Manuscript Number: JEAP-D-17-00248R3

Title: Practical concordancing for upper-intermediate and advanced
academic writing: Ready-to-use teaching and learning materials

Article Type: Researching EAP Practice

Keywords: Teaching; academic writing; Lextutor; concordancer; corpora;
ready-to-use materials.

Corresponding Author: Dr. Tatyana Karpenko-Seccombe, PhD

Corresponding Author's Institution: University of Huddersfield

First Author: Tatyana Karpenko-Seccombe, PhD

Order of Authors: Tatyana Karpenko-Seccombe, PhD

Practical concordancing for upper-intermediate and advanced academic writing: ready-to-use teaching and learning materials

Tatyana Karpenko-Seccombe

*Senior Lecturer in English for Academic Purposes, University of Huddersfield
Research and Enterprise, Academic English Centre, Queensgate, Huddersfield, HD1 3DH*

t.karpenko-seccombe@hud.ac.uk

15 Garden Terrace
Hebden Bridge
West Yorks
HX78BL

1 Practical concordancing for upper-intermediate and advanced academic writing: Ready-to-use teaching and learning materials

2 1 Introduction

3 Concordancers are software programs allowing users to search large amounts of texts
4 (corpora) in order to examine the use of specific words or phrases in multiple contexts.
5 Concordancers have particular value in teaching. Tim Johns (1991), one of the first to
6 champion the use of concordancers in teaching, saw a language-learner working with corpora
7 as a researcher learning from linguistic data and termed this approach "data-driven learning"
8 (DDL) (p. 1).

9 By using concordancers students can be taught independent language analysis skills. They
10 can learn how to deal with simple language problems (e.g. use of prepositions, place of
11 linking words and punctuation used with them), or how to identify recurrent lexico-grammatical
12 patterns and clarify their usage. Exploring authentic examples of words in context can help
13 students understand collocations and idiomatic patterns and, ultimately, to write more
14 naturally. From academic corpora they can learn about discourse features of academic
15 writing: for example, hedging, signalling various parts of the research paper, evaluative
16 language used to express stance.

17
18 The aim of this paper is to present a set of teaching materials based on the use of corpora in
19 an attempt to help teachers use concordancers in everyday teaching thus addressing
20 one of the barriers in disseminating classroom concordance practice – the limited availability
21 of ready-to-use materials. The materials can be used both by teachers and learners of
22 academic English either as a complete course, part of a course, or as separate exercises. The
23 tasks have been developed for students of upper-intermediate and advanced levels taking
24 into account students' cognitive progression on the one hand, and gradually changing role of
25 teachers - from enabler to co-researcher - on the other.

26 The materials (presented in Appendix B) are designed to give teachers the tools for
27 introducing concordancers into the classroom without spending excessive amounts of time on
28 researching corpora and preparing the tasks. The tasks presented in this paper are based on
29 using online Lextutor Concordancer (<http://lextutor.ca/conc/eng/>) created by Tom Cobb. This
30 online concordancer is free, open and easy to use; it contains several corpora of academic
31 expert writing. It is a part of *The Compleat Lexical Tutor*, a multi-functional website containing
32 tools for language teaching, learning and analysis; it is a popular site attracting about 8,000
33 daily page views (<https://www.lextutor.ca/>). A detailed step-by-step guide to using Lextutor
34 Concordancer is presented in Appendix A. Both Appendix A and B are available as online
supplementary material.

35 All tasks are based on simple lexical searches, and encompass both lexical and grammatical
36 target features. The search words were chosen on the grounds of common occurrence
37 in academic discourse informed by academic word lists. Out of about 100 words used in the
38 tasks, over 40% appear on Academic Word List (Coxhead, n.d.) and 80% on Academic

Core List of 3000 top frequency words (Davies and Gardner, n.d.). The rest of the words appear on the New General Service List (Browne, Culligan & Phillips, n.d.) and constitute frequent general English words prominent in thesis writing, e.g. *study*, *result*, *finding*. Grammatical and lexico-grammatical tasks were developed based on the analysis of recurrent students' problems in writing identified in the course of my practical teaching of English for Academic Purposes. The task types and examples are discussed in sub-section 2.3; the complete set of tasks is available in Appendix B.

1.1 Existing resources

One of the first truly practical guides to teaching with concordancers was a book by Tribble and Jones (1997) covering several aspects from conducting searches to developing concordancer-based materials. Among other sources are works by Flowerdew (2001) offering general guidelines for using concordancers in teaching, Sinclair (2003) providing a comprehensive guide to searching corpora for linguistically meaningful information and a body of work containing examples of corpora-based activities (Gaskell & Cobb, 2004; Gabrielatos, 2005; Granath, 2009; Boulton, 2010; Roberts, 2012; Anderson & Corbett, 2017, Thomas, 2016). However, only few resources provide ready-made tasks for practitioners teaching academic writing; particularly notable are a workbook by Thurstun and Candlin (1997) *Exploring academic English*, a course developed by Charles for doctorate students (http://supervision.learning.ox.ac.uk/sites/default/files/Using_a_Corpus_for_Students.pdf), and a corpus-based EAP course described in Lee & Swales (2006).

1.2 Barriers to using concordancers in everyday teaching

Even though there is a considerable body of literature dedicated to the teaching potential of corpora, teaching with corpora still has not found its way into everyday language lessons. Thompson (2016) suggested that corpora in teaching is still at the “early adoption” stage; Römer (2011), similarly, noted that “...comparatively few teachers and learners ...get their hands on corpus computers or concordances themselves” (p. 206). One of the major barriers is succinctly identified by Breyer (2009) as the “limited availability of ready-to-use corpus teaching material” (p. 155), a view echoed by Boulton (2010) who indicates that there exists “very little in the way of ‘off-the-peg’ materials ... geared towards end-users, teachers and learners alike ...” (p.1290). Clearly, existing resources do not seem to satisfy the continuing “need for more teaching materials with concrete teaching suggestions” (Breyer, 2009, p.155). This paper is aimed at offering such practical help.

1.3 Why Lextutor?

Several characteristics of Lextutor make it a very appealing choice for teaching and learning purposes:

1. Lextutor is easy to use even for students who may be intimidated by unfamiliar software. In post-course feedback questionnaires students consistently comment on the ease of use of The Lextutor concordancer.

2. Lextutor is a free and open resource. It is available on- and off-campus, which is essential for developing students' independence. In a survey reported by Tribble (2015, p. 52), "user-friendliness of the package and the fact that it is free appear to be major factors influencing their [students'] willingness to work with a computer program".
3. Lextutor contains corpora of academic expert writing, a feature of great value to academic writers. Apart from the Academic General corpus (6 m words), British Academic Written English (BAWE, 8 million words) and Academic Abstracts (174,000 words), Lextutor contains specialised BNC corpora: Law, Medical, Commerce, Humanities and Social Sciences. This is a distinct advantage for classes of students working in different subject areas.

2. Concordancers in teaching academic writing

2.1 The context of the course

The set of tasks discussed here is based on the course *Improve your academic writing with Concordancers*, which is run within an in-session programme of academic support for international doctorate students at the University of Huddersfield. The course is run in small groups of up to 12 people and consists of 2 sessions, 90 minutes each. The course is not compulsory or credit-bearing. The aim of the first session is to introduce students to Lextutor tools and to practice simple searches. The second session is aimed at showing how concordancers can help with word choice, some grammatical problems, academic style and discourse features. The overall learning outcome of the sessions is to integrate concordancers into students' everyday academic writing practice.

Tasks in the course are based on direct corpus consultations which allow students to see the immediate benefits of using the software. This course deliberately does not introduce students to other concordancers with different interfaces and features in order to make it easily accessible for everybody.

In introducing the course into the academic support curriculum two research questions arose concerning students' engagement with concordancers:

- Will doctorate students find using concordancers helpful in their everyday writing?
- Will doctorate students carry on using concordancers independently?

To answer these questions, an anonymous survey was conducted among the students who attended the course in 2014-2016; the results are discussed in section 2.4 and in Conclusions.

2.2 Note on the tasks

Leech (1997, pp. 7-10), and later Boulton and Cobb (2017, p.385), reported the hands-on approach to be more effective than paper tasks. This, and the fact that using raw data can prepare students for independent work with concordancers, was the rationale for using the direct approach in the tasks discussed below. Direct DDL, however, can sometimes present practical difficulties, for instance, in conducting searches, reading and understanding the lines, identifying search items and recognising patterns. Therefore, careful scaffolding is needed in these areas. To

116 address potential difficulties, the initial tasks include comprehensive prompts for corpora
117 searches, which become less detailed as students progress through the course.

118 **2.3 Cognitive progression in teaching with corpora and concordancers**

119 The general guiding principle for presenting the tasks is the revised Bloom's taxonomy of the
120 cognitive processes involved in learning (Anderson, Krathwohl, & Bloom, 2001):
121 Remembering, Understanding, Applying, Analysing, Evaluating and Creating. This taxonomy
122 allows the tasks to be graded according to their complexity and in line with the growing
123 competence and independence of the learners. This taxonomy places special emphasis on
124 'Creating', which, in the context of working with concordancers, means that students use
125 corpus data to inform their own writing. Another important pedagogical consideration is the
changing role of the teacher from being the source of knowledge to acting as facilitator or enabler.
The role of the learner also changes from passive recipient to active and autonomous researcher.
The teacher becomes "a director and coordinator of student-initiated research" (Johns, 1991, p3).
126 Table 1 shows how the stages of cognitive progression correlate with concordance proficiency,
127 tasks and the teacher's changing role.

Table 1. Stages of cognitive progression in correlation with stages of learning concordancers

Cognitive progression	Concordancer use	Tasks	Teacher's role	Teaching approach
Knowledge/ Remembering	Controlled searches: looking for factual information	The use of prepositions, plural/ singular forms	Enabler: extensive scaffolding	Teacher- centred
Understanding	Guided searches: understanding the possibilities of concordancer searches	Implications of different word frequencies	Facilitator
Applying	Guided searches: applying knowledge, using concordance material to help with students' own writing	Paraphrasing using family searches	Facilitator	
Analysing	Supported searches: analysing corpus data, noting recurrent patterns, analysing patterns, coming to conclusions about usage	Analysis of lexico- grammatical patterns Correct use of collocations	Consultant	
Evaluating	Supported searches: evaluating corpus data from the point of view of its applicability for use in own writing	Evaluating which features of writing are appropriate for academic style	Consultant	
Creating	Completely independent searches to assist in writing as and when needed.	Using data from corpora to inform independent writing	Fellow- researcher and co- learner	

The following sections describe the types of tasks corresponding to each stage and give concrete examples. Even though the stages may overlap, they still reflect the process of gradual knowledge acquisition where growing proficiency leads to increased student independence. The complete set of tasks is available in Appendix B.

2.3.1 Remembering (Knowing): Corpora as a source of information

Remembering (which replaced *Knowing* in original Bloom's classification, Anderson et al., 2001) is the first,

lower-order dimension of the cognitive process defined as "retrieving relevant knowledge from long-term memory" (p. 32). At this stage students familiarise themselves with the concordancer tools: knowing and remembering the fundamentals. The initial tasks are based on extracting useful factual information, for example, examining the use of prepositions. Thus, *Knowing* works on two levels - students gain knowledge about the software tools and use them in simple searches thus acquiring linguistic knowledge.

These tasks allow students to gain confidence in doing searches and in practising concordancer routines such as *sorting to the right/ left*, *equals*, *begins* and *ends* searches.

Consider, for example, Task 1 (Appendix B):

Try a simple search: search for the keyword **research** and use *sort by 1 word to the right and to the left* option.

What prepositions are most common? What is the difference between these prepositions? Try a *sort on the left* search. What adjectives have you noticed? Which ones are you likely to use in your writing? Use three of them in writing sentences related to your own research.

It is important to advise students to explore the lines further than the one preposition they are looking for. For example, in Task 1 students are asked to do a *sort on the left* search which allows them to explore adjectives used with **research**. Thus, students are introduced to the specific nature of reading concordance lines which involves:

- looking on both sides of the keyword
- looking further than one word
- looking for more than one thing
- looking for the recurrent patterns of keyword usage.

Even at this early stage students obtain valuable information about language use, for example, Is **data** singular or plural? What punctuation is used with linking words? What prepositions are used after *different* and after *difference*? (see Tasks 1- 8, Appendix B).

2.3.2 Understanding and Applying knowledge

The next two stages in the cognitive progression are *understanding* and *applying* knowledge. The natural link between them is emphasised by Anderson et al.: "students must not only apply a procedure ... but also rely on conceptual understanding of the problem and procedure" (2001, p.79). Thus, the next set of tasks is aimed both at fostering students' understanding of certain language phenomena and applying this understanding in writing. For instance, understanding the implications of different frequencies of words can lead to better word choices; Task 10 provides an example of such frequency search:

Can the word **literature** be used in the plural? Check several corpora. If there are

instances of plural, are there any differences in meaning?

Students sometimes use **literature** in the plural as a synonym of **studies**. By comparing the frequency results of **literature** (206 per million in the Academic General corpus) and **literatures** (2 per million), they can see that the plural form **literatures** is very rare. By looking closer into the concordance lines they are encouraged to look into modifiers used with plural forms: **anglophone, foreign, national**, which help to conclude that the plural form commonly refers to literature as a whole and cannot be used as an equivalent for **studies**.

2.3.3 Analysing

In the revised Bloom's taxonomy special emphasis is placed on analysis or the way "the parts relate to one another and to an overall structure or purpose" (Anderson et al. 2001, p. 31) which is reflected in the next group of tasks where students analyse concordance lines to identify recurrent collocations and grammatical patterns. Tasks 14 -17 are designed to draw students' attention to the fact that different verbs can occur in different grammatical patterns. Task 17, for example, is aimed at analysing usage of the verb **discuss**:

Consider the usage of the verb **discuss** in the following sentences and identify correct sentences. What grammatical patterns are used with the verb **discuss** and with the noun **discussion**? Can you formulate a rule?

1. The team of researchers **discussed that** this method is important.
2. The team of researchers **discussed the** importance of this method.
3. The team of researchers **discussed about introducing** this method.
4. The team of researchers **had a long discussion about** introducing this method.

After having identified the recurrent patterns of usage: **discuss + noun/ gerund** and **discuss + when, what** and **how clause** students attempt to use them in their own writing.

In Task 19 students analyse usage of the word **hypothesis**:

Find out how the word **hypothesis** is used in academic writing. Check for verb and adjective collocations and grammatical patterns.

Students are prompted to look for verb collocations:

- **hypothesis** as a subject with active and passive verbs (**hypothesis attempts, assumes, hypothesis is presented, tested, evolved, buttressed**);
- **hypothesis** as an object (**X adopts, supports, presents, confirms, reinterprets the hypothesis**);

prepositional patterns: **hypothesis about, for, of**

noun phrases: **deviation from the hypothesis, adoption of a hypothesis**;

adjective collocations: **reasonable, working, promising, topical hypothesis**;

After having discussed the results of the searches, students use their findings in writing a paragraph about their research hypotheses.

Word collocation is one of the most persistent problems in international students' writing, which is why tasks 18-27 are centred around analysis of collocations. Some of these tasks are based on error correction which demonstrates the benefits of concordancing for correct word choice. Initially, the tasks contain suggestions as to the keyword for the search. As

students gain more confidence these suggestions can be dropped.

Tasks 30 and 31 draw students' attention to the use of tenses and can be used as a starting point for discussion of the use of tenses in academic writing.

2.3.4 Evaluating

Evaluation is seen by Anderson et al. (2001) as "making judgments based on criteria and standards" (p. 31). Tasks at this stage include making judgments based on corpus data about different features of academic discourse and style: formal language (tasks 28, 29), "frame markers" (Hyland, Jiang, 2018) referring to text structure (tasks 30, 31, 33, 34, 35), hedging devices (33, 34, 35), evaluative language (32, 33, 35, 36).

For example, task 33 encourages students to reflect on the way writers express varying degree of certainty in writing about the results:

Task 33 Research collocations of the words **results** and **findings**. Search to the left of the *keyword* for adjectives used with the words **results** and **findings**. Evaluate adjectives used with **results** – are they positive, neutral or negative?

Run a search *to the right of the keyword* on **these results** and **these findings** and look for the verbs used after these phrases.

How different they are? What effect do they have?

Tasks 34-35 encourage students to evaluate the different strengths of hedging devices used with the verb conclude. The aim of the task is to raise awareness of using hedges appropriate to the strength of the claim being made.

Task 34 Explore hedging devices used with the verb **conclude**. Why do you think they differ? Why do different authors use different hedges in writing about their conclusions? Write down these hedges and rank them according to their degree of certainty. Which ones do you think will be most appropriate for your own conclusions?

Task 35 Run a search on **to conclude**, sort to the left and explore phrases that can be used with **to conclude**. What phrases can you find? What adjectives are used in the pattern **it is ... to conclude**? Record these adjectives and rank them according to their strength.

Tasks 30 and 31 draw students' attention to the use of tenses and can be used as a starting point for discussion of the use of tenses in academic writing.

Thus, Tasks 28-37 are based on evaluating features of academic discourse. They encourage students to reflect on how they can use these features in their own writing.

2.3.5 Creating

"Create" within the revised Bloom's taxonomy is defined as "Putting elements together to form a coherent or functional whole" (Anderson et al., 2001, p. 85). According to the authors, a task in this category "is likely to require aspects of each of the earlier cognitive process categories" (ibid). This definition fits well the final objectives of teaching students to use corpora in the process of producing their own texts. It is not always easy to draw a hard line between "creating" and the other stages - the elements of "creating" are present in tasks where searches are followed up by writing. Indeed, Anderson et al. (2001) see "Analysis as an extension of Understanding or as a prelude to Evaluating or Creating" (p. 79).

This final stage means that students use concordancers independently, outside the classroom; they engage in so-called “serendipity learning”: a “free-ranging and open-ended type of investigation” (Johns, 1988 p. 21) using concordancers to inform the creation of their own texts. This stage marks the highest level of student autonomy.

2.4 Feedback from students: survey results

Outcomes were evaluated using anonymous surveys, a type chosen as most appropriate for a non-credit-bearing, non-compulsory course. Doctorate students who attended the course between 2014 and 2016 were asked to fill in an online survey which was completed by 30 out of 84 students (approx. 35%). In reply to the question about how easy it was to understand the course, 26 students (86.6%) found the course *easy to follow* and only 2 (6.6 %) *not very easy to follow* and 1 (3.3%) *difficult to follow*.

Students generally appreciated the practicality of concordancer: in reply to the question *Do you think concordancers are useful for academic writing?* Twenty-five students (83%) found it *very useful* and 5 (17%) *slightly useful*; 28 students (93%) started using concordancers straight after the course. Twenty-four students who tried to use concordancer after the course found it *very useful* (80%) and 4 students or 13%, *slightly useful*. Interestingly, 100% of respondents (all 30) declared their determination to use the software in future. In their comments, students reinforced their positive evaluation of using concordancers. Here are some examples of students’ replies to the question *Are you likely to use it in the future?*

- *It can correct my grammar mistakes and teach me how to use the phrase correctly.*
- *I will try to use it in my future academic writing and also teach my students to learn to use it.*
- *...it will help me during my entire career especially when writing different professional articles.*
- *It can be used for my dissertation.*
- *I can easily choose suitable words and prepositions in academic writing.*
- *As a non-native English user, we sometimes may use informal words in our writing, so it is great tool to tell if the word is used and in any context.*

These are reported rather than measured results but the nature of the classes – short, non-assessed, not compulsory and non-credit-bearing – should be taken into consideration. The aim of the course is to give students tools for further independent learning, and in this context, anonymous self-reporting helps in understanding whether students are becoming independent users of corpora.

3. Conclusions

The results of the questionnaire clearly show that in answer to the research questions, a significant percentage of students (83%) found working with the Lextutor concordancer very useful and went on using the software independently after the course.

Enquiry-based, active learning with concordancers is particularly suitable for teaching international PhD students because they already have certain research skills and the habit of working autonomously. However, there are several transferable benefits for other categories of students:

- learning from expert writing
- using authentic and natural collocations
- developing independence and confidence in academic writing

These benefits, together with the evident scarcity of ready-to-use teaching materials and the rather slow uptake of corpora teaching by EAP tutors, may make the practical tasks offered in this paper useful for those in the teaching community who are interested in introducing corpora into their classrooms.

References

- Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of bloom's taxonomy of educational objectives* (Complete ed.). London, New York: Longman.
- Anderson, W., & Corbett, J. (2017). *Exploring English with online corpora*. Macmillan International Higher Education.
- Boulton, A. (2010) Learning outcomes from corpus consultation. In M. Moreno Jaén, F. Serrano Valverde & M. Calzada Pérez (Eds.), *Exploring New Paths in Language Pedagogy: Lexis and Corpus-Based Language Teaching* (pp. 129-144). London: Equinox.
- Boulton, A., & Cobb, T. (2017). Corpus Use in Language Learning: A Meta-Analysis. *Language Learning*, 67(2), 348-393.
- Browne, C., Culligan, B., and Phillips, J.(n.d.) New General Service List. <http://www.newgeneralservicelist.org/>
- Cobb, T. Online Concordancer <http://lxtutor.ca/conc/eng/> (English & French) Université du Québec à Montréal.
- Coxhead, A. (n.d.). The academic word list <https://www.victoria.ac.nz/lals/resources/academicwordlist>
- Davies, M. and Gardner, D. (n.d.) The Academic Vocabulary List (AVL) www.academicwords.info
- Flowerdew, J. (2001). Concordancing as a tool in course design. In M. Ghadessy, A. Henry, & R. Roseberry (Eds.), *Small corpus studies and ELT: Theory and practice* (pp. 71-92). Amsterdam, Philadelphia: John Benjamins.
- Gabrielatos, C. (2005). Corpora and Language Teaching: Just a Fling or Wedding Bells? *TESL-EJ*, 8(4) Retrieved from <https://files.eric.ed.gov/fulltext/EJ1068106>
- Gaskell, D., & Cobb, T. (2004). Can learners use concordance feedback for writing errors?. *System*, 32(3), 301-319.
- Granath, S. (2009). Who benefits from learning how to use corpora? In K. Aijmer (Ed.), *Corpora and language teaching*, (pp. 47-65). Amsterdam, Philadelphia: John Benjamins.
- Hyland, K., & Jiang, F.(2018) "In this paper we suggest": Changing patterns of disciplinary metadiscourse, *English for Specific Purposes*, 51 (7), 18-30.
- Johns, T. (1988). Whence and whither classroom concordancing? In T. Bongaerts, P. de Haan, S. Lobbe, & H. Wekkeret (Eds.), *Computer applications in language learning* (pp. 9-

27). Dordrecht: Foris.

Johns, T. (1991) Should you be persuaded: Two samples of data-driven learning materials
Retrieved from
http://www.wordsmithtools.com/wordsmith/corpus_linguistics_links/Tim%20Johns%20and%20DDL.pdf

Leech, G. (1997) Teaching and language corpora: a convergence. In A. Wichmann, S. Fligelstone, T. McEnery & G. Knowles (Eds.), *Teaching and Language Corpora* (pp. 1-23). London: Longman.

Roberts, R. (2012) *Some user-friendly concordance ideas*. Retrieved from <https://elt-resourceful.com/tag/corpora/>

Römer, U. (2011). Corpus Research Applications in Second Language Teaching. *Annual Review of Applied Linguistics*, 31, 205-225. doi:10.1017/S0267190511000055.

Sinclair, J. (2003). *Reading concordances: An introduction*. London, New York: Pearson Longman.

Thomas, J. (2016). *Discovering English with Sketch Engine*. Lulu.com.

Thompson, P. (2016, December) EAP & CL: How has pedagogy changed? Presentation at *Quantitative language research: Exploring the potential of Corpus Linguistics in Education*, University of Stirling.

Thurstun, J. & Candlin C. N. (1997). *Exploring academic English: A workbook for student essay writing*. Sydney: National Centre for English Language Teaching and Research.

Tribble, C. (2015). Teaching and language corpora. In A. Lenko-Szymanska & A. Boulton (Eds.), *Multiple affordances of language corpora for data-driven learning* (pp.37-62). Amsterdam, Philadelphia: John Benjamins.

1 Practical concordancing for upper-intermediate and advanced academic writing: ready-to-use teaching and learning materials

2 1 Introduction

3 Concordancers are software programs allowing users to search large amounts of texts
4 (corpora) in order to examine the use of specific words or phrases in multiple contexts.
5 Concordancers have particular value in teaching. Tim Johns (1991), one of the first to
6 champion the use of concordancers in teaching, saw a language-learner working with corpora
7 as a researcher learning from linguistic data and termed this approach "data-driven learning"
8 (DDL) (p. 1).

9 By using concordancers students can be taught independent language analysis skills. They
10 can learn how to deal with simple language problems (e.g. use of prepositions, place of
11 linking words and punctuation used with them), or how to identify recurrent lexico-grammatical
12 patterns and clarify their usage. Exploring authentic examples of words in context can help
13 students understand collocations and idiomatic patterns and, ultimately, to write more
14 naturally. From academic corpora they can learn about discourse features of academic
15 writing: for example, hedging, signalling various parts of research paper; evaluative
16 language used to express stance.

17 The aim of this paper is to present a set of teaching materials based on the use of corpora in
18 an attempt to help teachers use concordancers in everyday teaching thus addressing
19 one of the barriers in disseminating classroom concordance practice – the limited availability
20 of ready-to-use materials. The materials can be used both by teachers and learners of
21 academic English either as a complete course, part of a course, or as separate exercises. The
22 tasks have been developed for students of upper-intermediate and advanced level taking into
23 account students' cognitive progression on the one hand, and gradually changing role of
24 teachers - from enabler to co-researcher - on the other.

25 The materials (presented in Appendix B) are designed to give teachers the tools for
26 introducing concordancers into the classroom without spending excessive amount of time on
27 researching corpora and preparing the tasks. The tasks presented in this paper are based on
28 using online Lextutor Concordancer (<http://lextutor.ca/conc/eng/>) created by Tom Cobb. This
29 online concordancer is free, open and easy to use; it contains several corpora of academic
30 expert writing. It is a part of *The Compleat Lexical Tutor*, a multi-functional website containing
31 tools for language teaching, learning and analysis; it is a popular site attracting about 8,000
32 daily page views (<https://www.lextutor.ca/>). A detailed step-by-step guide to using Lextutor
33 Concordancer is presented in Appendix A.

34 All tasks are based on simple lexical searches, and encompass both lexical and grammatical
35 target features. The search words were chosen on the grounds of common occurrence
36 in academic discourse informed by academic word lists. Out of about 100 words used in the
37 tasks, over 40% appear on Academic Word List (Coxhead, n.d.) and 80% on Academic

Core List of 3000 top frequency words (Davies and Gardner, n.d.). The rest of the words appear on the New General Service List (Browne, Culligan & Phillips, n.d.) and constitute frequent general English words prominent in thesis writing, e.g. *study, result, finding*. Grammatical and lexico-grammatical tasks were developed based on the analysis of recurrent students' problems in writing identified in the course of my practical teaching of English for Academic Purposes. The task types and examples are discussed in sub-section 2.3; the complete set of tasks is available in Appendix B.

1.1 Existing resources

One of the first truly practical guides to teaching with concordancers was a book by Tribble and Jones (1997) covering several aspects from conducting searches to developing concordancer-based materials. Among other sources are works by Flowerdew (2001) offering general guidelines for using concordancers in teaching, Sinclair (2003) providing a comprehensive guide to searching corpora for linguistically meaningful information and a body of work containing examples of corpora-based activities (Gaskell & Cobb, 2004; Gabrielatos, 2005; Granath, 2009; Boulton, 2010; Roberts, 2012; Anderson & Corbett, 2017, Thomas, 2016). However, only few resources provide ready-made tasks for practitioners teaching academic writing; particularly notable are a workbook by Thurstun and Candlin (1997) *Exploring academic English*, a course developed by Charles for doctorate students (http://supervision.learning.ox.ac.uk/sites/default/files/Using_a_Corpus_for_Students.pdf), and a corpus-based EAP course described in Lee & Swales (2006).

1.2 Barriers to using concordancers in everyday teaching

Even though there is a considerable body of literature dedicated to the teaching potential of corpora, these methods still have not found their way into everyday language lessons. Thompson (2016) suggested that corpora in teaching is still at the "early adoption" stage; Römer (2011), similarly, noted that "...comparatively few teachers and learners ...get their hands on corpus computers or concordances themselves" (p. 206).

One of the major barriers is succinctly identified by Breyer (2009) as the "limited availability of ready-to-use corpus teaching material" (p. 155), a view echoed by Boulton (2010) who indicates that there exists "very little in the way of 'off-the-peg' materials ... geared towards end-users, teachers and learners alike ..." (p.1290). Clearly, existing resources do not seem to satisfy the continuing "need for more teaching materials with concrete teaching suggestions" (Breyer, 2009, p.155). This paper is aimed at offering such practical help.

1.3 Why Lextutor?

Several characteristics of Lextutor make it a very appealing choice for teaching and learning purposes:

1. Lextutor is easy to use even for students who may be intimidated by unfamiliar software.

In post-course feedback questionnaires students consistently comment on the ease of use of Lextutor concordancer.

2. Lextutor is a free and open resource. It is available on- and off-campus which is essential for developing students' independence. In a survey reported by Tribble (2015, p. 52), "user-friendliness of the package and the fact that it is free appear to be major factors influencing their [students'] willingness to work with a computer program".

3. Lextutor contains corpora of academic expert writing, a feature of great value to academic writers. Apart from the Academic General corpus (6 m words), British Academic Written English (BAWE, 8 m) and Academic Abstracts (174,000), Lextutor contains specialised BNC corpora: Law, Medical, Commerce, Humanities and Social Sciences. This is a distinct advantage for classes of students working in different subject areas.

2. Concordancers in teaching academic writing

2.1 The context of the course

The set of tasks discussed here is based on the course *Improve your academic writing with concordancers* which is run within an in-session programme of academic support for international doctorate students at the University of XXXXXXXXX. The course is run in small groups of up to 12 people and consists of 2 sessions, 90 minutes each. The course is not compulsory or credit-bearing. The aim of the first session is to introduce students to Lextutor tools and to practice simple searches. The second session is aimed at showing how concordancers can help with word choice, some grammatical problems, academic style and discourse features. The overall learning outcome of the sessions is to integrate concordancers into students' everyday academic writing practice.

Tasks in the course are based on direct corpus consultations which allow students to see the immediate benefits of using the software. This course deliberately does not introduce students to other concordancers with different interfaces and features in order to make it easily accessible for everybody.

In introducing the course into the academic support curriculum two research questions arose concerning students' engagement with concordancers:

- Will doctorate students find using concordancers helpful in their everyday writing?
- Will doctorate students carry on using concordancers independently?

To answer these questions, an anonymous survey was conducted among the students who attended the course in 2014-2016; the results are discussed in section 2.4 and in Conclusions.

2.2 Note on the tasks

Leech (1997, pp. 7-10), and later Boulton and Cobb (2017, p.385), reported the hands-on approach to be more effective than paper tasks. This, and the fact that using raw data can prepare students for independent work with concordancers, was the rationale for using the direct approach in the tasks discussed below. Direct DDL, however, can sometimes present practical difficulties, for instance, in conducting searches, reading and understanding the lines, identifying search

items and recognising patterns. Therefore, careful scaffolding is needed in these areas. To address potential difficulties, the initial tasks include comprehensive prompts for corpora searches, which become less detailed as students progress through the course.

2.3 Cognitive progression in teaching with corpora and concordancers

The general guiding principle for presenting the tasks is the revised Bloom's taxonomy of the cognitive processes involved in learning (Anderson, Krathwohl, & Bloom, 2001):

Remembering, Understanding, Applying, Analysing, Evaluating and Creating. This taxonomy allows the tasks to be graded according to their complexity and in line with the growing competence and independence of the learners. This taxonomy places special emphasis on 'Creating', which, in the context of working with concordancers, means that students use corpus data to inform their own writing.

Another important pedagogical consideration is the changing role of the teacher from being the source of knowledge to acting as facilitator or enabler. The role of the learner also changes from passive recipient to active and autonomous researcher. The teacher becomes "a director and coordinator of student-initiated research" (Johns, 1991, p 3).

Table 1 shows how the stages of cognitive progression correlate with concordance proficiency, tasks and the teacher's changing role.

Table 1. Stages of cognitive progression in correlation with stages of learning concordancers

The following sections describe the types of tasks corresponding to each stage and give concrete examples. Even though the stages may overlap, they still reflect the process of gradual knowledge acquisition where growing proficiency leads to increased student independence. The complete set of tasks is available in Appendix B.

2.3.1 Remembering (Knowing): Corpora as a source of information

Remembering (which replaced original Bloom's *Knowing*, Anderson et al., 2001), is the first, lower-order, dimension of the cognitive process defined as "retrieving relevant knowledge from long-term memory" (p. 32). At this stage students familiarise themselves with the concordancer tools: knowing and remembering the fundamentals. The initial tasks are based on extracting useful factual information, for example, examining the use of prepositions. Thus, *Knowing* works on two levels - students gain knowledge about the software tools and use them in simple searches based on acquiring linguistic knowledge rather than analysis. These tasks allow students to gain confidence in doing searches and in practising concordancer routines such as *sorting to the right/ left, equals, begins* and *ends* searches. Consider, for example, Task 1 (Appendix B):

Try a simple search: search for the keyword **research** and use *sort by 1 word to the right and to the left* option.

What prepositions are most common? What is the difference between these prepositions? Try a *sort on the left* search. What adjectives have you noticed? Which ones are you likely to use in your writing? Use three of them in writing sentences related to your own research.

It is important to advise students to explore the lines further than the one preposition they are looking for. For example, in Task 1 students are asked to do a *sort on the left* search which allows them to explore adjectives used with **research**. Thus, students are introduced to the specific nature of reading concordance lines which involves:

- looking on both sides of the keyword
- looking further than one word
- looking for more than one thing
- looking for the recurrent patterns of keyword usage.

Even this early stage students valuable information about language use, for example, Is **data** singular or plural? What punctuation is used with linking words? What prepositions are used after *different* and after *difference*? (see Tasks 1- 8, Appendix B).

2.3.2 Understanding and Applying knowledge

The next two stages in the cognitive progression are *understanding* and *applying* knowledge. The natural link between them is emphasised by Anderson et al.: "students must not only apply a procedure ... but also rely on conceptual understanding of the problem and procedure" (2001, p.79). Thus, the next set of tasks is aimed both at fostering students' understanding of certain language phenomena and applying this understanding in writing. For instance, understanding the implications of different frequencies of words can lead to better word choices; Task 10 provides an example of such frequency search:

Can the word **literature** be used in the plural? Check several corpora. If there are instances of plural, are there any differences in meaning?

Students sometimes use **literature** in the plural as a synonym of **studies**. By comparing the frequency results of **literature** (206 per million in the Academic General corpus) and **literatures** (2 per million), they can see that the plural form **literatures** is very rare. By looking closer into the concordance lines they are encouraged to look into modifiers used with plural forms: **anglophone, foreign, national**, which help to conclude that the plural form commonly refers to literature as a whole and cannot be used as an equivalent for **studies**.

2.3.3 Analysing

In the revised Bloom's taxonomy special emphasis is placed on analysis or the way "the parts relate to one another and to an overall structure or purpose" (Anderson et al. 2001, p. 31) which is reflected in the next group of tasks where students analyse concordance lines to identify recurrent collocations and grammatical patterns. Tasks 14 -17 are designed to draw students' attention to the fact that different verbs can occur in different grammatical patterns. Task 17, for example, is aimed at analysing usage of the verb **discuss**:

Consider the usage of the verb **discuss** in the following sentences and identify correct sentences. What grammatical patterns are used with the verb **discuss** and with the noun **discussion**? Can you formulate a rule?

1. The team of researchers **discussed that** this method is important.
2. The team of researchers **discussed the** importance of this method.
3. The team of researchers **discussed about introducing** this method.
4. The team of researchers **had a long discussion about** introducing this method.

After having identified the recurrent patterns of usage: **discuss + noun/ gerund** and **discuss + when, what** and **how clause** students attempt to use them in their own writing.

In Task 19 students analyse usage of the word **hypothesis**:

Find out how the word **hypothesis** is used in academic writing. Check for verb and adjective collocations and grammatical patterns.

Students are prompted to look for verb collocations:

- **hypothesis** as a subject with active and passive verbs (**hypothesis attempts, assumes, hypothesis is presented, tested, evolved, buttressed**);
- **hypothesis** as an object (**X adopts, supports, presents, confirms, reinterprets the hypothesis**);

prepositional patterns: **hypothesis about, for, of**

noun phrases: **deviation from the hypothesis, adoption of a hypothesis**;

adjective collocations: **reasonable, working, promising, topical hypothesis**;

After having discussed the results of the searches, students use their findings in writing a paragraph about their research hypotheses.

Word collocation is one of the most persistent problems in international students' writing, which is why tasks 18-27 are centred around analysis of collocations. Some of these tasks are based on error correction which demonstrates the benefits of concordancing for correct word choice. Initially, the tasks contain suggestions as to the keyword for the search. As students gain more confidence these suggestions can be dropped.

Tasks 30 and 31 draw students' attention to the use of tenses and can be used as a starting point for discussion of the use of tenses in academic writing.

2.3.4 Evaluating

Evaluation is seen by Anderson et al. (2001) as "making judgments based on criteria and standards" (p. 31). Tasks at this stage include making judgments based on corpus data about different features of academic discourse and style: formal language (tasks 28, 29), "frame markers" (Hyland, Jiang, 2018) referring to text structure (tasks 30, 31, 33, 34, 35), hedging devices (33, 34, 35) stance, e.g. evaluative language (32, 33, 35, 36)

For example, task 33 encourages students to reflect on the way writers express varying degree of certainty in writing about the results:

Task 33 Research collocations of the words **results** and **findings**. Search to the left of the *keyword* for adjectives used with the words **results** and **findings**. Evaluate adjectives used with **results** – are they positive, neutral or negative?

Run a search *to the right of the keyword* on **these results** and **these findings** and look for the verbs used after these phrases.

How different they are? What effect do they have?

Tasks 34-35 encourage students to evaluate the different strengths of hedging devices used with the verb conclude. The aim of the task is to raise awareness of using hedges appropriate to the strength of the claim being made.

Task 34 Explore hedging devices used with the verb **conclude**. Why do you think they differ? Why do different authors use different hedges in writing about their conclusions? Write down these hedges and rank them according to their degree of certainty. Which ones do you think will be most appropriate for your own conclusions?

Task 35 Run a search on **to conclude**, sort to the left and explore phrases that can be used with **to conclude**. What phrases can you find? What adjectives are used in the pattern **it is ... to conclude**? Record these adjectives and rank them according to their strength.

Tasks 30 and 31 draw students' attention to the use of tenses and can be used as a starting point for discussion of the use of tenses in academic writing.

Thus, Tasks 28-37 are based on evaluating features of academic discourse. They encourage students to reflect on how they can use these features in their own writing.

2.3.5 Creating

"Create" within the revised Bloom's taxonomy is defined as "Putting elements together to form a coherent or functional whole" (Anderson et al., 2001, p. 85). According to the authors, a task in this category "is likely to require aspects of each of the earlier cognitive process categories" (ibid).

This definition fits well the final objectives of teaching students to use corpora in the process of producing their own texts. It is not always easy to draw a hard line between "creating" and the other stages - the elements of "creating" are present in tasks where searches are followed up by writing. Indeed, Anderson et al. (2001) see "Analysis as an extension of Understanding or as a prelude to Evaluating or Creating" (p. 79).

261 This final stage means that students use concordancers independently, outside the
 262 classroom; they engage in so-called “serendipity learning”: a “free-ranging and open-ended
 263 type of investigation” (Johns, 1988 p. 21) using concordancers to inform the creation of their
 264 own texts. This stage marks the highest level of student autonomy.

265 2.4 Feedback from students: survey results

266 Outcomes were evaluated using anonymous surveys, a type chosen as most appropriate for
 267 a non-credit-bearing, non-compulsory course.

268 Doctorate students who attended the course between 2014 and 2016 were asked to fill
 269 in an online survey which was completed by 30 out of 84 students (approx. 35%). In reply to
 270 the question about how easy it was to understand the course, 26 students (86.6%) found the
 271 course *easy to follow* and only 2 (6.6 %) *not very easy to follow* and 1 (3.3%) *difficult to*
 272 *follow*.

273 Students generally appreciated the practicality of concordancer: in reply to the question *Do*
 274 *you think concordancers are useful for academic writing?* Twenty-five students (83%) found it
 275 *very useful* and 5 (17%) *slightly useful*; 28 students (93%) started using concordancers
 276 straight after the course. Twenty-four students who tried to use concordancer after the course
 277 found it *very useful* (80%) and 4 students or 13%, *slightly useful*. Interestingly, 100% of
 278 respondents (all 30) declared their determination to use the software in future.
 279 In their comments, students reinforced their positive evaluation of using concordancers.
 280 Here are some examples of students' replies to the question *Are you likely to use it in the*
 281 *future?*

- 282 • *It can correct my grammar mistakes and teach me how to use the phrase correctly.*
- 283 • *I will try to use it in my future academic writing and also teach my students to learn*
 284 *to use it.*
- 285 • *...it will help me during my entire career especially when writing different professional*
 286 *articles.*
- 287 • *It can be used for my dissertation.*
- 288 • *I can easily choose suitable words and prepositions in academic writing.*
- 289 • *As a non-native English user, we sometimes may use informal words in our writing,*
 290 *so it is great tool to tell if the word is used and in any context.*

291 These are reported rather than measured results but the nature of the classes – short, non-
 292 assessed, not compulsory and non-credit-bearing – should be taken into consideration. The
 293 aim of the course is to give students tools for further independent learning, and in this
 294 context, anonymous self-reporting helps in understanding whether students are becoming
 295 independent users of corpora.

296 3. Conclusions

297 The results of the questionnaire clearly show that in answer to the research questions, a
 298 significant percentage of students (83%) found working with concordancer very useful and

went on using the software independently after the course.

Enquiry-based, active learning with concordancers is particularly suitable for teaching international PhD students because they already have certain research skills and the habit of working autonomously. However, there are several transferable benefits for other categories of students:

- learning from expert writing
- using authentic and natural collocations
- developing independence and confidence in academic writing

These benefits, together with the evident scarcity of ready-to-use teaching materials and the rather slow uptake of corpora teaching by EAP tutors, may make the practical tasks offered in this paper useful for those in the teaching community who are interested in introducing corpora into their classrooms.

References

Anderson, L. W., Krathwohl, D. R., & Bloom, B. S. (2001). *A taxonomy for learning, teaching, and assessing: A revision of bloom's taxonomy of educational objectives* (Complete ed.). London, New York: Longman.

Anderson, W., & Corbett, J. (2017). *Exploring English with online corpora*. Macmillan International Higher Education.

Boulton, A. (2010) Learning outcomes from corpus consultation. In M. Moreno Jaén, F. Serrano Valverde & M. Calzada Pérez (Eds.), *Exploring New Paths in Language Pedagogy: Lexis and Corpus-Based Language Teaching* (pp. 129-144). London: Equinox.

Boulton, A., & Cobb, T. (2017). Corpus Use in Language Learning: A Meta-Analysis. *Language Learning*, 67(2), 348-393.

Flowerdew, J. (2001). Concordancing as a tool in course design. In M. Ghadessy, A. Henry, & R. Roseberry (Eds.), *Small corpus studies and ELT: Theory and practice* (pp. 71-92). Amsterdam, Philadelphia: John Benjamins.

Gabrielatos, C. (2005). Corpora and Language Teaching: Just a Fling or Wedding Bells? *TESL-EJ*, 8(4) Retrieved from <https://files.eric.ed.gov/fulltext/EJ1068106>

Gaskell, D., & Cobb, T. (2004). Can learners use concordance feedback for writing errors?. *System*, 32(3), 301-319.

Granath, S. (2009). Who benefits from learning how to use corpora? In K. Aijmer (Ed.), *Corpora and language teaching*, (pp. 47-65). Amsterdam, Philadelphia: John Benjamins.

Hyland, K., & Jiang, F. (2018) "In this paper we suggest": Changing patterns of disciplinary metadiscourse, *English for Specific Purposes*, 51 (7), 18-30.

Johns, T. (1988). Whence and whither classroom concordancing? In T. Bongaerts, P. de Haan, S. Lobbe, & H. Wekkeret (Eds.), *Computer applications in language learning* (pp. 9-27). Dordrecht: Foris.

Johns, T. (1991) Should you be persuaded: Two samples of data-driven learning materials Retrieved from http://www.wordsmithtools.com/wordsmith/corpus_linguistics_links/Tim%20Johns%20and%20DDL.pdf

Leech, G. (1997) Teaching and language corpora: a convergence. In A. Wichmann,

- 345 S.Fligelstone, T. McEnery & G. Knowles (Eds.), *Teaching and Language Corpora* (pp. 1-
346 23). London: Longman.
- 347 Roberts, R. (2012) *Some user-friendly concordance ideas*. Retrieved from [https://elt-](https://elt-resourceful.com/tag/corpora/)
348 [resourceful.com/tag/corpora/](https://elt-resourceful.com/tag/corpora/)
- 349 Römer, U. (2011). Corpus Research Applications in Second Language Teaching. *Annual*
353 *Review of Applied Linguistics*, 31, 205-225. doi:10.1017/S0267190511000055.
- 354 Sinclair, J. (2003). *Reading concordances: An introduction*. London, New York: Pearson
355 Longman.
- 356 Thomas, J. (2016). *Discovering English with Sketch Engine*. Lulu.com.
- 357 Thompson, P. (2016, December) EAP & CL: How has pedagogy changed? Presentation at
358 *Quantitative language research: Exploring the potential of Corpus Linguistics in Education*,
359 University of Stirling.
- 360 Thurstun, J. & Candlin C. N. (1997). *Exploring academic English: A workbook for student*
361 *essay writing*. Sydney: National Centre for English Language Teaching and Research.
- 362 Tribble, C. (2015). Teaching and language corpora. In A. Lenko-Szymanska & A. Boulton
363 (Eds.), *Multiple affordances of language corpora for data-driven learning* (pp.37-62).
364 Amsterdam, Philadelphia: John Benjamins.

366 **On-line resources:**

- 367 Cobb, T. Online Concordancer <http://lextutor.ca/conc/eng/> (English & French) Université du
368 Québec à Montréal.
- 369 Coxhead, A. (n.d.). The academic word list
<https://www.victoria.ac.nz/lals/resources/academicwordlist>
- 370 Davies, M. and Gardner, D. (n.d.) The [Academic Vocabulary List](http://www.academicwords.info) (AVL)
371 www.academicwords.info
- 372 Browne, C., Culligan, B., and Phillips, J.(n.d.) New General Service List.
373 <http://www.newgeneralservicelist.org/>

Acknowledgements

I am very grateful to Tom Cobb and Alex Boulton for their valuable comments and suggestions and encouragement at the earlier stages of writing this paper. I am
I would like to thank the anonymous reviewers for their insightful comments and suggestions. I would also like to thank Maggie Charles for her advice, support and sharing her course materials with me.

Table 1. Stages of cognitive progression in correlation with stages of learning concordancers

Cognitive progression	Concordancer use	Tasks	Teacher's role	Teaching approach
Knowledge/ Remembering	Controlled searches: looking for factual information	The use of prepositions, plural/ singular forms	Enabler: extensive scaffolding	Teacher-centred
Understanding	Guided searches: understanding the possibilities of concordancer searches	Implications of different word frequencies	Facilitator
Applying	Guided searches: applying knowledge, using concordance material to help with students' own writing	Paraphrasing using family searches	Facilitator	
Analysing	Supported searches: analysing corpus data, noting recurrent patterns, analysing patterns, coming to conclusions about usage	Analysis of lexico-grammatical patterns Correct use of collocations	Consultant	
Evaluating	Supported searches: evaluating corpus data from the point of view of its applicability for use in own writing	Evaluating which features of writing are appropriate for academic style	Consultant	
Creating	Completely independent searches to assist in writing as and when needed.	Using data from corpora to inform independent writing	Fellow-researcher and co-learner	

Supplementary material

[Click here to download Supplementary material: Revised Supplementary material - Appendices A and B.docx](#)