Journal of Second Language Teaching and Research. Volume 1 Issue 2 pages 143 – 154

CORPUS TECHNOLOGY AND VOCABULARY TESTING IN EAP

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Abstract

This article sets out to question a common approach to vocabulary in many EAP contexts, and suggests that the AWL, used uncritically, does not meet the needs of many EAP students. It will then suggest utilising corpus technology for electronic text analysis as a step towards empowering EAP test design in ways which promote more sophisticated vocabulary engagement. It will first discuss vocabulary study in EAP contexts from three perspectives: the appropriateness of the AWL, the potential role of electronic text analysis in utilising authentic academic materials, and perspectives on EAP vocabulary testing as testing of a knowledge-base or an acquisition-skill. It will then assert the practicality of corpus technology being used by EAP practitioners to design vocabulary tests which would better reflect the literature on vocabulary acquisition and benefit learners by promoting higher level engagement with vocabulary.

Keywords: vocabulary, corpus, AWL, testing, EAP, EGAP, ESAP, technology

Introduction

Vocabulary is a perennial element of language courses, but its status in syllabus design waxes and wanes. Within EAP, few publications can have been as influential as Xue and Nation's (1984) University Word List or Coxhead's (2000) Academic Word List (AWL), products of a sophisticated corpus research program which recognised vocabulary as central to success in university study. However, though the wordlists themselves became staples of EAP practice, simplistic approaches to them have, to some extent, resulted in a departure from the research paradigms they emerged from. For example, EAP textbooks frequently cross-reference wordlists derived from their own carrier content with the AWL, and most EAP programs will, I believe, introduce the AWL to students but, beyond various gap fill exercises or matching exercises, there is a marked absence of instruction which relates to other facets of vocabulary mastery such as productive knowledge, automaticity, familiarity with lexical chunks, connotation and semantic prosody. Indeed, reading Carter (1998) bemoan "a paucity of what teachers consider appropriate models for vocabulary teaching", I was struck by the irony that, not only

has well over a decade passed, but that he actually provides a number of models. Consequently, I began to reflect upon my own efforts to engage students with the facets of vocabulary knowledge the literature identifies as vital for proficiency (see Schmitt, 2010 for an up-to-date overview of research in the field).

Reflecting on my own classroom practice and students' performance has led me to conclude that, without the support of a syllabus which is integrated with advanced vocabulary study skills, there is little chance of successfully facilitating acquisition of advanced vocabulary features: on one hand, the time I can find for teaching vocabulary study techniques always seems to decline as courses progress; on the other, with students of varying levels of proficiency, motivation and interest, commitment to vocabulary study is often highly exam orientated. Thus, before long, vocabulary is pushed off the agenda, the AWL is left to self-study, and the result is that there seems to be very little advanced vocabulary knowledge transferring to student production, written or oral. My conclusion is that the backwash effect of examinations is a key factor in this (Hughes, 2003, p.53). This article aims to show how current models of vocabulary in EAP are inadequate in many contexts and how very simple applications of corpus-technology could be used to inform vocabulary test design to promote the kinds of vocabulary study that vocabulary research promotes.

The appropriateness of the AWL

Hyland and Tse (2007) question the appropriateness of the AWL. Their arguments consist of two main points: firstly, lack of disciplinary specificity results in inefficiency in the AWL, being an English for general academic purposes (EGAP) wordlist (cf. Hyland, 2011 for a discussion of the concept of disciplinary-specificity); and, secondly, that decontextualised wordlists provide inadequate context, cotext and use: wordlists out of situ do not provide sufficient quality of vocabulary exposure to enable students to meet the demands of operating within academic discourse communities. They conclude with an appeal for genre specific vocabulary instruction and, amongst other things, suggest that students could be trained to utilise specialised corpora themselves.

Hancioğlu and Eldridge (2007) also have concerns about the AWL. They, however, emphasise its poor coverage, alongside the need for advanced writers to grasp features of academic vocabulary such as semantic field and lexical phrases. Whilst they do recognise the tension

between discipline specificity and the notion of a general academic wordlist, they suggest that "there may be no alternative but to expand such lists, and continue to work our way through them", as well as recommending more sophisticated exploitation of them. Similarly, Eldridge (2008) and Granger and Paquot (2009) also seem to support the notion that word lists can be salvaged through a process of refinement: exposing core meanings shared across disciplines and including such aspects of word knowledge as lexicogrammar and phraseological patterns.

It is difficult to say whether, at a theoretical level, training students to utilise specialised corpora would be preferable to devising a revised word list which accessed a truly shared core of vocabulary knowledge, fleshed out with the features of vocabulary knowledge required for mastery. What I will suggest is that, in my daily context of practice, neither seems practicable at present. In the first instance, general EAP tutor expertise, average student level and motivation, and institutional resources and support would seem prohibitive of corpus technology being exploited in the classroom. On the other hand, there seems to be a long way to go before corpus research provides wordlists which take account of the challenges of specificity and contextual features of use (see Flowerdew, 2011 for a discussion of current methodological considerations and challenges in the use of corpora for ESP).

Corpus Research, Electronic Text Analysis (ETA) and Authentic Texts

Adolphs (2006) recognises a number of competing uses of and interpretations of the lexeme 'corpus', and introduces the term 'electronic text analysis' (ETA). To borrow her term, though with a somewhat refined usage, this paper will try to delineate two interpretations of corpus-based analysis around the notions of population and sample: 'corpus research' and 'ETA'. Corpus research can be viewed as analysis of a sample of a population with the intention of generating inferential descriptions of the population the sample purports to represent. In contrast, this paper will use the term ETA to refer to computerised analysis of a population with the intent to describe just that population. See figure 1.

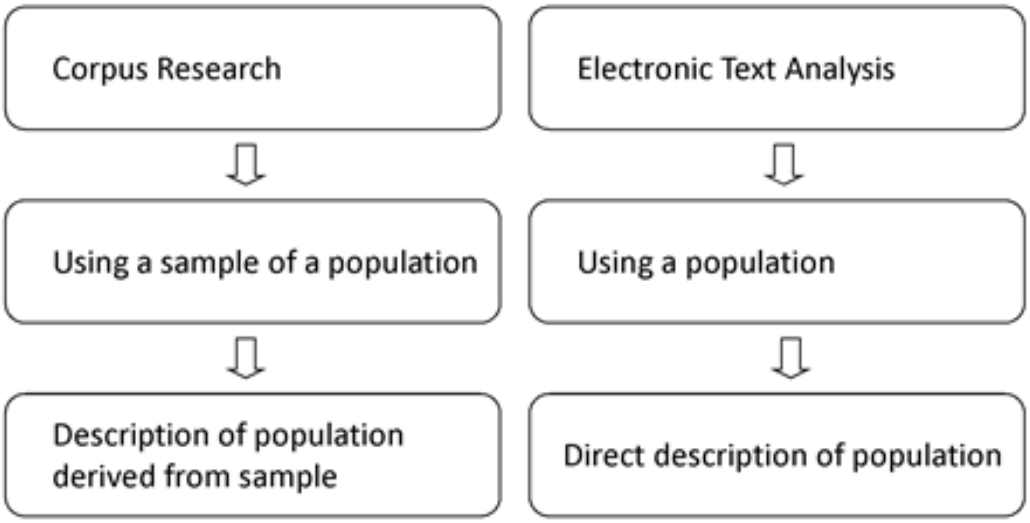

Figure 1. Corpus Research cf. Electronic Text Analysis

Defined this way, ETA can be seen as an application of corpus technology but not corpus research.

The most key consideration in applications of corpus research, such as the AWL, can be reduced to the relationship between sample and population. For example, the discussions reprinted in Controversies in Applied Linguistics (Ed. Seidlhofer, 2003) all hinge on this issue. Prodromou, for instance, questions using research which sampled native speakers when, he argues, the typical context of English use does not involve native speakers. The first strand of Hyland and Tse's (2007) critique of the AWL is much the same point, though the difficulty here is discipline specificity, as opposed to world Englishes. The relationship between sample and population is central to any discussion of the relationship between corpus research and pedagogy. ETA, on the other hand, need not concern itself with this, as it is simply a tool for description of a population.

Miller (2011) argues for increased inclusion of authentic academic text in EAP provision, as well as claiming that EAP practitioners in general are in favour of such a move. Hence, it seems reasonable to suggest that, as EAP courses increasingly incorporate authentic material, so the

potential to exploit them for vocabulary test design through ETA seems viable, and the need for decontextualised wordlists will diminish. If the authentic texts used on courses were to inform vocabulary test design in a principled manner, then such issues as genre, disciplinary specificity, and context, cotext and use would be brought back into focus, and this, in turn, could encourage teachers and students to engage with vocabulary on those levels. Of course, the issue of text coverage, a key principle behind the AWL, would, however, be left rather less clear.

Teaching and testing vocabulary as a knowledge-base or an acquisition skill?

Clearly, vocabulary tests informed by ETA of authentic academic texts used as course inputs would not provide a test of general academic proficiency, only of the vocabulary of a very narrowly focused field and, here, the approach to vocabulary testing suggested runs into the logistical issues surrounding EGAP and ESAP (English for Specific Academic Purposes). For many practitioners, whatever the theoretical concerns over ESAP provision may be, it is the logistical necessity of teaching students headed for disparate fields within the same classroom which poses the most obvious challenge (Granger and Paquot, 2009: 104). Thus, the issue of selection of an appropriate discipline, or level of specificity, for mixed-academic-purposes classes arises. However, this only need concern us if vocabulary instruction is taken to be provision of a knowledge base; the validity of this conception of EAP vocabulary instruction is, however, questionable.

The notion of providing a vocabulary knowledge base for academic study is very closely tied to the creation of wordlists and the principle that 95% of the words in a text need to be recognisable before a text can be successfully comprehended (Nation, 2001, pp.144-148). Discussing the principles behind academic wordlists, he writes:

> Knowing academic vocabulary is a high priority goal for learners who wish to do academic study in English. After gaining control of the 2,000 high-frequency words, learners need to then focus on academic vocabulary. Knowing the 2,000 high-frequency words and the *Academic Word List* will give close to 90% coverage of the running words in most academic texts. When this is supplemented by proper nouns and technical vocabulary, learners will approach the critical 95% coverage threshold needed for reading. (Nation, 2001, p.197)

While the fundamental points being made are sound, there are a number of assumptions which need to be teased out.

1) Firstly, knowledge of academic vocabulary *should* be a priority for learners who wish to study through English. However, many students appear sceptical of the idea that intensive study of the AWL *is* a priority: on one hand, as Hughes (2003) suggests, for many students, their exams set their priorities, and their engagement with study is strongly determined by the nature of the exams they take; on the other, many students struggle to relate language needs identified by research to a task they are yet to engage with, dealing with academic discourse, if they are not presented in a clearly integrated format. Indeed, Nation (2001) emphasizes the point that the AWL recognition goal is only *one* vocabulary goal, directed to meeting only what he sees as the minimum requirements for successful reading. Thus, if exams are limited to weakly contextualised discrete items, then many students will not be engaging with academic words on any level beyond this, which is insufficient for successful engagement with academic discourse. Furthermore, when assessment of vocabulary in production is left to marker intuition, it appears to have very limited backwash effect.

2) Secondly, with the continued expansion of English medium programs and higher education becoming increasingly business orientated, it would be unwise to assume students *are* familiar with the 2,000 high frequency words the AWL seeks to build upon, especially if 'familiarity' is taken to refer to anything more than basic recognition. In addition, the division between academic and technical vocabulary is not entirely straightforward either: for example, Hyland and Tse (2007) see academic vocabulary and technical vocabulary as existing on a cline, as opposed to being clearly distinguishable categories. The word list approach to vocabulary acquisition is based on a view of producing readers with a general, albeit academically focused, proficiency, broadly comparable to that of a native speaker embarking on the same course of study: a reader ready to supplement a functional vocabulary knowledge-base with the technical vocabulary of whichever fields they enter. However, whether this target is achievable in all EAP contexts is questionable, especially where motivation or extent of proficiency is in question.

Indeed, Nation seems well aware of such issues:

> For native speakers, knowledge of academic vocabulary is a sign that they have been involved in academic study of various kinds. The vocabulary is the result of the experience. For second language learners who do not know the academic vocabulary of English it is important to determine if they have gained academic skills and experience in their own language. If they have, then direct learning of the *Academic Word List* is one of a variety of useful ways to get control of this vocabulary. If however, second language learners of English have not done academic study in their first language, simply learning academic vocabulary will not make up for this lack of experience. They need to learn the academic vocabulary as they develop skill and experience in dealing with the appropriate range of academic discourse. (Nation, 2001, pp.197-198)

It is the contention of this paper that, in many EAP contexts, the numbers of learners that fall into the latter category are the majority, and not the exception, but that the standard EAP approach to vocabulary studies in many contexts assumes the former.

If learners are of a sufficient level of language proficiency, academic maturity and motivation, it is conceivable that a simple wordlist could successfully facilitate transfer of academic vocabulary known in their L1, expanding their English lexicon, contributing to 95% comprehension of academic texts in general. However, if these features of learners are in doubt, the goal of a generalised academic reader starts to appear overly ambitious. Fortunately, there are suggestions in the literature that this is by no means the only possible goal. For example, Nation and Warring (1997) suggest that “Within narrowly focussed areas of interest, such as an economics text, a much smaller vocabulary is needed than if the reader wishes to read a wide range of texts on a variety of different topics” (p.10). Hancioğlu and Eldridge (2007) would appear to concur, noting that “acquisition of a relatively few additional items can have a marked effect on the understanding of a particular text”. Thus, if the goal of the generalised academic reader ready to deal with any academic text is rejected, the vocabulary learning goal begins to look more feasible, though the question of which vocabulary items to teach remains.

The answer this paper will suggest is as follows: we should not be teaching vocabulary items, but rather the skills of vocabulary acquisition. If we teach students how to engage with the vocabulary of a genre, and then test them on that, we can conclude from their performance the extent to which they have developed the ability to adapt to the vocabulary demands of an academic discourse community. This approach, it is suggested, would have validity both within EGAP, but added value within ESAP, where the logistics of an institution allowed it, as it would have the incidental effect of providing some discourse specific vocabulary knowledge-base alongside the development of the vocabulary acquisition skill which should still be the target.

A brief discussion of the practicalities of corpus-technology for ETA informed test design

Corpus technology has never been so user-friendly, with current versions of software packages such as Wordsmith Tools (Scott, 2008) or AntWordProfiler (Anthony, 2009), which is free, being Windows based and requiring little expertise on the part of the user. One basic use is creating word lists. Using the software to compare wordlists derived from authentic materials used on a course against a comparison corpus can determine patterns of relative overuse or underuse of words in the texts; this is the same principle by which the UWL and AWL were derived. Thus, neither specialist discipline knowledge nor computer programming skills are needed for a test designer to identify key lexical features of the texts the students have worked with (ETA, as opposed to corpus research, using the terminology suggested above). Current software packages can also easily provide a host of other descriptions of salient features, such as collocations, word clusters and patterns of distribution within texts, which could also be used to develop appropriate test items which address more advanced facets of word knowledge.

The literature, despite some differences in respect to the role the AWL should play and the extent of inter-disciplinary differences, all support a view of vocabulary mastery being discourse-based. Thus, it seems only reasonable that practitioners should be using the tools available for exploring discourse features at a vocabulary level to inform test design. Undoubtedly, many of the words identified will be from the academic word list. However, with tests drawing vocabulary items from course inputs directly, the need for students to be taught how to engage with vocabulary at the text level would be underlined, an impetus to more appropriate engagement with vocabulary for both tutors and students.

This would not require the use of corpus technology in classrooms, by students, or even by the majority of teaching staff. A single staff member with moderate interest in corpus technology could conduct the analysis in a single afternoon, less with practice, and the results could be fed back into the test design process: a small outlay of resources that could have a significant effect through the test's backwash.

Conclusion

This paper has suggested that the current paradigm of vocabulary teaching in EAP, relying upon decontextualised or weakly-contextualised word lists but aiming to produce generalised yet proficient academic readers, is untenable in many EAP contexts. Furthermore, it has suggested that, with a movement in EAP towards increasing inclusion of authentic academic texts, the potential to exploit texts for vocabulary through ETA has become a realistic project, as it requires little in the way of expertise or institutional support. Assuming that changing testing methodology will influence syllabus design, classroom practice and student perceptions, it has been argued that basing vocabulary test items or marking criteria upon data derived from authentic course inputs would foster the type of engagement with vocabulary necessary for learners to adapt to the demands of the discourse communities they wish to enter: the ability to engage with vocabulary in context, cotext and use.

In sum, corpus-technology has put analysis of text within the grasp of all EAP practitioners. The question is how it can best be used to address learners' educational needs. If the target of testing students on their ability to adapt to the discourse demands of a genre can be accepted as a valid goal, that is to say, a view of vocabulary as a skill, then ETA of authentic academic course inputs is a potential way forward.

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