regards to the type and range of strategies favoured as well as the frequency of their use (Psaltou-Tzoysy et al. 2014). Specific thinking skills such as predicting, comparing, organising, problem-solving, etc. and the associated language seem to be better developed in CLIL provisions to deal with the complex academic and cognitive demands of learning school subjects in a FL. And these thinking skills "enable students to be independent learners [...] and might help to overcome socio-economic and cultural differences" (Chipman et al. 1985: 5).

While there is an important number of studies focused on the benefits of CLIL in primary education, the conceptualisation and pedagogical implementation of CLIL have of late started to be questioned (Bruton 2011, 2013; Cenoz et al. 2014; Harrop 2012; Pérez Cañado 2012). Typically seen as a "flexible operational framework for language instruction" (Dueñas 2004: 75), CLIL could likewise be deemed as too flexible, or overly inclusive, so that its boundaries are too hard to pin down (Alejo and Piquer 2010). This ties in with CLIL's potential problems for pedagogical coherence. Above all, CLIL is a grassroots initiative realised in an array of educational actions, and this heterogeneity seems to go against pedagogical uniqueness. In the words of Cenoz and her colleagues (Cenoz et al. 2014: 255), "the extent to which CLIL […] entails a specific well-defined pedagogical approach to content and language integrated teaching […] is presently not clear and, thus, open to question and discussion". Apparently, some of CLIL's main features – its rapid spread and its bottom-up implementation – can somehow be working against CLIL itself: its expansion "has outpaced measures of its impact" (Pérez Cañado 2014: 316) and its teacher-led nature may have caused related theory lag behind.

Also, teachers put forward structural difficulties to implement CLIL (in Spain, see Bruton 2011; Cabezuelo and Fernández 2014; Fernández and Halbach 2011; Laorden and Peñafiel 2010). Pérez Cañado (2014), for instance, identifies a number

of areas that teachers are concerned about, namely linguistic and intercultural competence, the theoretical underpinnings of CLIL, materials and resources, student-centered methodologies, and ongoing professional development. Outside the target language community, certain questions come to the fore, for instance, in relation to language levels of proficiency of students and teachers; and the use of the FL in the school context as "the possession of a common [mother tongue], and a lower than optimal level of articulateness in the [second language], may conspire against use of the [second language] for learning" (O'Dwyer andAtlı 2017, this volume).

As to the development of thinking skills, Gerena and Ramírez (2010) report that CLIL lessons in Madrid do not enhance practices such as reviewing or activating prior knowledge before teaching the main lesson, using higher order thinking questions and activities. More specifically, these scholars explain that although vocabulary development was good, students had difficulties in expressing their thoughts and conceptual understandings fluently because they had few opportunities to predict, infer, compare or contrast. In their view, this was probably due to scarce higher order thinking questions and a teacher-centred pedagogy characterised by plenty of teacher talk and teaching by the book. This goes against claims such as Leung's: "in a CLIL lesson, ideally, there should be a range of question types which involve thinking processes of various depths" (2015: 126).

In a similar vein, Santo-Tomás (2011) analysed Bloom's revised taxonomy of thinking skills (BRT; Anderson and Krathwohl 2001) in four CLIL textbooks of Science frequently used in primary (grade 2) in the Region of Madrid. These thinking skills were placed on a continuum ranging from the highest to the lowest order skill: remembering is at one end and understanding on the other, the intermediate steps being creating, evaluating and analysing. According to this system, LOTS are developed through activities such as identifying, labelling, underlining concepts, etc., while HOTS call on the application, analysis and elaboration of the new content, by comparing and contrasting, justifying, prioritising, inferring, etc. Santo-Tomás' results confirm that the most frequently activated thinking skills in the context of CLIL correspond, again, to lower order thinking categories.

In sum, there appears to be dissonances between the potentialities of CLIL described by the literature regarding Coyle's (2005) C for Cognition and what really takes place in the primary classroom. Our objective in this chapter is to put forth data which somehow complement this debate.

## 4 Data and Methodology

More specifically, we aim at mapping the variety of pedagogical tasks proposed in the CLIL classroom to promote critical thinking skills in comprehension activities as explained by 71 experienced FL primary teachers working in Madrid's bilingual programme. The data was collected as part of a larger study, where these educators were asked about different aspects of their daily teaching activity with the help of

an *ad hoc* designed questionnaire whose ultimate goal was to identify both good practices and areas of improvement. In the questionnaire, we used a 1–4 Likert scale – (1) Always; (2) Very often; (3) Sometimes; (4) Rarely – to inquire about methodology, the development of language activities – listening, speaking, reading and writing –, intercultural competence and the use of ICT, among other topics in FL teaching in primary. The authors of this chapter were responsible for the elaboration of the survey items regarding the types of tasks proposed to develop reading and listening, that is, language comprehension vs. production (items 18–42). That is why we will focus on these language skills here.

The instrument of analysis was furnished with the following characteristics (Fraenkel et al. 2014): validity (conducted on the basis of scientific literature), including a pilot study; reliability (exact instructions and clear, specific questions); and objectivity (97 closed-type questions). The Cronbach coefficient ($\alpha = 0.916$) confirmed the high reliability of the instrument. The data were gathered in May 2015 and analysed by use of descriptive statistics.

As for the procedure followed, we performed an inductive bottom up analysis of all the questions in the survey that inquired about the tasks devoted to the comprehension of a given content and classified these tasks depending on three different parameters: (1) the process applied to learn, according to Bloom's revised taxonomy (Anderson and Krathwohl 2001) (see Table 1); (2) the language activity (reading or listening) in which informants said that they applied that process; and (3) the phase of the comprehension process when it was applied, namely before, during or after the comprehension activity. In the next section data will be presented through percentages, which have their origin in the number of teachers who selected (1) Always and (2) Very often regarding a given task by language skill, vs. those who selected (3) Sometimes and (4) Rarely. For example, if 54 out of 71 teachers selected Likert scale options (1) and (2) to indicate the frequency by which they

**Table 1** The cognitive process dimension

| Thinking skills and associated tasks | | |
|---|---|---|
| Higher-order thinking skills (HOTS) ▲ | Creating | Making, designing, constructing, planning, producing, inventing |
| | Evaluating | Checking, hypothesising, experimenting, judging, testing, monitoring |
| | Analysing | Comparing, organising, outlining, finding, structuring, integrating |
| | Applying | Implementing, carrying out, using |
| | Understanding | Comparing, explaining, classifying, exemplifying, summarising |
| ▼ Lower-order thinking skills (LOTS) | Remembering | Recognising, listing, describing, identifying, retrieving, naming, finding, defining |

Adapted from Anderson and Krathwohl (2001)
http://www.onestopenglish.com/thinking-skills-for-clil/501197.article. Last accessed Feb 4th 2017

propose their learners to brainstorm before listening, brainstorming is reported to be used as a frequent pre-listening task by 76% of the surveyed teachers.

## 5 Results

For the sake of clarity, findings are shown in three different blocks: most frequent comprehension pre-tasks, while-tasks and post-tasks in relation to thinking skills.

### *5.1 Most Frequent Comprehension Pre-tasks*

Before the comprehension process, the teachers who participated in the survey stated that they implemented a series of tasks to activate prior knowledge about a given content. The most frequent tasks reported before reading or listening to a text were prediction, brainstorming and discussion. Brainstorming is a technique which encourages learners to produce ideas quickly without critical examination or evaluation, that is, LOTS. Prediction and discussion, however, stimulate HOTS since they serve to promote critical thinking through the analysis and the evaluation of a given content. Figure 1 portrays the results as regards these three types of tasks by language skills:

The percentages in Table 1 indicate that brainstorming and prediction were very frequent as pre-listening tasks, while discussion was slightly more common before reading a written text.

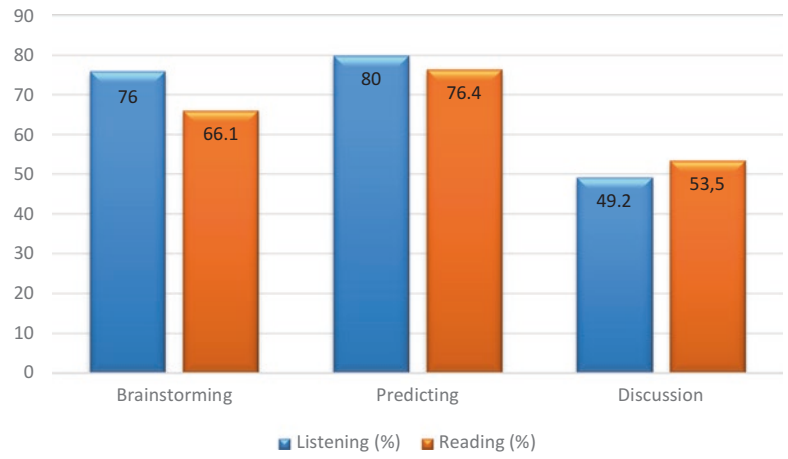



**Fig. 1** Tasks put into practice by teachers before comprehension

**Table 2** Tasks put into practice by teachers during the comprehension process

| While-activities | HOTS or LOTS |
|---|---|
| General comprehension questions | LOTS |
| True/false | LOTS |
| Fill-in-the blank | LOTS |
| Multiple choice | LOTS |
| Give-the-right-order | LOTS |
| Information transfer | HOTS |
| Problem-solving | HOTS |

## *5.2 Most Frequent Comprehension While-Tasks*

Concerning the tasks that come up during the comprehension process of an oral or written text, the most frequent tasks put forward by the participants are shown in Table 2 from the most to the least frequent.

Respondents stated that general comprehension questions were the most frequent tasks when reading and listening, followed by true/false and fill-in-the-blank activities. All these tasks demand from learners to recall and understand the new information (LOTS). At the same time, they serve as the basis to develop some HOTS in the CLIL classroom, problem-solving and information transfer being the most frequently reported activities of this sort – but still less frequent than the LOTS.

By skills, we can see that general comprehension and give-the-right-order tasks are more often carried out as while-reading activities. On the other hand, true-false, fill-in-the-blank, multiple choice, problem solving and information transfer activities are more commonly developed as while-listening activities in the CLIL classroom, as depicted in Fig. 2.

## *5.3 Most Frequent Comprehension Post-tasks*

Once students have understood the content, the teachers surveyed expressed that they applied a number of tasks that could help students develop their thinking skills. As Table 3 shows, the most frequent ones are role-plays and writing tasks followed by discussions and summaries. Role-plays and writing tasks help learners to fully understand the new information and to apply it in a pedagogical environment (LOTS). As for the development of HOTS, discussions seem to be a more frequent task at this stage of the comprehension process. The cognitive advantage of having discussions is that learners learn to dissect, appraise, compare, defend, evaluate, justify, prioritise and reformulate a given information. Yet, it is one of the few reported practices to develop HOTS in the CLIL primary classroom.

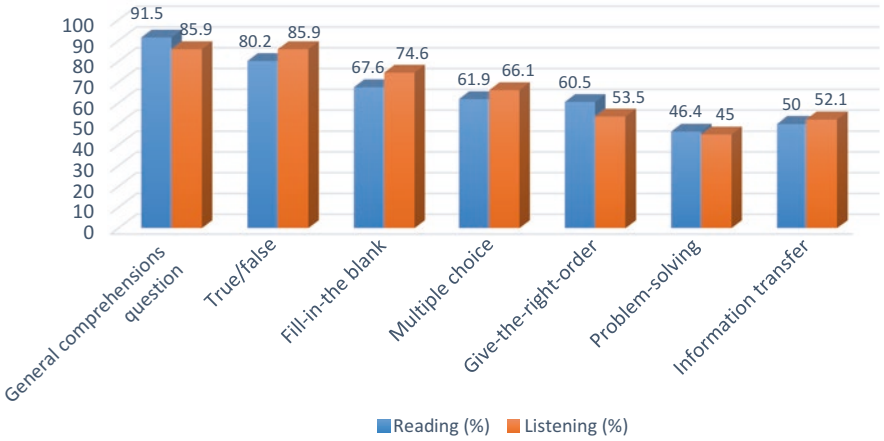
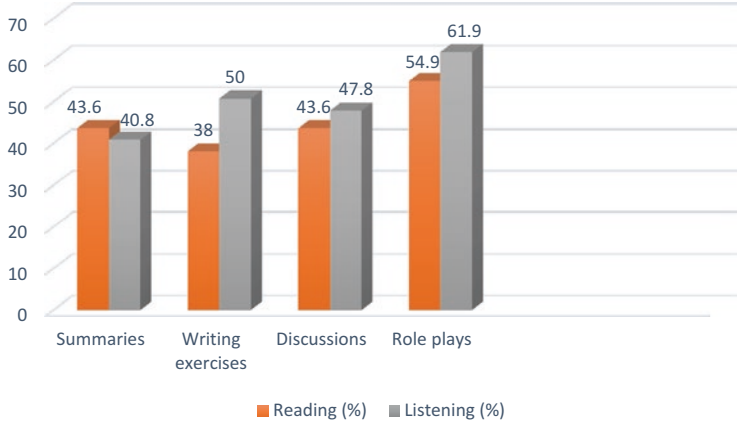



**Fig. 2** Tasks put into practice by teachers during the comprehension process by skills

**Table 3** Tasks put into practice by teachers after comprehension activities




## 6 Discussion and Implications for ESP Teacher Training

In the previous section we have presented the results of a small scale study focused on the most frequent teaching activities put into practice in the CLIL classroom to develop students' thinking skills. Findings highlight that the 71 CLIL teachers reported practices designed to review or activate prior knowledge before the comprehension process of a given text, followed by a series of tasks mainly aimed at working on LOTS, which is partly coincident with previous research on this issue for the same context (Gerena and Ramírez 2010; Santo-Tomás 2011). Unfortunately, there is a small presence of reported tasks used to stimulate HOTS by these teachers working in the Madrilean CLIL primary classroom, namely prediction, discussion, some problem solving and information transfer. In particular, findings tell us that

activities which involve debates and discussions come up regularly to activate prior knowledge, and to help integration of language and content along the teaching process, to "move the learner on in terms of both content and language" (Harrop 2012: 59). Nevertheless, CLIL is traditionally claimed to be an educational proposal which sharpens "the focus on the interconnections between cognition and communication – between language development and thinking skills" (Coyle et al. 2009: 13), and we would expect this to be realised habitually in a variety of tasks and activities.

How to explain this discrepancy between our review of the literature on CLIL theory and the reported practices of the teachers in this study on the real implementation of CLIL in the primary classroom? It begs the question whether part of the academia may be assimilating the characteristics of CLIL to those of immersion programmes – as reported in Swain and Lapkin (1982), Lambert and Tucker (1972), etc. Indeed, CLIL has sometimes been equated to immersion, or even considered to embrace it (Lasagabaster and Sierra 2010), and there is evidence to support that bilingual schooling entails cognitive benefits such as divergent thinking, creativity, early metalinguistic awareness and communicative sensitivity (Baker 2001; Cummins 2000), but the amount of FL knowledge required for these benefits to manifest is substantial (Lightbown and Spada 2006). Can CLIL render these cognitive effects? In CLIL, the time of exposure to the FL is significant (9–10h. a week in Madrid) but then, the FL is not normally used outside the class, so very high levels of language competence could be difficult to attain. Apparently, the cognitive advantages of the enhanced yet limited communicative competence that CLIL affords have not been defined yet.

At this point of the chapter, we must acknowledge some of the limitations of our study. One of its main caveats is that participants were asked to report on their own performance. Further research will involve contrasting the data with performance-based data, collected through classroom observations, to explore for example how debates and discussions are applied and effectively monitored by teachers in the CLIL primary classroom. Independently of this limitation, not only has the important role of debates and discussions in the CLIL setting been confirmed by the results of the questionnaires but also admitted by the teacher assistants, student teachers and novice practitioners with whom we are in contact in our daily teacher training activity[4]:

> "*En las clases de CLIL se da mayor importancia al diálogo entre los alumnos y se utiliza el debate para potenciar eso*" (In CLIL clases dialogue between students is very important and debates are used to enhance it). (Interview n° 8-AZ)

[4] These interviews with student teachers and teacher assistants participating in the CLIL context are part of UAM-ETNA, the corpus of English Teachers' NArratives. UAM-ETNA is an initiative of the DAIC (Discourse Analysis and Intercultural Communication) research group working in FL teacher education at UAM (UAM SOC PR-009). UAM-ETNA is meant to be used as a source to describe the main characteristics and evolution of both pre-service and in-service ESL teachers' professional identity working in primary and secondary education in Madrid, through the discourse and lexico-grammatical study of their oral and written narratives (Alonso-Belmonte 2012, 2014).

> "*Al aprender Science en inglés los debates se convierten en un instrumento crucial para poder verificar que los alumnos entienden y siguen la clase sin dificultad*" (When learning Science in English, discussions become a crucial tool to test whether students understand and follow the class without difficulty). (Interview n° 15-RR)

In addition, we acknowledge that the number of questionnaires gathered in this study is limited and that the data refer only to receptive language skills. Hence, results reveal just trends and not generalisations. However, the scarce use of other higher order thinking tasks reported by teachers in this study lead us to think that, except for the predicting and discussion practices, and possibly problem-solving and information transfer, no special emphasis is placed on developing the students' analytical skills. In a context where learners are confronted with cognitively demanding content matter, it seems that they are not ably guided on what they should do with that content. This may be due to their teachers' deficient preparation to provide this guidance. Many authors stress the need for in-service training as expressed by teachers themselves (Asser and Mehisto 2007; Cabezuelo and Fernández 2014; Fernández and Halbach 2011; Pena Díaz and Porto Requejo 2008; Pérez Cañado 2014; Travé 2013). Besides, European CLIL teachers seldom receive extensive pre-service training (European Commision 2012). Therefore, it stands to reason that many teachers have a limited repertoire of strategies to foster critical thinking in the integration of language and content (Mehisto 2008).

All in all, teacher education should meet this demand and cater for CLIL teachers' need for training. In pre-service tertiary teacher education, we suggest that ESP language subjects such as 'English for education' and general English courses offer reinforcement on how to foster HOTS in the CLIL classroom. Concerning discussion tasks, student teachers can be trained in the application of specific techniques to manage a debate, and on the variety of questions that could be posed to promote well-informed reasoned discussion. Secondly, predicting and hypothesising make sense in mainstream FL teaching as pre-comprehension tasks to help establish a purpose to read or listen. Likewise, in teacher training for CLIL these tasks can be consciously encouraged as top-down approaches to oral or written texts for preparing learners to process the content matter *for a reason*, so that they are able to check, judge, and test over that content later on. Furthermore, student teachers would benefit from preparation in a variety of strategies and techniques to practise HOTS during comprehension of texts such as problem solving and information transfer activities. The former has to do with analysing and finding a solution; the latter, with constructing a new (linguistic) product, both HOTS in the cognitive process dimension.

In any case, creativity must be at the core of teacher education for cognitive development in CLIL. In the words of Cross (2011: 2), "language learning is […] inextricably tied up with an appreciation of not only what words "mean", but the feelings they also come to evoke through "sense" [and] learning and using language is, therefore, a necessarily creative process, inseparable from emotion and affect". In this sense, creativity is not related to the usual artistic activity of, say, composing music; it is a mundane task that unfolds by using the language for doing something. Content-oriented CLIL, full of educational challenge and novelty, seems the natural scenario for this type of creativity, and student teachers need to be made aware of its

potential. In relation to this, some very useful ideas on tools and techniques for promoting critical and creative thinking skills in CLIL can be found in Hanesová (2014).

For instance, teachers can make use of graphic organisers such as mindmaps for the visual organization of information to activate background knowledge, or to provide scaffold when revising. Another means to encourage critical and creative thinking skills are brainstorming techniques such as SCAMMPERR (Eberle 2008; in Hanesová 2014), a mnemonic list of questions that stimulate the production of ideas: SCAMMPERR stands for 'Substitute, Combine, Adapt, Magnify/Minimise, Modify, Put it to some other use, Eliminate, Rearrange and Reverse'. These words are prompts to create new ideas, solutions or products based on the expertise of students. Other strategies that assist students' autonomous learning for the active construction of new knowledge are analogies, summaries, semantic networks, conceptual maps and portfolios. Also, discussions and the exchange of ideas in pairs or groups increase the benefits of CLIL by ensuring learners' involvement in social interaction. Using these techniques and tools does not guarantee the development of critical and creative thinking skills, as their choice must be based on the students' needs analysis of, for example, their learning styles. Nevertheless, experimentation with these techniques proves that the combination of CLIL and the development of critical and creative thinking skills is feasible (Hanesová 2014).

For these proposals to have a transforming power, they have to be part of an integrative model of teacher education (Escobar Urmeneta 2013), which brings theory and practice together through teacher-led enquiry, and comprises action research, classroom observation, university-school partnerships, etc. These experiences offer a better understanding of the connections across CLIL and provide a framework for collaboration between real practice and research-led theory. In this regard, at UAM we advocate for peer coaching meetings (Showers and Joyce 1996) with FL student teachers. Before the beginning of their practicum, peers self-select their pairs among their colleagues placed at the same school and get to know each other. Once in the school, student teachers regularly meet once a week not only to exchange experiences, expectations and fears but to offer feedback and constructive ideas too. Research evidence shows that peer coaching procedures have a positive impact on trainees' professional development (Prince et al. 2010; Rodríguez Marcos et al. 2011) and in these sessions, the link between cognition, language and content can definitely be raised as an issue for FL student teachers to reflect critically on it.

## 7 Concluding Remarks

In this chapter we have attempted to contribute to the convergence between research, the teaching profession and teacher education by presenting a small-scale study on the activities that promote thinking skills in CLIL and proposing possible ways to enrich ESP training for teaching in CLIL based on our results. We believe that this line of investigation into cognitive development and thinking skills in education calls for critical engagement and is germane to the improvement of education in

relation to social justice. As we see it, critical thinking empowers learners to be independent responsible citizens and contributes to overcoming socio-economic inequalities and cultural differences. That is why it is particularly relevant to foster critical thinking skills adequately in widespread far-reaching initiatives of state education such as the CLIL provisions in the Region of Madrid. Thus, it is incumbent upon teacher educators to reflect on this issue and ensure adequate training in this respect.

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# The Changing Roles of EMI Academics and English Language Specialists

**Julie Dearden**

**Abstract** In recent years we have witnessed a rapid growth in the number of academic subjects in universities being taught through the medium of English rather than through the language of the majority of people of the home country. The growth is attributed primarily to a desire for universities to "internationalise" both by attracting international students and by ensuring that home students are advantaged on the global job market. In this growth there are a number of assumptions that are not necessarily supported by research evidence for example that students' proficiency in English will improve as a result of immersion through English Medium Instruction (EMI) and that the transition for EMI academics from teaching their academic discipline in their first language to teaching through their second language (English) will be smooth and problem-free. Most importantly, there has been little consideration as to what will become of the many English language specialists in universities who have hitherto been teaching general English as a Foreign Language (EFL), English for Academic Purposes (EAP) or English for Specific Purposes (ESP) and how their roles might develop.

**Keywords** English Medium Instruction · EMI academics · Higher Education

## 1 Introduction

The first time that I considered the developing role of English Language teachers, whether they teach English as a Foreign Language (EFL), English for Academic Purposes (EAP) or English for Specific Purposes (ESP), was during a series of research interviews that I conducted with a group of English Language teachers from a university in China. In a world where English Medium Instruction (EMI) is growing rapidly, the English teachers explained to me that they were expected to re-train to become subject or content teachers; they were being asked to study for a PhD in other academic subjects such as Philosophy so as not to become redundant.

J. Dearden (✉)
University of Oxford, Oxford, UK
e-mail: julie.dearden@oxfordemi.co.uk



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Their skills purely as language teachers were no longer needed. In their university at least, it was considered that English Language teachers giving EFL lessons would become extinct, superseded by EMI lecturers delivering their academic subject content in English. In this chapter I would like to challenge the view that in Higher Education, on the premise that lectures take place through English Medium Instruction (EMI), students somehow learn English automatically. Instead of a new EMI world where there is no need for English teachers or English language support, I propose that English Language teachers are needed now more than ever not only for language support for teachers and students, but also for the interactive pedagogy which is often already part of their teaching toolbox.

EMI academics teaching their academic subject in English will also need to adapt as language awareness and interactive pedagogy take on an increasingly important role. Whilst exploring why ELT teachers and EMI academics might consider developing their respective roles, I would like to propose that they explore ways of working together and draw upon data from my research and that of colleagues to date in this chapter.

Rather than refer to academics in Higher Education (HE) as university professors, lecturers or supervisors I use the term "EMI academic" for all those who teach their discipline through EMI at tertiary level. As well as alleviating the difficulty of terminology, this reminds us that at university level esteemed researchers and conference speakers rarely refer to themselves as teachers even though the art of conveying difficult concepts of an academic subject to a group of international undergraduate or graduate students surely involves teaching and learning and therefore an awareness of pedagogy.

## 2 Internationalisation: A Buzz Word

'Internationalisation' and 'globalisation' have become buzz words in Higher Education (HE) as institutions hurry to compete in a global education marketplace and yet these terms tend to be used interchangeably with little thought given as to what they actually mean (Knight 2013).

We know from the expanding EMI research literature that universities around the world are internationalising (Graddol 2006; Dafouz and Guerrini 2009; Doiz et al. 2013; Kirkpatrick 2014; Wächter and Maiworm 2014; Dearden 2015).

The motivations for becoming an international university are also now well-documented; a desire to attract international students, to send students abroad or teach an expatriate community (Belhiah and Elhami 2015) and, in countries like Brazil, to offer 'internationalisation at home' through an international curriculum for home students. Universities aim to attract foreign faculty (Güruz 2008) and rise in the international university rankings (Lehikoinen 2004; Rauhvargers 2013; Dafouz and Smit 2014). If we visit study abroad fairs around the world we can see how universities are keen to develop international partnerships, joint degree programmes and joint research projects.

Invariably, 'going international' involves teaching academic subjects through the medium of English. EMI is seen as the primary means by which universities achieve internationalisation. The EMI phenomenon has been called a "growing global phenomenon" (Dearden 2015) a "high-speed train" (Macaro 2015) even "a pandemic" (Phillipson 2009).

In Europe, the work of Brenn-White and Faethe (2013) is often cited as their online survey of postgraduate courses in Europe estimated that the number of students learning through EMI had increased by at least 42% to a figure around 6407 compared to a similar survey a year earlier (Brenn-White and van Rest 2012). O'Dowd (2015) found that only 7% of 70 European universities surveyed stated that they were offering no EMI courses at all.

By teaching through English, universities aim to open their doors to students and academics from around the world. They are also striving to produce graduates who can write for publication in English which, in turn, enables universities to publish in prestigious journals and so perform well in world rankings. EMI and publishing in English are directly linked with university rankings in some countries. It is interesting to note however, that in her 2014 study, Hultgren suggests that the causal link between the introduction of EMI and successful "internationalisation" has not yet been established and suggests that, in Denmark at least, there is no clear correlation between the introduction of EMI and higher-ranked universities.

My working definition of English Medium Instruction for this chapter is:

"The use of the English language to teach academic subjects (other than English itself) in countries or jurisdictions where the first language (L1) of the majority of the population is not English" (Dearden 2015). We could spend the whole of this chapter demarcating and differentiating EMI from other forms of bilingual education such as content and language integrated learning (CLIL). Suffice it to say that while CLIL is "a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language" (Coyle et al. 2010) in my view, many EMI academics in HE do not consider themselves to be teaching both content and language. They consider their role as teaching their academic content while speaking English but they do not feel responsible for their students' language learning.

## 3 EMI: A Change in Pedagogy

If EMI academics are working in an international HE environment aiming to teach lecture halls packed with international students and if multilingualism and multiculturalism are the objective, then there may need to be some profound changes in EMI academics' linguistic awareness and pedagogical skills: a monologic, teacher-led pedagogy will not be sufficient. The fact of teaching through EMI will bring with it the need for a more interactive pedagogy. Why? In an EMI lecture, lab session or supervision, faced with an international audience, EMI academics will no longer be able to assume that comprehension is taking place. I would venture that for a few academics,

unfortunately, ensuring that they are being understood is not always a priority, but if students have a global choice of where to study, it may swiftly become one.

Without doubt, academics want their students to succeed in exams in their academic discipline and yet "Students cannot develop academic knowledge and skills without access to the language in which that knowledge is embedded, discussed, constructed, or evaluated" (Crandall 1994). Linguistic awareness is therefore an integral part of conveying the subject content and preparing for academic success.

EMI academics will need to know how to modify their input, check that students have understood and create an atmosphere where students are not afraid to speak both to check comprehension and to develop their own English language skills. In addition, academics will need to adapt their content to an international audience, take the students' cultural differences into account and possibly deal with a wide range of English Language levels in the class of both international and home students.

## 4 An Assumption: EMI Is Good for Students' English Proficiency

Many research studies have considered the beliefs and views of teachers and students on EMI courses. There is an overwhelming belief among teachers that EMI is beneficial to students as a passport to success in the global world of work and academia. Students also believe that EMI is useful for preparing them for study or work abroad and essential for a successful career (Dearden and Akincioglu 2016). There is also a firm belief that EMI will be beneficial to the students' English language proficiency and that language learning will take place incidentally in EMI classrooms (Coyle et al. 2010; Lo 2014). When we look at the studies on teachers' beliefs about EMI and language proficiency, there is reticence on the part of teachers in some countries, in Turkey for example (Kiliçkaya 2000), but in many countries academics firmly believe that EMI improves students' English. In their study, Belhiah and Elhami (2015) asked 100 teachers across a range of institutions in the United Arab Emirates to estimate the impact they felt EMI was having on students' English proficiency: 67% thought that EMI improved students' English proficiency.

Returning to my first example of the Chinese university, this belief (that EMI improves a student's proficiency in English language) was perhaps behind the reasoning for considering making the English Language teachers redundant. Research studies show that students do gain English Language proficiency in EMI classrooms; Rogier (2012) studied IELTS score gains and showed that these gains were statistically significant for students studying for 4 years in EMI at universities in the United Arab Emirates. Other research is less optimistic. In China for example, Lei and Hu's (2014) study of undergraduate students studying in EMI programmes found no evidence that their English proficiency improved more than that of students on Chinese medium programmes. This obviously needs more empirical inves-

tigation; it would be interesting and necessary to explore whether language learning through EMI is the equivalent to, better or worse than a programme of L1 content instruction plus supporting EFL, EAP or ESP lessons.

## 5 Who Is Responsible for the Improvement in Students' English Language Proficiency?

If we believe that EMI is beneficial and that students will improve their English through EMI, then how exactly will that improvement happen? Who is responsible for ensuring that an improvement in language proficiency takes place: the institution, EMI academics or English Language teachers?

There are very few pedagogical guidelines about how to implement courses in EMI effectively. In our study in 2015, 49% of 55 countries in the study did not have a policy or statement on EMI in place and, if there was a country-wide policy in place, then that did not automatically translate into a university policy. In interviews that I have held with academics over the last 3 years it has become clear that if a university policy does exist, English teachers and EMI academics often remain in the dark as to what that is. In my interviews in Europe, when asked if their university had a policy on EMI, one Polish academic's response was typical: "*EMI is part of our internationalisation strategy but it has not yet been worded in explicit terms"*. Amongst academics the view is prevalent that universities are discharging their EMI responsibilities onto the teaching staff, not giving the move to EMI education sufficient thought or preparation, not investing in resources. Institutions are unaware of or unwilling to recognise the extra burden that EMI places on teachers in terms of preparing and delivering their lectures. Faculties are left to find their own way as this quote from another Polish academic indicates: *" the rectors do not want to impose anything because then the faculties would want some financing from the central administration, so the rectors just advise or plan or dream and it's the faculties that organise it.* This corroborates other research evidence showing that EMI academics may feel pressurised to teach through EMI, that they have been "saddled with EMI in a relatively haphazard way" (Werther et al. 2014).

In order to discuss English language improvement for the students, let us first consider the starting point: What level are students expected to have before they start learning their subject through EMI in Higher Education? Perhaps students should be ready for their EMI studies when they arrive in HE from secondary school? The language proficiency level that students need varies and has not been clarified. There is very little guidance as to what that level should be but it seems sensible that students need a level of English that will enable them to access and comprehend the content of their chosen academic subject. When students find themselves studying at undergraduate level in their first year at university, they are faced with some highly demanding linguistic tasks to perform. In order to integrate into their chosen academic community they are required, among other skills, to learn the

specific vocabulary and genre of their discipline, understand lectures whilst simultaneously taking notes, participate in seminars and supervisions, read academic papers, write discipline-specific essays or reports in English and make presentations. Even so, Byun et al. (2010) found that there is little concern among policy makers and university managers that students might be disadvantaged by not being able to understand the English being used by their teachers.

There seems to be an acceptance that high school English is sufficient, or at least will have to do. An academic in Austria told me: *If they have high school level it should be fine with our requirements and we ask every applicant and tell them they will have to read scientific papers in English and they will have to understand and get the main points and everyone says yes"*. Everyone says 'yes' and yet EMI academics are often concerned that students do not have the required level at the beginning of their studies to enable them to undertake an academic subject successfully. One Italian academic told me: "*At the beginning I doubt that half of them understands very easily"*. Byun et al. (2010), in their study in Korea, also found concern as to whether students had the necessary English proficiency levels to cope at the beginning of their course.

HE institutions have found various solutions to counter this problem of low levels of student proficiency in English. Some universities pre-select their students according to their language level and set a CEFR B1 as the level required. At first sight, this may appear to be a simple solution to the problem of having to teach students whose English is not up to the required standard. If we look more closely, however, there is much to be criticised in this model. At secondary level the students who speak the most proficient English may well be the wealthy, more fortunate students who have travelled, have family abroad or can afford private English tuition and cramming schools. If we make a decision to prevent future Physicists or Mathematicians from entering university at the age of 18 based on their current English language level, how do we know that we are not losing the opportunity to educate some great minds? These students might catch up in English given the opportunity or potentially go on to make great discoveries in Physics and Mathematics without ever speaking English? Pre-selection engenders great social inequality.

Another model in some countries such as Turkey and Saudi Arabia is a Preparatory Year Programme (PYP). In Turkey not all but many students are required to study English in a Preparatory Year Programme and gain a Pass grade in order to begin to study their academic subjects through EMI. This system attempts to plug the gap in the transition from English at secondary school and EMI at university level. PYP teachers and students have been found to struggle with this overly ambitious target; in some cases students arrive with an A2 level (CEFR) and have only one academic year in which to reach a level which enables them to study an academic subject at undergraduate level. In addition, there seems to be little collaboration between the PYP teachers and the EMI teachers themselves.

Many universities simply bury their heads in the sand; they either do not consider the fact of learning through a different language from a home language (L1) to be problematic or they simply have not, or dare not, give the topic any thought.

## 6 A Changing Role for EMI Academics

If we are expecting students to improve their English language skills while learning through EMI, are EMI academics expected to become language teachers? Research shows us that EMI teachers do not see themselves as language teachers. The following quote from an academic in our global survey (2015) is typical: *"I'm not interested in their English, I'm interested in their comprehension of micro-biogenetics."* In my research and teaching I have found a lack of awareness of language issues rather than a lack of interest in language cited in Aguilar's 2015 study. Maths and Science academics, for example, seem to believe that very little language is involved in teaching their disciplines as these academics claimed in our global study *"In maths you are saved by the formulae, and the formulae are true or false in any language."* and *"In science it's probably easier because the number of words you have to use in English is lower."* (Dearden 2015). When we consult Science and language or Maths and language experts,[1] we realise, however, that even at word level, teaching Science or Maths in English is extremely complex. As well as the Everyday versus Academic issue of vocabulary expressed as BICS (Basic Interpersonal Communication Skills) and CALP (Cognitive Academic Language Proficiency) by Cummins as early as 1979, EMI students are faced with subject specific terminology e.g. 'crankshaft' in Engineering (Wingate 2015) and general academic vocabulary. In addition, items of vocabulary, words, cause additional challenges in EMI as words may be polysemous i.e. vary in meaning. If we take the word 'solution' and use it in a Chemistry lecture it will not have the same meaning as in a Maths lecture or in general English and while one word "solution" might map onto 3 different meanings in Chemistry, Maths and general English, in a student's L1 there may be 3 different words instead and vice versa. Another complication is that words have different levels of difficulty: Naming words such as "vertebra" are simpler to understand than words which represent a process such as "photosynthesis", "evolution" which may or may not be observable, and the most difficult to teach and to comprehend are words which represent a concept such as "energy", "force" and "work" as concept words denote ideas at gradually ascending levels of abstraction and are part of a network of words. So to understand the word "power" students need a prior understanding of the words "work" and "energy". (Wellington and Osborne 2001). In addition to these words the EMI students need General Academic language, including words such as "Analysis- approach- area- assessment" as found in the Academic word list by Coxhead (2000). EMI academics need to teach and students need to be able to handle all of these vocabulary items in order to be able to teach and learn Science in English.

Although we are not expecting academics who teach Science, Maths, Economics, Geography and so on to be language teachers, I would argue that it would be helpful to them and their students to gain some awareness of language in order to communicate their subject well.

[1] Quoting lectures by Dr. Ann Childs and Dr. Jenni Ingram at the Department of Education in Oxford.

We can argue that all teachers are language teachers: when a Science academic teaches their students to speak and write like scientists, initiating them into an academic community with its own academic discourse, that same academic would be horrified if their students started expressing themselves like Historians.

## 7 Can English Language Teachers and EMI Academics Work Together?

English Language teachers and Applied Linguists know that if students are to understand they will need the teacher to modify their spoken input as well as any teaching materials used. To improve their proficiency, students will need the opportunity to 'negotiate meaning' with the teacher so that they can be sure to have understood and also to produce output themselves. These ideas do not sit comfortably alongside a monologic delivery of content but in many HE institutions there are no pre-service or in-service professional development opportunities, no courses which help EMI academics cope with this new challenge (Doiz et al. 2013; Dearden 2015). Unfortunately, this means that academics continue to teach as they were taught and university teaching in many places remains uni-directional.

In our professional development courses for EMI lecturers, we find that EMI academics and English teachers do not always know each other and rarely work together even though they work for the same universities. They work in different departments, often in different buildings and university teaching is, by definition, done by specialists in their fields and so cross-departmental cooperation is unusual (Aguilar 2015). Time is also a major constraint with academics under pressure not only to teach but also to conduct research and to publish. In some institutions there is a traditional and rather unhelpful hierarchy in place in which academics are considered 'superior' to English Language teachers and this makes it difficult for EMI lecturers to ask for and accept support from language teachers and vice versa.

Our "Collaborative Planning" research project conducted in Turkey in 2014–2015 (Dearden and Akincioglu 2016; Macaro et al. 2016) suggests that there may be a very important role for both EMI academics and English Language teachers to play in improving the students' language proficiency and there may be some benefit in working together. It has now become common to visualise EFL and EMI teaching on Lyster and Ballinger's continuum (2011) with language instruction goals at one end and content communication goals at the other. If we imagine English Language teachers at the "language instruction goals" end and EMI academics at the opposite "content communication goals" end, our project aimed to see what happened if participants at either end of the continuum took a step towards each other.

We asked English teachers in the Preparatory Year Programme (PYP) and EMI academics at universities around Turkey to work together in pairs to prepare academic lectures focusing on vocabulary and on explanations. We recorded and analysed these planning sessions and looked for signs of the changing roles in the

participants' discourse. Nine pairs of teachers completed the intervention and each pair planned eight lectures together. The main focus for the planning sessions was on the lexical content and level of all the written and spoken texts to be used before, during and after each lecture. In order to provide a framework for the pairs' work, we devised a Collaborative Planning Tool (CPT) that included prompts and questions to help them reflect on the language content of the lecture. The findings of our project in Turkey and the CPT are in the published article (Macaro et al. 2016). I am therefore going to draw some implications from our "EMI in Turkish Universities: Collaborative Planning" project for the changing role of the English Language specialist.

## 8 A Changing Role for English Language Specialists

Returning once more to my example of the language teachers in China who were being asked to re-train, and following our project in Turkey, I propose that the English Language teachers' role may well develop and change in an EMI world and by doing so, become increasingly important. This could partly be in the form of providing more subject-specific support to EMI academics and students. ESP and EAP support are important factors in delivering EMI successfully and ESP teachers can of course always increase their own knowledge of subject-specific vocabulary by observing lectures and classes and co-planning lectures. We cannot however expect, as one of our project participants did, Language teachers to read tomes of Chemical Engineering and become subject experts. Although many ESP teachers in fact do have an extensive knowledge of the academic subject, this expectation is unrealistic and perhaps more importantly, it undermines and fails to value the skills that a language teacher has in terms of language awareness and pedagogy – both extremely useful tools for EMI education. Rather than becoming either redundant or subject experts, English Language teachers can play a vital role in ensuring the successful delivery of EMI at university level in terms of language knowledge, language awareness and interactive pedagogy skills. They possess the skills to support students with EAP and ESP, monitor and communicate students' language levels to EMI academics, provide language support for EMI academics, share interactive pedagogy skills and raise linguistic awareness.

### *8.1 Support Students with EAP, ESP*

In many institutions English Language teachers provide valuable language support alongside undergraduate studies in the form of regular EFL, EAP and ESP lessons. They also run academic skills centres which provide regular courses on skills such as academic writing as well as being a help centre for students on an ad hoc basis. However, this is not the case everywhere. Since students' English proficiency is one

of the main concerns of EMI teachers (Doiz, Lasagabaster and Sierra 2014), it is important that language teachers continue to teach EAP and ESP to students alongside the EMI courses. ESP and EAP provision can be tailored in different ways and to individual needs. Some universities offer workshops at different language proficiency levels open to the whole university rather than a fixed number of obligatory hours. Some provide a number of EAP and ESP lessons which tapers off each year. As mentioned above, it is vitally important to support students' comprehension of general academic and subject-specific English.

In our research study in Turkey, academics constantly raised the problem that students had in understanding exam questions in English. Academics were aware of the difficulties that students have with questions with narrative texts *"such as an object is thrown at a certain angle at a certain speed and it bounces back from a certain object"* and it was this sort of problem that students could not solve. *"When I'm grading in the exam and I ask really simple questions and when I see they cannot answer I feel sad*" Academics felt guilty translating the exam questions and were not sure if code-switching for comprehension was still EMI. I would propose that using all the languages at our disposal and teaching students to use all their linguistic resources is all part of EMI. The objective of an EMI education is to internationalise, not anglicise. EAP teachers can help students to overcome the obstacle of not understanding exam questions by explicitly teaching the general academic vocabulary and narrative style of exam questions.

With consistent and adaptable EAP and ESP support during their undergraduate studies, students like our fore mentioned Physicist, with an insufficient level of English when embarking on undergraduate studies, can still reach their potential as a future scientist in a global world.

## *8.2 Monitor and Communicate Students' Language Levels to EMI Academics*

If EMI academics are to modify their input efficiently and make their lectures comprehensible then they will need to know the language level of their students, and yet we find that they are often unaware both of the various language levels in the room and of the scales used to indicate what language levels mean. As an Austrian academic told us: "*I'm not very accustomed, good at knowing what B1 really means.*" (Dearden 2015). In our project in Turkey, academics were unaware of the students' English proficiency level and this became apparent only when students had to present at the board or take an exam which is arguably too late. Language teachers can provide this information at the beginning of the year and this would be one way of enabling EMI academics to be more systematic in their approach to delivering their lectures through EMI. Language teachers can monitor students' language levels throughout their studies and provide extra support where necessary. I would emphasise that this information should be shared with the EMI academics and not kept locked away in the Language Centre.

The counterpart is that EMI academics can be responsible for measuring academic achievement and comparing content knowledge in classes which learn through L1 with those which learn through EMI. Whilst compiling our systematic review of studies on EMI in Higher Education (forthcoming), it became clear that there is a great deal of research on teachers' and students' views, beliefs and perceptions of EMI but there is very little empirical research on what the consequences of EMI teaching and learning may be on language and content learning outcomes. We need to know if learners acquire the same level of content knowledge when taught in EMI as they would if learning in their L1. Teachers and academics, acting as practitioner researchers measuring both language and content outcomes, can help to fill this gap in the research.

## *8.3 Provide Language Support for EMI Academics*

In addition to the students' language proficiency, we need to be aware of and support the EMI academic's English. Academics often rely on self-development to attain their English language skills and many feel that the responsibility for improving their English should be more fairly shared between themselves and the institutions for which they work. Many do not feel they are receiving the support they need (O'Dowd 2015).

When we consider the level of English proficiency that academics require in order to lecture and teach through EMI, the different vocabulary types that they need to master and the complexity of conveying academic concepts, then it seems evident that there is an increasingly important role for the English Language specialists to play in supporting academics with their own spoken and written language.

As we might expect, there is contradictory research evidence concerning the language proficiency of academics. Lam and Wächter (2014) report that, in their study, the majority of EMI programme directors considered the proficiency of the EMI teachers as good or very good. In our research we found that EMI academics themselves were unsure of the language level they had and needed, as this academic commented *"Pof…Good question.. I don't know actually…at least you have to be able to understand the questions of the students"* (Dearden 2015).

Language specialists can help here by referring to language scales, to CEFR levels for example, and while there is no consensus as to what measure or level of English a lecturer needs, we might propose that a CEFR B2 or C1 would enable them to face the linguistic challenges of conveying complex concepts with confidence. An academic with a C2 or C1 level would be more confident than an academic with a B2 level but in our professional development courses we have seen B2-level academics with excellent communication and pedagogical skills deliver informative and comprehensible lectures in EMI.

A CEFR level of language skills is useful as a guideline for the academics themselves but perhaps we should veer away from introducing standard expected levels too suddenly. In our "55 Countries" research there was evidence of a generation gap

with older academics understandably finding it more difficult to teach through EMI than younger academics who had studied for PhDs abroad and taught in other countries. We heard of experienced teachers being replaced by PhD students. Not only does this change the study experience of the students, it also risks excluding certain groups of academics as Klaassen and Räsänen warned (2006). As with many EMI issues, a gradual progression rather than a sudden overhaul seems most sensible.

## *8.4 Share Interactive Pedagogy Skills*

Even when academics believe that they have a sufficiently high level of English proficiency themselves, they still encounter issues with teaching through English. Studying for a PhD, speaking at a conference, writing academic papers all require high levels of English proficiency and yet this is not the same as teaching or lecturing through EMI. In our "Collaborative Planning" project the EMI academics had not received any preliminary teacher education and certainly no support with pedagogy when teaching through EMI. As I have already argued, EMI brings with it a need for a more interactive pedagogy and this is usually already part of an English language teacher's toolkit.

EMI academics in our project in Turkey found it difficult to differentiate whether students were having problems with the academic subject or the English language and this was compounded by the fact that there were very few or no interactions or discussions in class. Interaction is key and comprehension checking is one example of interactive teaching which is obvious to a Language specialist but not to EMI academics. In the project, one academic gave their students explanations, solutions, quizzes but *"When I ask about the questions, they say they didn't understand because of the language"*. The academic then integrated 15 minutes into their classes for students to ask questions but the students did not ask questions *"If they don't ask, how can I know they didn't understand?"* An English Language teacher can answer that.

## *8.5 Raise Linguistic Awareness*

EMI academics do not always give much consideration to the language they are using or the language that they expect their learners to understand and to use. In our project, by planning together, the EMI academics became more aware of the role that language plays in lectures. Before working together various academics made similar comments along the lines of: *"First of all we don't have any language problems", "the language doesn't come into play"* and "some problems *don't require any language skills"*. This lack of the academic's awareness of the importance of language in conveying the content led to frustration. They complained to us that

"*they [the students] don't listen to you and play with their phones"* or that students were *'shy'* or unwilling to speak in English. The academics did not consider the students' low levels of English proficiency or lack of comprehension as a possible reason for student silence in an EMI class even though "*when I tell them they can ask in Turkish, they start asking questions"*. This "shyness" disappeared with time and fourth year students *"aren't shy any more. It feels like they are more courageous to ask questions in English and it feels like they understand better in English"*. Attributing silence to shyness suggests that this academic was unaware of the reasons why students may remain silent such as processing time, the need to retrieve vocabulary from a mental lexicon, the time it takes to formulate ideas and produce language output, reasons which are obvious to and easily explained by a qualified Language teacher.

During the project, by testing out vocabulary on the English Language teacher, the EMI academics gained awareness of some word and sentence-level language issues involved in teaching through EMI: One academic, for example, became aware that technical words, with which they were very familiar, posed a problem to students. "*I uses the word 'myopy'. He [the English teacher] was surprised because he never hear of this word.…A lot of word expression vocabulary are really familiar to me but in the end I understood that it's not obvious to the students"*. A Physics lecturer who learnt that while 'plates' are part of a capacitor in Physics, an EMI student learns '*plate'* as an *"eating from thing"* found "*when [the English teacher] made me realise that, it was enlightening!"* A Maths academic told us: "*Technically speaking if the students are perfect in Maths they don't need to know the language you are using, they will perfectly understand what you mean. But in reality we need to explain these formulas, we need to support mathematics with language"*.

Within 8 weeks EMI academics realised the importance of language in conveying their subject. A Physics academic told us:

> *We have two languages in Physics; one is mathematics, the other one is English. Before this project I thought mathematics as a language was more important but now I feel the first medium should be English and this may be a little more important than mathematics for teaching undergraduate level.*

In fact, developing an awareness of language input occurred after only 4 weeks in many cases and this would suggest that planning together might be a very short-term exercise, perhaps taking place at the beginning of the academic year.

It is important to say that collaborative planning is a 2-way process in which 2 specialists can benefit: In the project the English teachers also learnt from collaboration and indeed this might be where such collaboration can make a significant impact. They learnt more about the content and the language used in discipline-specific lectures and this consequently informed their ESP lessons. If English teachers teach the word *"plate"* as general English and then introduce technical meanings of the word, this helps to prepare the students for their academic subject. However, if words and concepts are inextricably linked and words have different meanings in different subjects, this is not problem-free.

## 9 Conclusion

When making such a fundamental change to Higher Education as going international, we expect there to be guidance and support for the institution, academics and administrative staff. Universities would benefit from having some guidelines on the steps that a university should take to 'go EMI'. If a university is going EMI then we would expect some important structural changes to be made; for example, a university might develop a languages policy, train their administrative staff to speak English and other major languages in order to communicate with academics and students from around the world. We would expect staff development programmes for academics and recognition in time or money that teaching in an L2 (or L3, L4) requires more preparation time. We cannot expect EMI academics to bear full responsibility for students' language proficiency nor can we expect English Language specialists to retrain as experts in other academic subjects. Both EMI academics and language teachers have valuable skills and knowledge: joining forces in collaboration may well be the key to the successful implementation of EMI and hence English Language specialists are far from becoming dinosaurs in an EMI world.

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# Quality Assurance of EAP Programs in the EMI Context

**Donald F. Staub**

**Abstract** EAP programs in English-medium instruction higher education institutions play a critical role as they help move students of language and content from the general to the specific. Quality assurance of EAP programs is a necessity to ensure relevance and value-added in an increasingly crowded marketplace; as well as in an environment of increasing internal and external accountability. The challenge for many institutions and EAP programs is that those in charge of administering and evaluating the EAP program often lack the know-how and experience to effectively carry out an assessment of the program's quality. If an evaluation takes place, it is limited in the sense of depth or frequency and quite possibly ineffective, leading those who were asked to participate in its application to the logical conclusion that it was a useless exercise. This chapter proposes that those charged with the task of evaluating an EAP program, consider utilizing an established accreditation framework as a guide for conducting the evaluation. The position is made that established accreditation standards provide a clear and useful framework for evaluation. In addition, the process prepares the program staff for any possible accreditation applications. The two-birds-with-one-stone that this approach offers may prove to be a useful choice for EAP programs, particularly those with limited capacity.

**Keywords** Quality assurance · Accreditation · Program evaluation

## 1 The Need for Quality Assurance in EAP Programs

There is little arguing that higher education – particularly private higher education – has experienced considerable growth over the previous two decades (e.g., Altbach 2002, 2013; Buchanan 2013; Hornsby & Osman, 2014; Levy 2008a, b; Marber 2013). As a result of this expansion, many higher education institutions have turned to English Medium instruction (EMI) as a value-added proposition in order to attract prospective students (e.g. Kırkgöz 2005). The structure of the English language teaching program

D.F. Staub (✉)
Bandırma Onyedi Eylül University, Bandırma, Turkey
e-mail: Staubdonald2@yahoo.com



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in an EMI context is generally that, depending on incoming proficiency, students may spend an initial year in a Foundation program. As the students move on to a program of study that is delivered in English, they may be required to enroll in a Freshman English course or program in order to strengthen their academic English. As students progress into sophomore, junior, and senior years at the university, they may also experience additional English courses specifically offered to improve academic English, and further, English for occupational purposes. As Dearden ("The Changing Roles of EMI Academics and English Language Specialists", this volume) argues, such parallel coursework running alongside content classes is "vitally important to support students' comprehension of general academic and subject-specific English."

If such a structure is viewed as a set of concentric circles, the Foundation program can be seen as the core, the first concentric ring as the Freshman program, and subsequently the EAP ring(s). Each of these steps suggesting a move away from the general toward the more academic and more specific, with English for occupational purposes, if it exists, as the furthest ring from the core. This same configuration may also apply to the way that these various sub-units are perceived organizationally; a unit's distance from the core may determine how it is treated. The phenomenon that emerges is that in many cases, as a unit finds its task further from the core of the organization, the more "loosely coupled" (Weick 1976) it is. Weick makes the case that such entities are still within and responsive to the organization and yet also characterized by "impermanence" and "dissolvability" (p. 3). While being loosely coupled has its advantages – such as greater independence and flexibility – there is also an unfortunate side to this configuration, and that is that it may not receive the attention, status, and resources as the more "tightly coupled" units. Consider the core mission of a university: in general, it is to conduct research and teach. Schools of foreign languages are often perceived to be "service units" and not members of the core, which often compels SFL leaders to complain that they do not receive the same "respect" (i.e. status and resources) afforded to academic units within the university. The same can be suggested for many English for Academic Purposes (EAP) programs.

A recent study entitled *The State of English in Higher Education in Turkey*, carried out and published by the British Council (2015) notes that while in principal English for Specific Academic Purposes (ESAP) is generally accepted and believed to have value across EMI institutions, shortcomings in implementation are a lack of relevant materials, and the belief by ESAP instructors that they lack the content knowledge to effectively deliver the class. Furthermore, the report recommends that EMI schools emphasize ESAP in order to increase student motivation for achievement of language learning goals. The implication here is that such programs are routinely, systematically monitored in order to ensure quality of materials and instruction, and that stated aims of the program are actually being achieved. That is, that a quality assurance program is in place and evaluating the EAP program's effectiveness on a regular basis. The reality is that this is often not the case. While EAP programs may indeed be effective, they may also be much smaller than the core Foundation and Freshman programs, and reside outside the purview of established, systematic quality assurance efforts within their larger units; i.e. schools

of foreign languages. This certainly is a disservice to the students and the instructors. Regardless of the size of the EAP program, and its relationship to the core programs of the SFL, it is "of utmost importance" (see Macianskiene and Bijeikienė, "Fostering Active Learner Involvement in ESP classes", this volume) that a quality assurance program be implemented – one that can be effectively and efficiently implemented given the size of the program – so that students and instructors understand that the program is continuously in pursuit of improvement.

## 2 Selecting an Evaluation Model

There are numerous ways to give name to those courses or programs that exist beyond the foundation program within the School of Foreign Languages in an English Medium Instruction tertiary context. English for Specific Purposes (ESP) may or may not be found in the academic context, therefore we have English for Specific Academic Purposes. There is also English for Occupational Purposes, which provides a bridge between what the student has acquired during the academic experience, but will ostensibly use in the workplace setting as well. Nomnian (2006, referring to Jordan 1997) makes the case that English for Academic Purposes (EAP) encompasses more than simply the language; it includes providing students with the tools (e.g. study and time management skills) that help them become successful in school and career. In the twenty-first century educational context, there is far more for a student to gain than simply cognitive knowledge (i.e. language and content); there are numerous so-called noncognitive and social and emotional skills (e.g. Dymnicki et al. 2013; Rosen et al. 2010) that effective programs should impart upon their students, and therefore these should be taken into account when designing and evaluating language programs. Nomnian's point is compelling, and thus EAP will be used throughout this chapter to identify the broad class of programs that lie beyond the foundation program in an EMI environment.

The aim here, however, is not to define the context, rather to make the case that a useful, feasible, fair, and accurate evaluation of an EAP program must be implemented. Here, a justifiable question is *why*. A case can easily be made that, in many tertiary institutions, the SFL and its instructors do not garner the same status as their counterparts in academic programs (e.g., O'Dwyer & Atlı, "ESP/EAP for University Programs outside Target Language Communities", this volume). In such circumstances, it would be understandable if a program were to argue that attempts to improve quality would not result in a change in perception or resources. However, a counter argument can be made that ignoring quality assurance is simply no longer an option. Quality assurance is a necessity, particularly in the large and competitive market of private, EMI higher education, as well as in an environment of increasing internal and external accountability. Consumers of higher education want to be assured that the education that they are pursuing (and often paying handsomely for) will have a direct and immediate impact on employability and career once they have graduated. While the quality of the language program may not be the sole criterion

in the minds of the students and their parents when selecting a university, language is a critical factor that will help students compete as they enter the workforce. Norris points out that the job of evaluation is "to uncover the truth about [language] programs" (2016, p. 184), and in order for a program to understand whether it is providing value-added to its students, it is critical that it have a sense of whether it is meeting their needs. In this respect, evaluators must be prepared to engage in considerable learning about the language program and its learners, teachers, social circumstances, and educational approach (Norris 2009, p. 12), and, as Tsou and Chen propose, the evaluation should aim to answer three primary questions: whether learner needs have been fulfilled, whether the materials and tasks are authentic, and whether the course has successfully fostered learner autonomy (2014, p. 41).

In an ideal situation, Norris' admonition and Tsou and Chen's questions are addressed through regular, systematic formative and summative evaluations of the EAP program. The tension, however is that often, it is the instructor(s) who is called upon to carry out monitoring of the program. Indeed, *evaluator* is often viewed as a primary responsibility for EAP practitioners (e.g. Dudley-Evans and St John 1998; Hsu 2014). The unfortunate reality is that given the size of many EAP programs, and the limited resources that they are often afforded (c.f. Tsou and Chen 2014), systematic program evaluation becomes more of a luxury than an opportunity. This is particularly so when evaluation models, while rigorous and comprehensive (e.g. Hutchinson and Waters 1987; Tsou and Chen 2014; Watanabe et al. 2009), may also be formidable and beyond the capacity of the staff. Tsou & Chen, for example, propose a framework that considers a cross-section of views through an analysis of stakeholders such as policy makers, program designers, community members (the public and parents), sponsors, program designers, instructors, and students (2014, p. 39). Moreover, while evaluation may fall within the scope of their responsibilities, in all likelihood, the EAP instructor may not be trained in evaluation or research, or have "fallen out of the habit" of doing so (Lehtonen, "Practitioner Research as a Way of Understanding My Work: Making Sense of Graduates' Language Use", this volume). This leads to a situation where evaluation may not take place at all, or sporadically at best; which, of course, leaves students and instructors without updated materials, methods or assessments. Alhuqbani provides the example of a police training academy where the English language course had existed for more than a decade without periodical evaluation and "without adjustment" (2014, p. 9). Finally, there is the possibility that if an evaluation is not conducted internally, it may be carried out externally, thus perpetuating the belief among teachers that evaluation is something that is "done to us by external experts for mandated purposes" (Norris 2009, p. 7), which in turn sets the scene for conflict rather than growth.

Again, the issue is that EAP is often a course or set of courses, as opposed to a full, stand-alone program. Thus, it becomes difficult to justify or implement a comprehensive, rigorous evaluation; resources (e.g. attention, personnel, or know-how) are generally lacking. If evaluation takes place, it is limited in the sense of depth or frequency and quite possibly ineffective, leading those who were asked to participate in its application to the logical conclusion that it was a useless exercise.

Therefore, for the resource-strapped EAP program, a manageable, effective model is needed, and turning to accreditation standards as an evaluation framework may make good sense for three reasons. First, if the larger organization (i.e. the SFL or the institution) wishes to pursue accreditation, this will put the program on the proper road, familiarizing the instructors and administrators with standards, data collection, planning, and reporting. Second, accrediting bodies such as the Europe-based Eaquals, or the U.S.-based Commission on English Language Program Accreditation (CEA) have identified their well-reasoned standards through the input and guidance of peers and professionals in the field. Indeed, Eaquals was initiated by a group of professionals who had a stronger desire for rigorous quality standards and training opportunities, and similarly, CEA was founded by English language teaching and administration professionals, following a recommendation by a TESOL task force (CEA website). Furthermore, standards are not static; they are periodically reviewed and revised according to the needs of the field. The notion of an accreditation framework for evaluation may have its detractors, but at the same time, expectations are clearly articulated, providing practitioners with a clear roadmap with standards that guide them through an evaluation process. Indeed, as Norris notes, the aims of the two processes are not too far apart:

> Language program evaluation thought and practice was positively shaped by the the top-down, authoritarian orientation of the accountability movement through the design and adoption of thoughtful approaches that simultaneously met external demands and provided internally useful information (2016, p. 172).

The aim of accreditation and the entities that bestow the validation is to ensure that students, and their instructors, are receiving what they have been promised. In addition, the role of accrediting bodies is to periodically review an organization's intent and ability to perform systematic self-review. An evaluation should result from the same outcomes. Furthermore, for evaluation implementation – whether the evaluators are experienced or new to the process – the carefully articulated standards of the accrediting body provide a clear roadmap of expectations for quality and for the types data that should be gathered for evidence. Thus, relying on an accreditation framework allows the organization to build internal capacity, both for evaluation and for accreditation purposes, and as Tsou and Chen point out, it shifts program assessment from an externally mandated process to an internally motivated process (2014, p. 43).

## 3 The Accreditation Model

This chapter proposes that those charged with the task of evaluating an EAP program, consider utilizing an established accreditation framework as a guide for conducting the evaluation. An accreditation framework contains standards that have been written, and regularly reviewed, by professionals from the field. The set of standards comprise the key elements for which accreditors want to view substantial

evidence in order to determine whether the applicant organization is qualified to provide the services it is offering to its students. Whether an educational organization, such as an SFL or its EAP program, wishes to pursue accreditation, or simply conduct an internal evaluation, an accreditation framework is a useful tool as it provides clear explication of each standard and sub-standard, including descriptions of the forms of relevant data that can be used as evidence to satisfy the requirements of the standards. For purposes of illustration in this section, the standards of the Commission on English Language Accreditation (CEA) will be drawn from to discuss the way in which such a framework may guide an evaluation. It should be noted that this is in no way an endorsement of the CEA product for accreditation; every organization has differing needs, and is encouraged to research the numerous viable options available.

To begin, the CEA model is comprised of 44 individual standards across 11 standards areas, including Mission, Curriculum, Faculty, Student Services, Recruiting, and so on. While all standards would require a satisfactory response for a successful accreditation application, the aim of the chapter is to focus on the evaluation of an EAP program – which is generally housed within a larger unit such as a school of foreign language. Therefore, the evaluation framework proposed here will include the sub-set of standards that will perhaps prove most beneficial in monitoring the quality of the EAP program. That is, the evaluation framework will be used to review: *The Curriculum; the Length and Structure of the program; Student Achievement; and Program Development, Planning, and Review*. Additionally, this reduced structure perhaps offers a more manageable approach to evaluation, particularly for those programs with limited resources, such as personnel and time.

## *3.1 The Curriculum*

First and foremost, the curriculum of the EAP program must be aligned with the mission of the larger unit, be it the school of foreign languages or the university itself. CEA *Curriculum Standard 1* requires that the program describe in writing how the mission and the EAP align, as well as how the curriculum meets the assessed needs of the students.

Therefore, in addition to ensuring that the curriculum is consistent with the overall mission, it will be necessary for the evaluator to examine any needs analysis that has been carried out regarding the EAP program; this needs analysis must exist in writing. For larger and established programs, such a document most likely exists. In such cases, the needs analysis should be periodically reviewed, on either a 3 or 5-year basis.

A sticking point may emerge here for smaller programs, with fewer courses and instructors, many of whom may be only teaching a partial load in the EAP and therefore have limited time to devote to activities outside of teaching. Such programs generally claim that they are based on a needs analysis. Indeed, the smaller programs that offer only a few select courses often exist because their development is driven

by an academic program of study; i.e. an expressed need is forwarded by the program. A case in point is the EMI institution where the author works. Five of six faculties are teaching content in English, yet only three programs offer an EAP course for their students – Humanities and Social Sciences, International Relations, and Psychology. However, the shortcoming that may exist is that the so-called needs analysis is ad-hoc and based on a broad generalization that the English language skills of their students are insufficient. This often means that the students cannot write and speak in English. In other words, a formal needs analysis may be lacking.

As stated in the standard, "each curriculum *must* be responsive to assessed student needs and subject to regular review for possible modification." Therefore, it may require the evaluator to take a step backward and carry out a needs analysis, to the best of their ability. At the least, this would require interviews or an informal focus group with the faculty members of the academic program. In addition, EAP the instructor(s) can examine samples of student work as well as review texts and syllabi for the courses. The purpose of the latter is to gain a sense of work load in terms of readings, writing assignments, assessments (frequency and nature), speaking/presentations, and so on. Such a needs analysis becomes quite beneficial as it provides guidance in the creation or revision of the EAP curriculum; texts, assignments, and assessments can be utilized that emulate those in the academic program. Again, within reason and the constraints of the particular context in which the instructor-evaluator may be working, some form of a written needs analysis must be produced.

Following on the needs analysis is the formal, written curriculum. The written curriculum will articulate for each course the goals, the student learning outcomes, the objectives to achieve the outcomes, and the assessment methods used to measure the outcomes. Additionally, as is stated in this standard, "good practice" includes specification of a "logical progression" from level to level; e.g. the curriculum will indicate at which point the student will advance from CEFR B2 to C1. In some EAP programs there may be only one course and the student may not progress from one level to the next.

*Curriculum Standard 2* requires specifically that "course goals, course objectives, and student learning outcomes are written, appropriate for the curriculum, and aligned with each other." This is the opportunity for the EAP instructor-evaluator to either review, or document these critical aspects of the curriculum. Most likely, one or more of these features exists, and in varying degrees of specificity. A smaller program may be lacking a formal analysis of the interdependence and appropriate sequencing of the courses. If there are only a few courses in the program, then the question can be applied to the objectives: Are they properly sequenced and sufficiently address across the span of courses.

One useful exercise is to develop a curriculum map for the courses. This can be done on a spreadsheet with the objectives for each course listed in the first column, and the weeks/meeting dates for the term across the top row. As the teaching of the course progresses through the term, the EAP instructor-evaluator can monitor whether and when each objective is addressed. A simple version of this exercise is to check the appropriate cell on the date that the objective was taught. A slightly more information-rich version would be to write a numerical value rather than a

check in the appropriate cell. The value could indicate the degree to which an objective was addressed (e.g. 1 = briefly discussed; 2 = discussed + exercise in class; 3 = in-class project carried out). This requires more time, but it provides more data when evaluating student performance on assessments and learning outcomes.

Certainly, identification and articulation of student learning outcomes (SLOs) is a critical piece of this standard, and the EAP instructor-evaluator must ensure that are written and reflect the stated goals of the course and program. EAP SLOs will indicate the skills (e.g. make a presentation) and abilities (e.g. critical thinking) that the student will acquire as a result of the course. Identification of SLOs can again emerge from analysis of academic program syllabi, through conversations with faculty members, as well as from a corpus analysis. This standard specifies that SLOs must be "written, observable, measurable, and able to be expressed in terms of academic readiness or practical applications." According to the standard, it is also "critical" that SLOs and objectives represent significant progress during the program, and that the assessments are effective in making this determination.

There are many specialized software packages designed for maintaining a database of outcomes. If an EAP or SFL is large enough and has the resources to invest in such products, it may worthwhile to research the options. For smaller programs with fewer course sections and limited budgets, a simple spreadsheet will suffice. The rows across the top of the spreadsheet may include headers such as:

- The SLO (e.g. By the end of this course, students will be able to…)
- The Assessment (e.g. Students make 5-minue presentation on…)
- The Measurement (e.g. 70% of students will receive a score of 4+ on 7-point rubric)
- Result (e.g. 58% of students received 4+ on 7-point rubric)
- Action Plan (i.e. what will program do to solve this problem)
- Responsible individual (if there is more than one teacher, this column can be added)

*Curriculum Standard 3* asks the EAP instructor-evaluator to determine the appropriateness of materials and methodologies used for the course(s) in the program; i.e. do they contribute to mastery of course objectives. This standard may take the evaluator back to the needs analysis to review the materials, assignments, and assessments from the academic program courses; these items may be emulated for the relevant EAP courses.

## *3.2 The Length and Structure of the Program*

The length and structure standard requires that a calendar exists that specifies the number of hours of instruction per week, the number of weeks in a term, and the number of terms in a year. In addition, this standard requires justification that the calendar is adequately aligned with the goals, outcomes, and objectives of the program. A calendar will also specify the number of hours that are dedicated to

assessments and out-of-class activities, whether they are for academic support or social activities. This standard is also connected to the Curriculum standard in that, again, the evaluator can review the alignment between the length and structure of the program, and expectations for progression through the curriculum. Is there enough time and enough instruction to achieve the stated objectives and SLOs? To do will require collection and analysis of data concerning student progression and performance on assessments. CEA suggests that data can be collected and analyzed for the following metrics:

- Average pass/fail patterns for courses, levels, and the program as a whole;
- Rates of promotion at each level and for the program as a whole;
- Average time required for a theoretical student to complete all levels in the curriculum;
- Average actual time students spend in levels within the curriculum.

## *3.3 Student Achievement*

The Student Achievement standard addresses issues regarding placement of students in a program, methods for determining progression in a program, as well as communication and transparency with students regarding reports of progress and achievement. *Student Achievement Standard 1* asks whether students are accurately placed in a program. For an EAP program, this requires the instructor-evaluator to examine student progression prior to entering the EAP program. In many instances, students may gain access to a program by virtue of being in a particular academic program of study, and by having completed prerequisite language courses (e.g. Foundation and Freshman courses). *Student Achievement Standard 2* requires that the program documents in writing that a student is capable of progressing to the next sequential course, or exiting the program, as determined by appropriate assessment methods. *Student Achievement Standards 3* and *4* are focused on communication with students, ensuring that are aware of the assessment procedures to be used in the program, and that they receive written reports of progression and/or program completion.

For the evaluator in a large or small program, an analysis of the methods and procedures for assessment is required, which in turn determines whether student learning outcomes are being achieved – that is, that learning is taking place. CEA suggests numerous sources of *Direct Evidence* that can be used to monitor and verify learning within the program. A shortened list includes:

- Teacher- or program-made tests;
- Portfolios;
- Grades based on explicit criteria related to clear learning goals (not attendance or effort);
- Sample course or homework assignments;
- Term papers and reports;
- Research projects;

- Case study analysis;
- Class discussion participation;
- Video and audio tapes;
- Student publications and presentations;
- Capstone projects;
- Evaluated performances or projects.

## *3.4 Program Development, Planning, and Review*

CEA states that "the effective administration of an English language program requires intentional, regular analysis of program goals and results." This is one reason why the accreditation framework is compelling as a means for implementing a program evaluation: The recognition and requirement of regular, systematic program evaluation is essential to the health of the program itself and the overall language teaching unit within the university. The two individual standards underlying this standard address the issue of having written plans for development and evaluation of the program. *PDPR Standard 1* ensures that the larger organizational unit (e.g. the school of foreign languages) undergoes regular analysis, evaluation, and planning. *PDPR Standard 2* requires that the larger organizational unit has a written plan for systematic review and revision of its program components (e.g. the EAP program). In relation to the EAP evaluation, this standard expects review of curricular elements and assessment practices. CEA offers guidance here by suggesting lists of "good practices" that an instructor-evaluator may undertake to examine the quality of the curriculum and assessment activities.

Curriculum Review:

- Goals and objectives and syllabus for each course;
- Teaching materials;
- Methods and methodologies;
- Student outcomes;
- Feedback from faculty and students.

Assessment Review:

- Placement tools;
- Teacher-made tests;
- Rubrics and other evaluation tools;
- End-of- term exams;
- Methods by which the program or institution documents student achievement;
- Faculty surveys and student satisfaction surveys;
- Data about student performance relative to course objectives such as pass/fail rates;
- Data on assessment, achievement of learning outcomes and progression to the next level, program retention and completion.

## 4 Implementation & Issues

Without question, program evaluation is a critical process that must be systematically and regularly implemented. This chapter has presented the argument that an accreditation framework provides an apt model for guiding program administrators and/or instructors through an evaluation process that is clearly designed and manageable, particularly for smaller EAP programs. Regardless of program size, it is essential that a few key pieces be in place in order for an EAP evaluation to enjoy a successful first implementation, as well as systematic cycles into the future. If an EAP is lacking leadership, local ownership, resources, and opportunities for ongoing professional development it may be possible to implement a single evaluation, but it will be extremely difficult to sustain this exercise on a regular basis. Solutions exist, however.

### *4.1 Leadership*

As mentioned throughout this chapter, many EAP programs are not within the core processes that make up the umbrella unit, such as the school of foreign languages. EAP programs are often two or three concentric circles removed from the core, which can make them "loosely coupled" (Weick, 1976) entities. In any form of evaluation, leadership plays an essential role. However, in the case of the loosely coupled EAP program, the presence of leadership is particularly important. It is also the functions of leadership that are worth noting. Norris refers to leadership as a key element that facilitates assessment and evaluation through encouragement and provision of resources (2016, p. 174). There is also leadership that drives accountability, requiring regular evaluation and continuous improvement from a program. There is also leadership that effectively fosters a vision of quality and inquiry across a unit. The EAP program is an apt example for where Distributed Leadership (e.g. Spillane et al. 2004; Spillane & Sherer, 2004) can make a significant impact. It is not the leader her or himself that is the focus of Distributed Leadership, rather it is the leadership action that becomes relevant; it is the leader's cognition (e.g. vision) that is "stretched" across an organization. In such circumstances, it does not become important who the positional leader is (e.g. chair or dean), but who are the figurative leaders who have followers and who can make progress toward achieving a vision. As units, such as an EAP program, find themselves further from the core and perhaps not under the day-to-day supervision of the positional leader, it may prove difficult for the program to gain buy-in from the teaching staff. If, on the other hand, the positional leader has effectively created an environment in which Distributed Leadership thrives, then it does not matter how close the unit may be to the core – there will still be pursuit of a vision by a greater number of staff and engagement with the EAP program will increase. EAP programs often exist on the fringes of the SFL; Distributed Leadership can help strengthen its quality by encouraging more staff to view it as still part of the core mission of the school of foreign languages.

### 4.2 Local Ownership

When designing a quality assurance system – one that includes program evaluation – it is important to keep the local context at the forefront of all planning. It is the local teachers and administrators who will ultimately be responsible for collecting and analyzing data, as well as developing and implementing action plans. "Participation in evaluation by language teachers and other stakeholders, either directly (as evaluators themselves) or indirectly (as primary sources of evaluation data), will lead to both a more comprehensive understanding of what happens in language programs" (Norris 2009, p. 11). Furthermore, as the instructional staff decreases in size because of the program size, more responsibility falls on the shoulders of a smaller cadre, making quality assurance increasingly sensitive endeavors due to workloads and ownership. Therefore it is critical that evaluation implementation ensure local buy-in; i.e. the perception should be, avoided at all costs that the results will find their way into staff appraisals. Likewise, as evaluations increasingly conducted for "explicitly formative purposes" (Norris 2016, p 175) it is essential that the aim of the process be clearly shared with the instructors. The easy solution is transparency, with early, frequent, and earnest conversations with instructors to solicit input in order to make sure that the evolution is not simply a "busy exercise", rather providing value-added to the program and instructors; evaluators have to construct their efforts within frameworks that make sense to the real stakeholders (Norris 2009, p. 12). Where possible, leadership roles in the evaluation process should be offered to instructors. Additionally, if the size of the teaching staff allows, is to create a working group comprised of a diversity of instructors from the EAP program; differing voices bring differing perspectives.

### 4.3 Resources

There are two critical resource issues that merit discussion: lack of qualified personnel and technology (i.e. a data warehouse). Lack of qualified personnel is a major resource issue in many programs – This may be particularly true for those programs embedded within larger programs (e.g. within a Foundation program) where many instructors and administrators may have appropriate post-graduate degrees (e.g. Delta, TESOL certificate) but little-to-no formal training for the specific content, assessment, and particularly evaluation. Likewise, smaller programs where teachers and administrators are teaching full time while handling other responsibilities simply do not have the means to conduct in-depth evaluation. Know your limitations; if you start out with a grand plan (multiple outcomes and numerous objectives), but lack the resources (time, personnel, or knowledge – of, for example, how the CEFR works) then the result may be little more than a lengthy, frustrating experience…and potentially little to show (Bruce and Hamp-Lyons 2015, p 76).

Likewise, technology is often viewed as something for the "other'. In an age where" big data "seems to be the only data that is worthwhile, the notions of aggregating, disaggregating, and analyzing data take on air of something reserved for those with unique software and talent. The truth is that regardless of the size of a program, a database is an indispensable tool – no matter how rudimentary it may appear (e.g. Ecke and Ganz 2015). Quite often, and particularly with smaller EAP programs, different data may reside in different databases around campus; it may be a task for the program administrator to locate the data and pull it into local data warehouse that can be used over time for tracking student performance (and identifying barriers to success), reporting program outcomes, monitoring student retention, and perhaps predicting student behavioral patterns. If resources do not permit, a homegrown" data warehouse can be developed and maintained quite easily with a spreadsheet, as long as responsibility is defined for frequent data input. Google sheets and forms are very user-friendly ways to gather data from a group of instructors. Once a system for analyzing and reporting is established, it becomes less stressful asking instructors to input student performance data.

## *4.4 Ongoing Professional Development*

Finally, it is important to ensure that those who are teaching in and administering EAP programs have access to training opportunities. As noted by the British Council report mentioned at the beginning of this chapter, EAP instructors often lack the content background to adequately teach the courses that they have been assigned. For new teachers in the program, this may bluntly mean that they are "staying one chapter ahead of the students". There are also issues of training regarding materials and assessments development, technology, as well as moving beyond language teaching.

Further, it is no longer sufficient for universities to simply impart content knowledge – including language. In order to prepare students for successful academic and professional careers, they are expected to acquire a host of so-called non-cognitive and social/emotional skills and abilities (e.g. Dymnicki et al. 2013; Rosen et al. 2010). These are attributes that range from time management and self-regulation to relationship building and self-efficacy. These are also the attributes that many students are failing to acquire in high school because of the demand for strict dedication to university entrance exam preparation. As the research points increasingly in this direction, when administrators are trying to increase student success and decrease student attrition (i.e. dropping out) it is necessary for the instructors to have a better understanding of the key concepts and approaches for helping students strengthen these attributes. The most sensible method is through continuing professional development (CPD). Depending on the size of the EAP unit, instructors and administrators may be able to devise an EAP-CPD plan of trainings or conferences to attend. This has a tie-in back to Distributed Leadership – if it exists, there is a far greater chance that an effective CPD program will be operating across the SFL for the benefit of all, including the EAP instructors.

## 5 Conclusion

EAP programs are very often a bit of a distance from the core unit within the SFL (i.e. the Foundation program) and therefore are often overlooked in terms of resources and attention to quality. However, EAP programs are critical for their students and the overall success of an English language program at EMI institutions and therefore they should be evaluated on a regular basis. A common challenge is, however, that EAP programs can be small and lacking the internal expertise to systematically carry out effective evaluations of the program. This chapter has made the proposal that accreditation models for language programs can serve as a useful tool for EAP program instructors and evaluators. Current accreditation frameworks for language programs are developed and continuously revised by professionals in the field, ensuring that the standards are meaningful and clear. Thus, the use of an accreditation model – in whole or in part – utilized as an evaluation framework not only gives the evaluator a clear set of guidelines and suggested data points, but it also puts the program on a track toward accreditation, should the larger organizational unit choose to pursue external validation. Many EAP programs found at EMI schools are large and established and may have a quality assurance unit that can conduct or assist with internal evaluations. However, for those who lack the size and resources to implement an evaluation, perhaps the concept of the accreditation model as an evaluative framework will provide value while helping minimize the challenges that emerge with a smaller EAP program.

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