

Routledge Research in English for Specific Purposes

VOCABULARY AND ENGLISH FOR SPECIFIC PURPOSES RESEARCH

QUANTITATIVE AND QUALITATIVE PERSPECTIVES

Averil Coxhead

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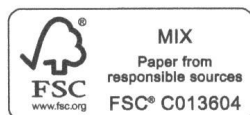
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Vocabulary and English for Specific Purposes Research

Vocabulary and English for Specific Purposes Research provides an important contribution to the study of vocabulary and its relationship to ESP research and teaching.

Presenting Coxhead's original research plus a comprehensive review of research in this field, this volume advances understanding of the theoretical and methodological research in this area, and relates the findings to ESP teaching. Key features include the following:

- an outline of the nature and role of vocabulary in ESP from both quantitative and qualitative approaches;
- analysis of context in vocabulary research in four key areas; and
- a review of the application of vocabulary research to professional and pedagogical practice.

Written by a leading researcher, *Vocabulary and ESP Research* provides key reading for those working in this area.

Averil Coxhead is a Senior Lecturer in the School of Linguistics and Applied Language Studies, Victoria University of Wellington, New Zealand.

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Series editors: Brian Paltridge and Sue Starfield

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Brian Paltridge is Professor of TESOL at the University of Sydney. He has taught English as a second language in Australia, New Zealand and Italy and has published extensively in the areas of academic writing, discourse analysis and research methods. He is editor emeritus of the journal *English for Specific Purposes* and co-edited the *Handbook of English for Specific Purposes* (Wiley, 2013).

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Averil Coxhead

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Introduction

Introduction

This book is about vocabulary research in English for Specific Purposes (ESP) – that is, technical or specialised vocabulary. The book is meant for established and new researchers, and interested teachers in ESP and vocabulary studies. The aim of the book is to broadly pull together vocabulary research into ESP in one volume, drawing on the strengths of research in vocabulary studies over recent years. ESP is an umbrella term for many areas of specialisation, including English for Academic Purposes (EAP), Professional and Occupational English and English in the Trades. The volume aims to use these discussions as a way to help build our understandings of vocabulary through the lens of ESP. That said, this is not a book about vocabulary acquisition, *per se*.

ESP vocabulary research includes a broad base of quantitative research, mostly drawing on large-scale, corpus-based analyses of written and some spoken texts in ESP, and a less well-established, but no less important, focus on qualitative research. Qualitative studies can shed light on specialised vocabulary in ways which corpora alone cannot. As Durrant (2014, p. 354) writes, corpus-based studies cannot tell us ‘How students interact with the texts or what they need to be able to know about or do with words to complete their tasks successfully’.

Technical vocabulary is known by a large number of different terms in the field (see Nation, 2013), including semi-technical and specialised vocabulary. A well-known distinction is Beck, McKeown and Kucan’s (2013) three-tier model: basic vocabulary (Tier One), high frequency/utility words that are cross-curricular (Tier Two) and low frequency, domain-/area-specific lexis (Tier Three). This book is concerned mostly with Tier Two and Tier Three vocabulary. I use the term *specialised vocabulary*.

This volume approaches vocabulary research for ESP by looking first at ways to identify this lexis, word list research in the field and multi-word units. The next section focuses on ESP vocabulary in four contexts: secondary school, university, professional and occupational contexts and trades-based education. The final section is on ESP vocabulary research in language

curricula, materials design and testing. The book also aims to identify gaps in these fields and suggest possible research to help fill them.

Why is vocabulary important in ESP?

There are many reasons why vocabulary is important in ESP, and each chapter in this book begins with reasons for investigating this field. Overall, there are several main reasons common to all these areas. The first reason is closely related to a feature of specialised vocabulary in ESP, which is its limited range of use (Nation, 2013). Defining this lexis can be difficult because we need to decide whether only words which are closely related to the subject are specialised or only those that are unique to the subject area are specialised. If we take the first approach, then the definition is much wider and inclusive. If we take the second approach, then the definition is much narrower and exclusive. For this reason, estimating the size of a technical vocabulary is difficult, because a great deal depends on which approach is taken. Estimates of how much technical vocabulary might be in a text can range from 20% to 30% of a text (Chung & Nation, 2003). If up to one word in three in a line of discipline-specific text could be technical in nature, then the sheer amount and frequency of discipline-specific lexical items in specialised texts is a powerful reason why this vocabulary is important.

Nation (2013) points out that Medicine and Botany are fields with large technical vocabularies. Second and foreign language learners need a large vocabulary to cope with their studies in academic or professional environments. Evans and Morrison (2011, p. 203), in a paper on the first-year experience in English-medium higher education in Hong Kong, found a lack of technical vocabulary to be a major source of difficulty for students. In research into vocabulary in trades education, students report the same problem (Coxhead, Demecheleer & McLaughlin, 2016). Vocabulary research in EAP can help identify the single words and multi-word units these learners need. It can also find out more about the vocabulary these learners use in their writing – for example, Hyland and Tse (2007) and Durrant (2014, p. 353) found that vocabulary use differs across disciplines. To use Durant's examples, philosophy students use specialised adjectives such as *ontological*, engineers use specialised nouns and Science students use specialised verbs.

Another reason why specialised vocabulary is important is that knowledge of the vocabulary of a field is tightly related to content knowledge of the discipline (Woodward-Kron, 2008). In a longitudinal study of undergraduate students' academic writing in Education, she writes,

The specialist language of a discipline is intrinsic to students' learning of disciplinary knowledge; students need to show their understanding of

concepts, phenomena, relations between phenomena etc. by incorporating the specialist language and terminology of their discipline into their writing accurately. They also need to adopt the specialist language in order to make meaning and engage with disciplinary knowledge.

(Woodward-Kron, 2008, p. 246)

This engagement with disciplinary knowledge and vocabulary is important also because it signals belonging to a community which shares the same concepts and understandings of a field (Ivanič, 1998; Wray, 2002).

Technical vocabulary in a field may or may not be shared with other technical areas, and learners do not tend to meet this specialised or technical vocabulary outside the discipline of their studies. Medical vocabulary, for example, is typically not included in everyday conversations in English. Plumbing vocabulary tends not to be well known outside the field but can become particularly important in the event of a burst pipe or worse. That said, we all need, at some point, to communicate with plumbers and medical professionals, and it is important that these specialists also know how to help non-specialists understand what they are saying. Vocabulary research can help these endeavours also.

Why am I interested in specialised vocabulary?

My interest in this field developed firstly through teaching in language schools in various countries, such as Romania, Hungary and Estonia. The students in these schools were predominantly adult learners, and many had quite low levels of proficiency in English. Many of these students were professionals, for example, heart surgeons, agricultural scientists, teachers and business people, and their language needs did not seem to be well served by the general English textbooks which made up the curricula in the schools. These textbooks and materials had other important functions for the students, such as helpful ways to meet and talk about general topics, and support for language skills development. At a teacher's conference in Estonia, Larry Selinker, professor emeritus of linguistics at the University of Michigan, gave a talk where he emphasised the importance of empirical research to support learning and teaching. This talk served as a turning point as I began to wonder what sort of empirical research I needed to know about for my teaching, and what assumptions I was making as a teacher.

During my postgraduate studies back in Aotearoa/New Zealand, I began to teach EAP. It was during this time that I became more aware of research in vocabulary studies and how it could inform and, in some cases, transform the learning and teaching objectives of a class. I consulted Jim Dickie at Victoria University, a wise lecturer in my postgraduate studies about doing a thesis as part of my master's study. Jim said, 'You know what works, but you don't know why.' This was another turning point. And

then John Read, also then at Victoria University, mentioned that Xue and Nation's (1984) University Word List needed updating. So I went to talk to Paul Nation. This is how the Academic Word List (AWL) (Coxhead, 2000) research began. I have been lucky enough to be able to have opportunities to talk about research with these and other great colleagues in Aotearoa/New Zealand and in far-flung places many times over the last 20 years.

How is this book organised?

The book is organised into three main parts. The first part contains the first three chapters, and they focus on different aspects of research into vocabulary in ESP. Chapter 2 looks at approaches to identifying vocabulary in ESP, from corpus-based approaches with quantitative measures through to qualitative approaches, including, for example, using a scale, consulting experts and consulting a corpus for evidence of language in use. Chapter 2 looks into specialised word lists, which is a fast-moving and fairly large area of research. There seem to be more word lists for ESP than ever before. This chapter looks first of all into developing and validating word lists and then moves into showing how word lists have been used to find out more about the nature of specialised texts, particularly in EAP and for finding out about how many words learners need to deal with the vocabulary of these texts (Nation, 2006). Chapter 4 focuses on multi-word units and metaphor, particularly in EAP, because this is where much of the research is to be found. The multi-word unit section of the chapter draws on research into general and specific collocations for EAP, lexical bundles and academic formulas, and on disciplinary perspectives (for example, work by Hyland, 2008; Biber, 2006; Simpson-Vlach & Ellis, 2010; Liu, 2012, to name a few).

Part Two is about vocabulary in a range of contexts, beginning with secondary and Middle School lexis (Greene & Coxhead, 2015) in Chapter 4. Four main subject areas form the main part of this chapter: English Literature, Mathematics, Science and Social Sciences, with examples from written and spoken corpora. Chapter 6 focuses on pre-university, university and postgraduate vocabulary research, which are areas of major activity in EAP. Case studies from a range of subject areas are included, such as Sciences, Agriculture, Engineering, Medicine and Computer Science. Chapter 7 is based on vocabulary in English for Professional and Occupational Purposes, drawing on research into a variety of areas such as Aviation, Legal English and Business and Finance, and occupational vocabulary in Medical Communication and Nursing. The final chapter in this group is on vocabulary in the trades, based on a major research project between Victoria University of Wellington and the Wellington Institute of Technology. The project investigates discourse and lexical elements of four trades: Carpentry, Plumbing, Automotive Engineering and Fabrication. The