



Teaching L2 English with TED Talks: A Pedagogical Approach to Corpus Linguistics and Its Application to L2 Discourse

Increased trade, commerce and business transactions at the international level are placing a substantial demand upon working professionals and college students who must learn English, the lingua franca of international business, in order to thrive in a competitive global workplace. Learning English as a second language (L2) can be a daunting task for many reasons. For instance, how does a student or teacher really know which words or phrases are the most practical to focus upon when learning or teaching? With expanding technology and tech tools (e.g., computer software, apps, etc.) widely available, more modern approaches to learning authentic discourse can increasingly be developed. Lexical chunks, or bundles, i.e., the building blocks of oral discourse, may be analyzed via corpus concordance software and serve as a useful pedagogical tool for teachers and a practical learning tool for students in the L2 classroom. Anyone today can access online corpora, making it an easy resource for L2 teachers and learners to utilize. Teachers may draw content that is suitable for the unique needs of their class, and students can form novel and autonomous linguistic conclusions instead of being spoon fed fixed textbook content. Geared towards L2 educators, this paper more specifically illustrates how corpus-based tools can be utilized to augment second language learning, helping L2 college students achieve communicative competence in their academic and professional lives.

Lexical phrases, identified by Hyland (2008) as 'multi-word expressions', 'clusters', 'chunks', or 'bundles' (p. 4) encompass frequent collocations that contribute to linguistic fluency, helping readers form semantic meanings, adding to their knowledge and understanding of a text (p. 4). These frequent language patterns (Baker, 2006), which may be quantitatively and qualitatively analyzed via corpus concordance software, can serve as a useful educational tool for both teachers and students in the language classroom. While many corpus-based textbooks have already been published, it is important for teachers to have immediate access to their own (and others) authentic corpus data at their fingertips in order to stay fresh and up-to-date in their field without repeatedly relying on the same English language textbooks, which can become outdated and are often time consuming to edit and republish. Moreover, L2 college students, often struggling with spoken discourse in academic and professional settings, can benefit from analyzing and using corpus-based lexicon to improve expressive discourse skills like public speaking, a necessary talent required to stay afloat in today's fast-paced, globalized society. Hyland (2008) reasons that, "bundles are not only central to the creation of academic discourse, but also offer an important means of differentiating written texts by discipline" (p. 4). In other words, these lexical phrases, which shape the foundation of discourse, also distinguish different types of discourse, which can branch off into a variety of disciplines (catered to the individual student's linguistic

situation) such as academic discourse, oral discourse, written discourse, legal discourse, medical discourse, etc.

ESL teachers who wish to teach (and ESL students who wish to learn) specific language features at the lexical, grammatical, or discursive levels can consult Data-Driven Learning (DDL), i.e., “sorted concordances of words and phrases” (Reinhardt, 2010, p. 244). These sorted concordances can encourage students to be independent “researchers to identify recurring patterns of language in concordances” (p. 197), essentially putting L2 students at the forefront of a more active and effective learning process (Ackerley, 2017). Thus, by selecting frequent lexical expressions, L2 teachers can facilitate the learning process of L2 college students seeking to improve their speaking skills, by providing this genre-specific lexicon (e.g., language used by TED Talk speakers) for students who can then autonomously incorporate them into their own prepared speeches.

In the following paper, I address the process by which an educator can effectively employ and manipulate corpus data to be used by L2 learners to shape their spoken discourse and demonstrate how this can be done via a teaching lesson. My lesson, using a concordance software program called AntConc (Anthony, 2019), and a website for data-driven learning called lextutor.ca (Cobb, 2019), examines the language patterns culled from a corpus of 200 TED Talks in the social sciences and natural sciences. Because prepositional phrases occur so frequently throughout the English language and can often be confusing to non-native English speakers (NNS), the lexical emphasis of this corpus lesson is upon prepositional phrases containing prepositions *at*, *in* and *on*. By using these prepositional phrases in the L2 classroom, students will gain confidence as their new linguistic skills are generalized to real world settings. My corpus-based and data-driven lesson shows L2 teachers how to interpret, utilize, and teach oral discourse from a more authentic and valid standpoint when compared to more mainstream L2 pedagogical practices and notions of discourse interpretation (Baker, 2006).

Literature Review

Teaching Public Speaking with TED Talks

Public speaking skills are pivotal to a student’s and pre-professional’s future success. Wallwork (2016) and Leopold (2016) discuss ways that ESL/EFL presenters can improve their public speaking (a salient skill to learn today) in both academic and professional contexts by observing and identifying the features of effective TED Talks. Using a handful of select TED Talks, Wallwork (2016), identifies elements of high-quality oral presentations including style, structure, vocal tone, eye-contact, etc. Leopold (2016) similarly uses clips of TED Talks to teach presentation skills to a L2 audience to improve their academic and professional prospects. She argues that not only do professors and students view public speaking as an important academic skill to learn, employers and employees perceive it is a fundamental element of professional success. The authenticity of TED Talks provides a better foundation of input (lexical and syntactic), helping students ‘notice’, develop communicative competence, and enhance their intrinsic motivation (Gilmore, 2007 as cited in Leopold, 2016, p. 48).

Just as Wallwork (2016) identifies aspects of effective oral presentations in TED Talks, Leopold (2016) recognizes various types of support (e.g., definition, quotation, visual imagery, narratives, analogies and finally visualization and demonstration) illustrated in the same platform of select TED Talks. Compared to Wallwork, however, Leopold (2016) actively teaches L2 students in a classroom context how to utilize these public speaking essentials in their own novel and ‘extemporaneous’ speeches (p. 46). Yet, while both studies provide fresh examples of how L2 students can effectively deliver a high-quality oral presentation, they do so through an approach which is not corpus-based. Hence, the studies of Wallwork and Leopold on improving public speaking skills could benefit from a more authentically derived corpus-based method. The details of such a corpus-based approach will be discussed in the following section.

Corpus Data from TED Talks

Corpora—samples of authentic, naturally-occurring language—both written and spoken, are a recent avenue of research in the field of L2 teaching and learning. They can “foster the learners’ analytical capacities, promote their explicit knowledge of the L2, facilitate critical language awareness, and support the development of learner autonomy” (Gabel, 2010, p. 269 as cited in Reinhardt, 2010, p. 244). Baker (2006), further promoting the use of a corpus-based approach to discourse analysis, suggests that data-driven interpretations of lexicon, for instance, making “an association between two words, occurring repetitively in naturally occurring language is much better evidence for an underlying hegemonic discourse...” (p. 13) when

compared with a single instance of the word in isolation. By hegemonic discourse, Baker is alluding to the power of language which is shaped by cultural, political and social contexts. In the framework of English (the global lingua franca), lexical chunks, collocations or multi-word expressions evolve, and eventually solidify, into a unifying “hegemonic”, or powerful, discourse which could be (as previously mentioned) inclusive of academic, professional, social, or other circumstances, each with their own unique characteristics and roles in English-speaking societies. These dominant discourses are recognized and legitimized within society; therefore they are part of the discourse that English language learners prefer to learn so they can climb higher on the dominant linguistic ladder, becoming more competent in whatever discursive context they choose. So it can become easier for L2 teachers to teach their students when they have an authentically extracted, corpus-based approach as their foundation.

Moreover, corpus use by L2 teachers can “serve as a source of evidence that complements both the intuitions of teachers who speak English as a first or additional language, and the notions of learners about the ways speakers and writers actually use the language” (Huang, 2018, p. 384). Yet, despite the usefulness of data-driven instruction, use of corpus-based materials is not commonplace in the L2 classroom, as I will demonstrate (Huang, 2018).

For example, Caliendo and Compagnone (2014) examine the corpora of TED Talks with a focus upon voice elements (e.g., epistemic stance) of academics in various genres. These TED corpora are compared to the language used in the Michigan Corpus of Academic English (MICASE) in university lectures. Yet, while this study (and others like it) provides a thoughtful analysis of real-world language (epistemic stance / voice) through corpus-informed research, it does not discuss the pragmatic application of its findings to the ESL / EFL classroom setting.

On the other hand, Huang (2018) elevates corpus practice to the L2 classroom context. She delineates the various ways that corpora can be integrated into L2 pedagogy which includes three tiers: “teaching about” corpora as an academic discipline, “teaching to exploit” corpora for students to use as a learning tool, and “exploiting to teach” corpora for teachers to use as a pedagogical instrument to complement teaching practices (p. 383). “Teaching about” corpora includes the idea of presenting corpora in an academic context and the overall understanding about its benefits to language students. For example, if I teach my class of intermediate L2 students about a new way of language learning that involves this concept of “corpora”, they can ponder it for their own purposes at a later date. “Teaching to exploit” corpora involves teachers teaching students about different ways of applying corpora for the purpose of language learning. For example, that same L2 intermediate level class would learn how to directly use corpus software like lextutor.ca (Cobb, 2019) to discover the most frequently used vocabulary words that can be found in a given newspaper article (written language) or transcript from a news interview (spoken language). “Exploiting to teach” is how teachers use corpora to inform their teaching practices. For instance, an English language teacher who is creating an intermediate lesson with sleep as the springboard topic might use corpus software to analyze the language patterns used in a TED Talk transcript entitled, “Why Schools Should Start Later for Teens” and then select relevant phrases that come up (e.g., pitch black, fast asleep, sleep deprivation, etc.) for her next L2 lesson.

Pedagogical Implications: Data-Driven Teaching

In our increasingly technologized society, with technology tools such as computer software and apps widely available to the average citizen, anyone today can access online corpora, making it an easy resource for L2 teachers and learners to utilize. Yet with many of these resources at our fingertips, a gap still exists between research and practice in teaching English as a second, foreign, or international language. Except for pedagogical areas like English language teaching (ELT) and English for Specific Purposes (ESP), corpus-informed research appears broadly indiscernible to teachers and students (Boulton, 2009) and has not been merged into ESL/EFL teacher trainings, methods, or materials (Reinhardt, 2010).

Further citing corpora’s limited role in the L2 classroom, Huang (2018) argues that instances of corpora used for educational purposes have been scant and still have a long way to go before its classroom application status becomes more tangible. “Reasons for this include time limitations, lack of access to technology, programme requirements, insufficient language proficiency by learners, and inadequate expertise and skills needed by teachers to analyse and teach with corpora” (p. 383). The problem is that educators may not know how to effectively apply corpus data to the classroom setting and, because of limited resources and training, may not know how to properly use its programs and resources. As we have seen in the literature of corpus

pedagogy and data-driven learning, corpora are primarily used by researchers and reference material developers who have not yet delved into or identified any pedagogical implications from their research (Caliendo and Compagnone, 2014).

While most corpus linguists conduct research rather than teach, some studies (Li & Volkov, 2017; Huang, 2015) do make a noteworthy dent in the field of corpus linguistics by analyzing corpus-based language patterns of L2 students in various genre-based tasks (e-mail writing, argumentative essays, etc.). Li and Volkov (2017), in observing L2 students' use of lexical bundles in e-mail writing tasks, find that L2 test-takers who used more lexical bundles in their e-mail writing were at higher proficiency levels when compared to learners at lower levels who did not use as many lexical bundles in their writing samples (p. 54). Huang (2015) compares the frequency and accuracy of lexical bundles in a collection of essays written by Chinese EFL students in mainland China, according to proficiency level. Huang's (2015) paper discusses the frequency, variety, and accuracy of senior use (i.e., more advanced users) of lexical bundles as well as the most frequent error types when compared to junior level students (p. 14). Results illustrated that seniors used more than two-and-a-half more lexical bundles than juniors did and did so with greater range and variety. Each of these studies, possessing apparent implications for L2 pedagogy, demonstrate that corpus-based language can be used not only to assess and classify L2 learners upon pre-existing lexical knowledge but—if these corpus-informed studies take a pedagogical approach—the observed lexical patterns can also be used as a scaffold for less proficient L2 learners to acquire new words and phrases in genre-specific discourse.

Further narrowing the gap between corpus inquiry and L2 pedagogy, Quinn (2014), Poole (2016) and Ackerley (2017) put corpus data into practice by using it as a valuable L2 teaching tool for a variety of genre-based tasks. Using the DDL approach, Quinn (2014) introduces L2 students to corpus tools, from which they give self-corrective feedback on their academic essays by generalizing and drawing inferences for their written discourse in an intermediate level writing composition class. Similarly, Poole (2016) utilizes a corpus-based approach to teach L2 undergraduates about rhetoric in an ESL writing course. Concordance data are presented to the students who read and analyze texts about two groups forming opposing perspectives: An environmental group against the local building of a copper mine and an international mining company seeking to build a copper mine in the southwestern United States. This sharp contrast allowed students to, "...notice, analyze, interpret, and discuss the meaningful and purposeful linguistic and rhetorical variation present in the texts, the corpus data, and the debate" (p. 99). Furthermore, the localized context with the potential copper mine, located within miles of the school, provided geographical and community-based meaning and significance to the students. Likewise, Ackerley (2017), exploring how DDL resources contribute to the L2 learning process, makes a comparison between two groups of students with the task of writing an opinion survey report: One group, using a given reference corpus, performs DDL tasks while the other group has no interaction with, or exposure to, the learner corpus. Ackerley's (2017) argument that "A phrase-focused approach to teaching and learning may lead to more fluent, native-like, or expert production" (p. 197) is justified when the results of her study verify that L2 students who utilized the reference corpus incorporated more genre-specific lexicon into their writing than students who did not use the corpus.

Therefore, using data-driven learning (DDL), students can confidently make independent semantic connections and recognize "form-function relationships and patterns of semantic prosody" (Reinhardt, 2010, p. 244) for their own educational purposes. When compared to the basic, rudimentary and more traditional method of informing one's written discourse via simplistic, one-word dictionary entries, DDL is an important technique that students can apply the quantitative, linguistic results of corpus instruments to correct and revise the qualitative discourse of their writing (e.g., in academic essays, business e-mails, opinion survey reports, etc.) or speaking (e.g., oral presentations, public speaking, etc.). Moreover, while the studies of Quinn (2014), Poole (2016) and Ackerley (2017) primarily focus upon writing tasks, as a productive skill, corpus tools can be used to model for teaching oral expression as well. In sum, the pedagogical approaches and practices utilized in these studies make a dent in the field of corpus linguistics, showing how and DDL can be used as a template and exemplar for future L2 curricula.

Corpus Analysis

Writers use metadiscourse to organize their ideas and to project an authorial stance to their reader (Hyland, 2004). Hyland (2004) explains how the features of metadiscourse, which are used prevalently in L2 classes, help readers to understand a given text: "Thus, logical connectives (however, therefore, etc.),

sequencing items (first, next, then, etc.), and hedges (might, perhaps, possibly, etc.) are, if EAP textbooks are any indication, widely taught in academic writing courses” (p. 135). Yet, Hyland (2004), discussing implications and challenges associated with teaching this language element, further argues:

But while the addition of these features can help writers to transform a dry, difficult text into coherent, reader-friendly prose, they are often taught in a rather piecemeal fashion, and little attention is given to how they function more widely to influence the interaction between writer, reader and text, or how they relate to the particular genre and discipline in which the student is working (p. 135).

Thus, following traditional teaching practices in other L2 academic courses, yet simultaneously challenging Hyland’s notion of teaching discourse features that lack a genre-specific context, I identify data-driven discourse markers (in the form of prepositional phrases) that occur frequently in the framework of TED Talks in the natural sciences and social sciences. From this discourse, I propose teaching an intermediate level L2 English lesson about robots, using prepositional phrases that frequently occur in an independently created corpus of 200 TED Talks.

Moreover, my *indirect* pedagogical approach to corpus education encompasses teaching a lesson with phrases that I have independently selected. This indirect approach will allow my L2 students to freely analyze the data without any technological hurdles (Boulton, 2010; Huang, 2014), serving to benefit them by preventing the ‘drowning in the data’ and ‘corpus as maze’ phenomena (Adel, 2010, as cited in Poole, 2016, p. 103). To avoid some of these potential challenges posed to a corpus-informed lesson, I identified discursive features frequently utilized by TED speakers. Taking transcripts from 200 TED Talks, I uploaded my data to AntConc (Anthony, 2019). This analysis of frequently occurring prepositional phrases (*at*, *on* and *in*) resulted in an output of approximately fifty lexical bundles, appearing in the form of prepositional phrases. From these chunks of language, I chose a total of six (two from each preposition, e.g., *on the other hand*, *at the same time*, etc.) to be the pedagogical focus of my L2 lesson in corpus-based discourse.

Further analyzing the corpus materials, I found a TED Talk about robots that contained the most prevalent examples of this phraseology (Ackerley, 2017), which I decided to use as the basis for my lesson. The TED Talk focused upon robots’ role today and the plight of the unemployed in the face of these relentlessly productive robots that some individuals feel are taking jobs away from humans. To capture content-based vocabulary connected to the technological topic, I added the TED transcript to another corpus tool: A website for data-driven learning called *lextutor.ca* (Cobb, 2019), where I used a vocabulary profiler (that broke down the text by word frequencies at the university level) and a “familizer/lemmatizer” function (which provided a list of word families and tokens from the TED Talk transcript). This list produced a total of 522-word families and 3,338 tokens, from which I independently selected lexical items (terms like *capable*, *task*, *employ*, *accelerate*, etc.) that I believed were the most relevant for the L2 lesson.

As previously mentioned, my English lesson, unlike conventional L2 courses, addresses the prepositional phrases using *concordance lines* for students to understand the meta discursive framework in which the phrases are being utilized (in the framework of syntax, semantics and even punctuation). Concordance lines are a corpus tool which allows users to observe language patterns, particularly multi word expressions and phrases (as opposed to single words). By emphasizing the functions of these lexical bundles as discourse markers in speech events like oral presentations, L2 students gain a better understanding of what situations, and in which linguistic circumstances, to appropriately use these useful phrasal chunks. Thus, from the pedagogical viewpoint of data-driven learning (DDL), I show how students can observe their L2 from a more autonomous, direct, and critical perspective, which can then help enhance their understanding of the English language.

Corpus Data Applied

My teaching approach encompasses all avenues previously mentioned by Huang (2018): “teaching about” corpora and its background as an academic discipline, “teaching to exploit” corpora for students to use as an educational instrument, and “exploiting to teach” corpora for teachers to use as a pedagogical tool to complement their educational practices (p. 383). Moreover, my L2 lesson is meaningful in that it combines quantitative corpus analysis with the qualitative content-based topic discussing robots overtaking human labor, as discussed in one of the TED Talks.

I begin this 1-hour English lesson by showing an image of a robot working as a chef, activating my students' schemata on the topic of artificial intelligence and its impact upon society and human labor (see Appendix C). The picture is accompanied by content-based questions that stimulate my students' pre-existing knowledge. I then ask students to read critical thinking questions in pairs, followed by information about the TED speaker, Martin Ford, to infer what the TED Talk topic will cover (see Appendix C). Students read two excerpts from the TED Talk transcript: first a plain text version with no bolded or highlighted words, then a second transcript that includes the lexical items (singletons and lexical bundles) in the lesson (see Appendix D). Next, students watch the TED video clip, noticing the spoken discourse in an oral format, and observe new phrases being used.

Each student then finds a partner and together they search for language patterns (semantic, syntactic, punctuation, etc.) using concordance lines (see Appendix E). The teacher asks students to share their findings with the rest of the class, and as students produce answers, the teacher writes their unique observations on the white board to create a visual illustration of everyone's ideas. The teacher clarifies, confirms, and corrects student findings and introduces new ideas that have not yet been discovered. For example, logical connector/subjunctive adverbs like "on the other hand" are used to modify provided information, preceded by a semicolon or a period, and are usually followed by a comma. Moreover, another common pattern following many prepositional phrases is that they are often followed by "of", as can be seen in the lexical bundles presented in this lesson: *at the end of*, *on the surface of*, *in the context of*, *in the form of*.

Next, students find a partner and take turns with a speaking activity that contains all the vocabulary and lexical bundle items (see Appendix F). To finish, students get into groups and begin researching a topic about which they will create an oral presentation. During the presentation, students must utilize the lexical bundles they learned during the lesson to shape their oral discourse. Finally, the teacher assigns a reading and writing assignment for homework, to reinforce the new lexicon, and dismisses the class.

Conclusion

We have seen that multi-word expressions which surface from corpus data can be a salient element of L2-teaching and learning. We have also observed, in a variety of studies, how this language data can be practically used by both students and teachers. Corpus concordance technology and data-driven applications are becoming more widely available than ever before (Anthony, 2019; Huang, 2018; Li & Volkov, 2017). L2 college students, often struggling with spoken discourse in academic and professional settings, can benefit from utilizing corpus materials to improve productive discourse skills like public speaking, a necessary talent required to stay relevant in today's fast-paced, globalized society. Authors like Hyland, Li & Volkov, and Huang, advocating for corpus-informed pedagogy, have demonstrated how corpus data can be applied to the L2 classroom, narrowing the gap between data-driven research and data-driven practice. Moreover, in my corpus-based lesson, I have proposed to continue closing this gap by helping L2 college students shape their oral discourse via language features found in 200 TED Talks, specifically by showing how prepositional phrases (inclusive of the prepositions *at*, *in* and *on*) are utilized in public presentations (in both written and spoken form) and through concordance lines. My lesson—which interprets, utilizes, and teaches oral discourse from an authentic and valid perspective—may be used by language teachers in their own L2 classroom contexts to help their college students improve their public speaking skills and overall oral proficiency so they can be academically confident and professionally competitive in this ever-changing and expanding globalized world.

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Appendix A Corpus-Based Lesson Plan

Target language points: Prepositional phrases as oral discourse markers

Target proficiency: High-Intermediate, Low-Advanced

Lesson objectives: By the end of this lesson, Students will be able to (SWBAT)...

- examine linguistic features of oral presentations from a data-driven, corpus-based approach
- identify language patterns in spoken discourse found in TED presentations with a focus on the following prepositional phrases (e.g., *at the same time, at the end of the, on the other hand, on the surface of, in the context of, in the form of*)
- utilize select prepositional phrases in appropriate and meaningful contexts to shape SS spoken discourse
- understand corpus-based lexicon (single word items) related to lesson topic
- understand the linguistic function of corpus-based prepositional phrases and utilize these bundles in spoken discourse

Skill Areas	Language Targets	Resources & Materials	Activity Stages	Time
Listening, Speaking, Reading	Schema Activation and stimulation of pre-existing knowledge	Robot photo Critical Thinking questions Short bio of TED Speaker, Martin Ford	<ul style="list-style-type: none"> • Teacher (T) introduces lesson by showing students (SS) a photo of a robot preparing a meal and asks SS, “Are Robots Taking Human Jobs?”. • T asks SS to read and discuss “CRITICAL THINKING QUESTIONS” in pairs. • 3) SS then read information about TED speaker, Martin Ford & take a guess/inference about TED Talk 	10’
Reading,	New lexicon in written form	TED excerpt #1 (non-highlighted terms), TED excerpt #2 (highlighted terms)	<ul style="list-style-type: none"> • SS read TED excerpts #1, confirming & clarifying the presentation topic & content which they’d previously guessed. 2) SS then read TED excerpts #2, observing new phraseology in context. 	6’
Listening, Reading	New lexicon in spoken form	TED Talk video clips	SS watch TED video clips, observing the spoken discourse & listen for new lexical items.	7’
Reading, Speaking, Listening	Prepositional phrases (written) corpus analysis	Concordance lines	SS find a partner. T gives SS concordance lines. Together, SS search for language patterns (semantic, syntactic, punctuation, etc.) & discuss findings with a partner.	10-15’

Reading, Speaking, Listening	Prepositional phrases (corpus analysis, continued)	Concordance lines	T asks SS to share their findings with the class. T collects SS observations by writing findings on whiteboard. T clarifies, confirms and corrects SS findings. T introduces new ideas that haven't been previously discovered. (e.g., logical connector/subjunctive adverb "on the other hand" used to modify provided information, preceded by a semicolon or a period & are usually followed by a comma. Also many prepositional phrases, as exemplified in the bundles, are often followed by <i>of</i> (e.g., <i>at the end, on the surface, in the context, in the form...</i>)	7'
Speaking, Listening, Reading	Lexical bundles in conversation	Speaking Activity Questions	SS find a partner. SS take turns asking and answering questions for the speaking activity.	6-7'
Listening, Speaking, Reading, Writing	Preparation for oral presentation. with aim of lexical output	"Questions" & "Group Presentation Guidelines"	Group work: SS get into groups of 3-4. Each group chooses a topic, from which they will create an oral presentation using prepositional phrases to shape their oral discourse. See instructions provided on "Group Presentation" handout.	20'
Reading, Writing	Homework (HW)	Lexical Practice	T assigns HW (Reading & Writing assignment w/ terms).	2'

APPENDIX B
Lexical Bundles from TED Talk Corpus

The following list includes 48 lexical bundle results from the concordance software program, AntConc. Among the 48 prepositional phrases, I chose six (highlighted in yellow) to teach in my L2 lesson in corpus-based oral discourse.

Prepositional Phrases from TED Corpus

Settings: Min. Frequency: 3, Min. Range: 3, Min. N-gram size: 4, Max. N-gram size: 9

At: (Lines 1-800)

- 1) **At the same time**
- 2) At the university of
- 3) **At the end of the**
- 4) But at the same time
- 5) At some point in
- 6) And at the same time
- 7) At the center of
- 8) At the end of the day
- 9) At the hands of
- 10) At the time and

On: (Lines 1-985)

- 1) **On the other hand**
- 2) **On the surface of**
- 3) On a daily basis
- 4) On the order of
- 5) On the other side
- 6) On the one hand

7) On the surface of

8) On top of the

In: (Lines 1-800)

- 1) **In the context of**
- 2) **In the form of**
- 3) In the way that
- 4) In a world where
- 5) In New York city
- 6) In terms of
- 7) In the early
- 8) In the United States
- 9) In the world
- 10) In a couple of
- 11) In front of
- 12) In the face of
- 13) In the Middle East
- 14) In a lot of
- 15) In a way that

16) In fact

17) In front of

18) In order to

19) In a way that

20) In fact

21) In the case of

22) In the center of

23) In the middle of the
night

24) In the opposite
direction

25) In the physical world

26) In the real world

27) In the world

28) In ways that we

29) So in order to

30) And in order to

APPENDIX C

Lesson Topic: Are Robots Taking Human Jobs?

CRITICAL THINKING: Think about the role of robots in today's society. Do you think robots are important? Why, or why not? Discuss your thoughts and answers with your group then answer the following questions:

- 1) Look at the photo. What is this robot doing? Why?
- 2) What kinds of solutions or problems might this create?
- 3) How do you feel about robots in today's society?

Next, read the title and information about the TED speaker. What do you expect this presentation will be about?

Should the Minimum Wage be called the "Robot Employment Act?"

(From: Cowen-Tabarrok, Modern Principles of Economics, 3rd ed)



TED Talk: How We'll Earn Money in a Future without Jobs



Martin Ford: Futurist *TED Speaker*, Martin Ford imagines what the accelerating **progress** in robotics and artificial intelligence may mean for the economy, job market and society of the future.

Martin Ford was one of the first analysts to write compellingly about the future of work and economies in the face of the growing automation of everything. He sketches a future that's radically reshaped not just by robots but by the loss of the **income**-distributing power of human jobs. How will our economic systems need to adapt? He's the author of two books: *Rise of the Robots: Technology and the Threat of a Jobless Future* (winner of the 2015 Financial Times/McKinsey Business Book of the Year Award) and *The Lights in the Tunnel: Automation, Accelerating Technology and the Economy of the Future*, and he's the founder of a Silicon Valley-based software development firm. He has written about future technology and its implications for the New York Times, Fortune, Forbes, The Atlantic, The Washington Post, Harvard Business Review and The Financial Times" (https://www.ted.com/speakers/martin_ford).

APPENDIX D
TED Talk Transcript (with identified lexicon)

How We'll Earn Money in a Future without Jobs (with speaker Martin Ford)

https://www.ted.com/talks/martin_ford_how_we_ll_earn_money_in_a_future_without_jobs/

Highlighted Lexical Bundles (in yellow): at the same time, at some point in/ at some point, in the way that, on the other hand. Content-based words are shown in green.

Excerpt #1 (at the same time): This alarm has been raised repeatedly, but it's always been a false alarm. And because it's been a false alarm, it's led to a very conventional way of thinking about this. *****And that says essentially that yes, technology may devastate entire industries. It may wipe out whole **occupations** and types of work. But **at the same time**, of course, **progress** is going to lead to entirely new things. So there will be new industries that will arise in the future, and those industries, of course, will have to hire people. There'll be new kinds of work that will appear, and those might be things that today we can't really even imagine. And that has been the story so far, and it's been a positive story.

Excerpt #2 (at some point in, in the way that, on the other hand): But there is one particular class of worker for whom the story has been quite different. For these workers, technology has completely decimated their work, and it really hasn't created any new opportunities at all. And these workers, of course, are horses. (Laughter) So I can ask a very provocative question: Is it possible that **at some point in** the future, a significant fraction of the human workforce is going to be made redundant **in the way that** horses were? Now, you might have a very visceral, reflexive reaction to that. You might say, "That's absurd. How can you possibly compare human beings to horses?" Horses, of course, are very limited, and when cars and trucks and tractors came along, horses really had nowhere else to turn. People, **on the other hand**, are intelligent; we can learn, we can adapt. And in theory, that ought to mean that we can always find something new to do, and that we can always remain relevant to the future economy.

Excerpt 3 (at some point): And the reason is that we tend to draw a very distinct line, and on one side of that line are all the jobs and **tasks** that we perceive as being on some level **fundamentally** routine and repetitive and predictable. And we know that these jobs might be in different industries, they might be in different **occupations** and at different skill levels, but because they are innately predictable, we know they're probably **at some point** going to be susceptible to machine learning, and therefore, to automation. And make no mistake—that's a lot of jobs. That's probably something on the order of roughly half the jobs in the economy.

Vocabulary & Lexical Bundles

Capable	Task	Fundamental	Income	In the way that	On the other hand
Employ	Accelerate	Occupation	Progress	At the same time	At some point

APPENDIX E
Concordance Lines with Prepositional Phrases (from AntConc)

Student Directions: The following data set comes directly from a corpus of TED Talks and includes *concordance line results* from AntConc. Look at the language patterns (grammar, lexicon, situational context, punctuation etc.) surrounding each prepositional phrase.

1) **At the same time:**

are not losing more heat to space. But **at the same time**, they're trapping more heat
s, like beef carnitas. 05:15 (Laughter) 05:17 **At the same time**, I cultivate a set of
will teach it some corpus of law but **at the same time** I am fusing with it
order to come to work on the Earth **at the same time** every day on Mars -- like,
as a scientist that's fantastic, but again, **at the same time**, it opens the door to
ct extraordinaire. 02:17 (Laughter) 02:18 And **at the same time**, I'm pursuing my PhD.
be able to have so many options. And **at the same time**, as you talk about this
asizes the undefined nature of a relationship but **at the same time** gives you enough of a
how a vocabulary also creates a reality, and **at the same time**, that's my question to
and sharing of personal health data that's **at the same time** stringent and sensible. It needs

2) **In the way that:**

fundamentally, the thing that we need to change **in the way that** we talk about physics, is
. I'd like you to think about consciousness **in the way that** we've come to think
health. She could use it when she wanted, **in the way that** she wanted, at the dose
t this war with better medical imaging techniques **in the way that** is not blind. 12:25 Thank you.
human workforce is going to be made redundant **in the way that** horses were? Now, you might
you everything chronologically. It puts the order **in the way that** the algorithm thinks will entice
example is "slash." Now, we can use slash **in the way that** we're used to, along
a long time. People don't just disagree **in the way that** we're familiar with, on

ybe change our lives for the better. 10:18 Now, **on the other hand**, maybe one time it'll
number of Row-bots you can use. If, **on the other hand**, you have robot a little
a job for her with her record. He, **on the other hand**, did reoffend and is now
:49 Chicago. The two humans got it right. Watson, **on the other hand**, answered "Toronto" -- for a US
01:09 Famine isn't fun. Death by science fiction, **on the other hand**, is fun, and one of
ission, it's gone forever. Graphic communication, **on the other hand**, decouples that relationship. And with
he trust put into its financial industry. 01:44 **On the other hand**, there are six out of
your chances of getting a bonus payment. And **on the other hand**, if you disregard it, then
better. That's what our research shows. If, **on the other hand**, we do so -- if we
to get people to behave according to them. **On the other hand**, you can select people who |

3) **On the other hand:**

4) **At some point**

a very provocative question: Is it possible that **at some point in** the future, a significant fraction
of school. And yet, suppose you know that **at some point in** the future, no matter what,
today's children will see a parent incarcerated **at some point in** their childhoods. But this number
the Middle East came to see me. And **at some point in** our exchange, she said, "I
every news media owner to hear that talk **at some point in** the next year. I think
mmunication with the character, astronaut Watney, **at some point so** that he's not as
akening the force of machine complementarity. And **at some point, that** balance falls in favor of
what I was passionate about, and I thought **at some point that** I had developed this thinking

APPENDIX F
Language Skills Activities

Speaking Activity: Choose a partner and take turns asking and answering the following questions. Use the **bolded** words in your answers.

- a) Have robots / Artificial Intelligence (A.I.) **accelerated** the economy?
- b) Do you like multitasking? Have you ever done many things **at the same time**?
- c) What is your ideal **occupation**? What is the ideal **occupation** for a robot?
- d) Do you think that machines will take over human jobs **at some point** in the future?
- e) What are some things that robots are **capable** of doing in the workplace?
- f) Is technology making things too convenient? Is it improving **in a way that** is causing any problems? Discuss.
- g) Some people think robots are harmless; **on the other hand**, other feel A.I. is replacing human jobs. What do you believe?
- h) How would **you employ** a robot to do a routine job that you dislike?

Reading & Writing: Read the sentences with words from the TED Talk. Guess meanings of each **bold** word/phrase. Then write each term next to its definition

- a) The pace of change has **accelerated** in recent months.
- b) The workers all arrived **at the same time**.
- c) Her prime **occupation** was as editor.
- d) I think this bubble will burst **at some point**.
- e) It is a citizen's responsibility to protect **fundamental** human rights.
- f) She looked enthusiastic and **capable**.
- g) The company's annual **income** doubled this year.
- h) Maybe the problem lies **in the way that** we interpret things.
- i) The chef was responsible for a variety of **tasks**.
- j) The darkness did not stop my **progress**.
- k) It could be true; but **on the other hand**, it may be a lie.
- l) The firm **employs** 150 people.

1. _____ (v.) To move faster; to gain speed.
2. _____ (n.) A job or profession.
3. _____ (adj.) Able to achieve something efficiently; competent.
4. _____ (adv.) Manner, mode or fashion.
5. _____ (phrase of time) Simultaneously; at once.
6. _____ (n.) Money received, especially on a regular basis.
7. _____ (adj.) Forming a necessary base or core; of central importance.
8. _____ (n.) A piece of work to be done or undertaken.
9. _____ (adv.) From another point of view or perspective.
10. _____ (adv.) At an indefinite but stated time in the past or future.
11. _____ (v.) Give work to (someone) and pay them for it.
12. _____ (n.) Forward or onward movement towards a destination.

Group Oral Presentation

Questions:

- 1) Choose three corpus-based lexical bundles from TED Talks, the video clips, or the concordances provided and write a few sentences about what they may imply in an oral presentation? (Think in terms of grammar, lexicon, context, etc.). You may refer back to TED transcript(s) or concordance data.

- 2) How can the lexical bundles you learned about today be useful for individuals giving oral presentations? Using the concordance / corpus research you performed today, explain what will these phrases help a public speaker convey?

Group Presentation:

In a small group, you will give a short presentation about a topic of your choice, using some of the prepositional phrases you learned about today to construct your speech. Your presentation should be 4-6 minutes long. As part of your presentation: 1) Everyone in your group should use at least two lexical bundles and each person should speak for at least 1-2 minutes,

You may use visuals (such as a short video, photos, slides charts and/or graphs, 3) You should prepare a simple ½ page handout giving your reason for using your chosen prepositional phrases and explain how it helped to illustrate the content of your presentation.

Advice: Keep your explanation and analysis simple, present in a way that your classmates can easily understand, practice so it doesn't go over 6 minutes, try memorizing the points you will make.

Grading: Presentations will be graded as 4% of your final course grade based upon content, language, presentation and self/peer evaluation