

EXPLORING TEACHER ATTITUDES REGARDING
CORPUS-ASSISTED LANGUAGE LEARNING
FOR YOUNG LEARNERS OF ENGLISH

by

KIRA DUNTON

ROBERT POOLE, COMMITTEE CHAIR
DOROTHY WORDEN-CHAMBERS
ISABELLE DREWELOW

A THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Department of English
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2022

Copyright Kira Dunton 2022
ALL RIGHTS RESERVED

ABSTRACT

Corpus-assisted language learning (CALL) has been established as a successful approach to language teaching and learning within the contexts of tertiary and secondary language learning classrooms (Boulton & Cobb, 2017). Despite its many successes, however, CALL approaches have remained underexplored within the context of young learners. This thesis aims to further the research of CALL with young learners of English through surveying pre-service teachers about their attitudes and expectations concerning CALL and young learner language education. By reviewing the literature surrounding the application of CALL in adult ESL/EFL, tertiary, and secondary contexts alongside the relatively few examples of CALL within primary or young learner contexts, this thesis highlights the need for more research into the application of CALL within young learner contexts. Breyer (2009) argues that focusing on the role of the teacher and their attitudes will be the key towards popularizing the use of CALL practices; therefore this project surveys pre-service language teachers to explore their attitudes surrounding CALL and young learners. By analyzing the pre-service teachers' responses using descriptive thematic analysis based in constructivist grounded theory methodology, this project allowed themes to emerge from the data, identifying positive, negative, and neutral attitudes held by the pre-service teachers. Significant findings include the tension between pre-service attitudes about CALL and the lack of implementation of CALL within their own language classrooms; the potential of pre-made corpus activities as templates for implementation and context-specific adaptation; and the value of focused instruction surrounding applications of CALL across all contexts within teacher education programs.

DEDICATION

I would like to dedicate this master's thesis:

To my grandparents, Don and Bonnie, who went before me—may you find joy in considering this part of your legacy (and in bragging about it to your friends, of course).

To my nieces, Embry and Paisley, and my nephews, Lochlan and Rowan, who come after me—may you let nothing stand in your way as you discover your passions, whatever they may be.

And to my cats, Peaches and Raisin, who I am pretty sure are eternal beings which exist outside of time or space—may you never know hard work (such as writing a thesis) a day in your life.

LIST OF ABBREVIATIONS

BNC	British National Corpus
CALL	Corpus Assisted Language Learning
COCA	Corpus of Contemporary American English
COHA	Corpus of Historical American English
DDL	Data Driven Learning
EAP	English for Academic Purposes
EFL	English as a Foreign Language
ELISA	English Language Interview Corpus as a Second-Language Application
ELT	English Language Teaching
ESP	English for Special Purposes
ESL	English as a Second Language
L1	First Language Speaker
L2	Second Language Speaker
L3	Third (or Other) Language Speaker
MICASE	Michigan Corpus of Academic Spoken English
MICUSP	Michigan Corpus of Upper-Level Student Papers
SEEC	Student Engineering English Corpus
SLA	Second Language Acquisition
TESOL	Teaching English to Speakers of Other Languages

ACKNOWLEDGEMENTS

It brings me great joy to say that I could not have accomplished this thesis alone, and I owe a great debt of gratitude to those who invested their time, energy, and expertise as I found my way—sometimes stumbling and sometimes sprinting—to the finish line.

Firstly, I must extend my many thanks to Dr. Robert Poole, my thesis committee chair, corpus-linguistics mentor, and biggest cheerleader for this project. Your patience, guidance, and wisdom were immeasurable, and I count myself lucky to have been able to work alongside you from start to finish. With every challenge I faced, you kindly led me through it, offering critiques, encouragement, and direction when I needed them most. A thousand times, thank you.

I would also like to acknowledge Dr. Isabelle Drewelow and Dr. Dorothy Worden-Chambers, who graciously served on my thesis committee. I am grateful to you both for your time and dedication to help make this thesis the best that it could be.

Finally, I would like to thank my community here at the University of Alabama: Alex, Gozde, Katie, Ally, Haley, Kassie, and Emily. You all may never fully understand how much your constant support and love meant to me, but I rejoice in the knowledge that I am here—and this is finished—because of you.

CONTENTS

ABSTRACT	ii
DEDICATION	iii
LIST OF ABBREVIATIONS	iv
ACKNOWLEDGEMENTS	v
LIST OF TABLES	ix
LIST OF FIGURES	x
AN INTRODUCTION TO CORPUS ASSISTED LANGUAGE LEARNING	1
Corpus Linguistics	2
What are corpora?	3
Corpus linguistics: A method or theory?	5
Corpus Use in Applied Linguistics	6
Corpus use in language teaching and learning	7
Inductive and deductive methodology	11
CALL in Language Learning Classrooms	13
Potential impediments to CALL in language learning classrooms	14
CALL in Action	17
English for special or academic purposes	19

English for secondary contexts	21
English in primary or young learner contexts.....	23
CALL and Teacher Attitudes.....	26
Corpus instruction in language teacher education	27
Teacher attitudes concerning CALL in the language classroom	32
The Need for an Exploration of Teacher Attitudes for CALL with Young Learners.....	35
METHODOLOGY	37
Designing the Lesson Plans for Young Learners.....	39
Corpus selection.....	39
The non-corpus lessons.....	40
The corpus-assisted lessons	40
Survey and Analysis	43
Author's Positionality	44
Participant Demographics	45
RESULTS AND DISCUSSION	48
Pre-service Teachers' Attitudes Towards CALL.....	49
Effectiveness of CALL	49
Attitudes: Positive.....	50
Attitudes: Negative	51
Evaluation of Effectiveness and Value of CALL	52

Attitudes: Positive	52
Attitudes: Neutral.....	58
Attitudes: Negative	59
Pre-service Teachers' Attitudes Towards CALL with Young Learners.....	62
Attitudes: Positive.....	62
Attitudes: Negative	65
CONCLUSION.....	67
Implications.....	67
Limitations	71
Further Research	72
REFERENCES	73
APPENDIX A: LESSON PLANS FOR CONTROL GROUP.....	81
APPENDIX B: STUDENT HANDOUTS FOR CONTROL GROUP	88
APPENDIX C: POWERPOINT PRESENTATIONS FOR CONTROL GROUP	97
APPENDIX D: LESSON PLANS FOR CORPUS-ACTIVITY GROUP.....	106
APPENDIX E: STUDENT HANDOUTS FOR CORPUS-ACTIVITY GROUP	114
APPENDIX F: POWERPOINT PRESENTATIONS FOR CORPUS-ACTIVITY GROUP	122
APPENDIX G: FLASHCARDS AND SUPPLEMENTAL MATERIALS FOR LESSONS	143
APPENDIX H: PRE-SERVICE INSTRUCTOR SURVEY	150
APPENDIX I: IRB CERTIFICATION	161

LIST OF TABLES

1. Table 1: Coursework Where Pre-service Teachers Were Exposed to Corpus-study for Language Learning	45
2. Table 2: Corpus Tools with which Pre-service Teachers Are Familiar.....	46

LIST OF FIGURES

1. Figure 1: Thematic Coding System 47

AN INTRODUCTION TO CORPUS ASSISTED LANGUAGE LEARNING

Within the field of Second Language Acquisition (SLA), Corpus-Assisted Language Learning (CALL)¹ has been explored through a rich and diverse range of literature. In fact, meta-analyses of CALL (Boulton & Cobb, 2017; Cobb & Boulton, 2015; Mizumoto & Chujo, 2015) highlight the advantages of CALL, particularly in its ability to maintain the authenticity of the language by providing learners with contextualized, real-life examples of language use. Throughout much of the literature, CALL methodologies have established themselves as successful through their many affordances, especially within tertiary and secondary language learning classrooms (Boulton & Cobb, 2017). Despite these achievements in tertiary and secondary contexts, the application of CALL to the language learning classrooms of young learners remains underexplored, perhaps because some scholars and teachers may feel that CALL may prove overwhelming for both young learner populations and their instructors (Chen & Flowerdew, 2018; MacGregor, 2014). The hurdles of performing research with minors may further discourage the pursuit of CALL with young learners of English. However, the few studies that do apply CALL principles in young learner classrooms provide encouraging evidence that research into the use of CALL with young learners could reveal useful pedagogical affordances, channeling the success CALL has found in many contexts into the classrooms of young language learners.

¹ The author would like to acknowledge that the acronym CALL is established within the field to denote “computer-assisted language learning,” of which corpus-assisted language learning is a part. In an effort to be efficient, however, this paper will use CALL to refer only to “corpus-assisted language learning.”

This thesis project aims to further the research of CALL with young learners of English through surveying pre-service teachers about their attitudes and expectations concerning young learners and CALL. Young learners and their abilities are sometimes underestimated, such as in language education when teachers need to navigate low language proficiency in tandem with student ages, sometimes leading to an almost dismissive treatment of this context within the literature. This project seeks to explore existing assumptions and attitudes by developing and evaluating language learning resources informed by CALL pedagogy. The original goal for this research study was to use these resources with young learners using a direct approach to implement these tools in the classroom (Römer, 2012) and gather quantitative and qualitative data on the approach's effectiveness. However, due to complications in working with young learners caused by the COVID-19 pandemic, this research project will instead interview pre-service instructors to evaluate their attitudes and expectations regarding CALL applications for young learners. Before exploring CALL for a younger learner context, however, it is important to fully understand CALL and how corpus-assisted pedagogy functions inside a language learner classroom. The following introduction will begin by exploring corpus linguistics, its applications to language learning, and CALL as it has been used in the language learning field, illustrating its affordances in varying contexts before applying those affordances to a young learner context.

Corpus Linguistics

Corpus linguistics for pedagogical aims can trace its roots back to the 1920's with the work of Fries and his concordancing of *will* and *shall* within Shakespeare's works. In the contemporary age, however, hand-delivered concordances have developed into vast digital corpora. This evolution created the important and expanding area of applied linguistics which Tognini-Bonelli and Sinclair (2006) delineate into three separate 'generations' of corpora

progress. The first generation spans the 1960s and 1970s where researchers learned how to build and maintain corpora containing up to a million words. Within this generation are the works of Kucera and Francis and the Brown Corpus (Kučera & Francis, 1967), which was working in direct opposition to Chomskyan linguistics. While the Chomskyan formalist approaches regarded intuition of a native speaker as all that was necessary to fully understand a language (Canagarajah, 1999; Mahboob, 2005), the theories of functional grammar (Halliday, 2001; Halliday, 1990; Halliday & Matthiessen, 2013), communicative competence (Hymes, 1972, 1992), and speech acts (Austin, 1973) paved the way for functionalist approaches which opposed Chomskyan formalism. Kucera, Francis, and other functional linguists at the time believed that accessing the authentic data found in corpora could distance researchers from their own intuitions to understand how language is actually being used by its speakers (Flowerdew, 2012; McCarthy & O'Keeffe, 2012; Reinhardt, 2010). The second generation spans the 1980s and 1990s where technologies such as scanners and computer typesetting allowed corpora to expand to 20 million words. The third generation started in the 2000s, where access to the internet and expansion in computer processing power have allowed corpora to hold an almost unlimited amount of words (McCarthy & O'Keeffe, 2012; Tognini-Bonelli, 2001; Tognini-Bonelli & Sinclair, 2006). These generations of expansion have led to today's circumstances where language corpora are able to accomplish many different purposes and afford linguistic researchers many different tools for language study.

What are corpora? A corpus is a principled collection of authentic language data which has occurred naturally and within context and is meticulously compiled for a defined purpose, usually to illustrate a particular language variety. These collections are usually representative of varying language contexts, and they are composed through principled methods. A corpus is

“representative” in that it is meant to be a sample that “represents” the larger whole, such as a larger discourse domain or even language as a whole. A corpus is “principled” in that the data that is collected is chosen with a designed purpose (Egbert et al., 2022). The language data can either be written or spoken, and spoken data can be presented as audio clips, video clips, or transcripts of the spoken data (Flowerdew, 2012; Liu & Lei, 2017; J. Sinclair, 2005; Tognini-Bonelli, 2001). These language databases are stored electronically and often annotated (such as with parts of speech tags or semantic tags), in a machine-readable format which allows researchers to access large amounts of language data in context through the affordances—the opportunities for making meaning through different functionality (Boulton & Leńko-Szymańska, 2015)—provided by the digital systems which house the data (Flowerdew, 2012). Another factor which defines a language corpus is its size, with most general-purpose corpora containing 100 million to more than several billion words in order to reflect the creativity and variety of naturally occurring language use. Smaller, more specialized corpora do exist, however, usually containing 50,000 to 250,000 words within a particular context or genre (Flowerdew, 2012; Sinclair & Sinclair, 1991). There are even some researchers (Gatto, 2020; Kilgarriff & Grefenstette, 2003) who argue that the internet itself could be considered a language corpus on the grounds that the web serves as a collection of language use that can be analyzed for a specific purpose (Flowerdew, 2012). One of the strongest oppositions to the web-as-corpus consideration argues that since the language data on the web is not collected in a principled manner from a linguistic perspective, it therefore cannot be considered a corpus (Sinclair, 2005).

Despite their many affordances to both language study and language learning—the latter of which will be explored throughout this paper—corpora are not without their limitations. For example, as corpora are housed in digital spaces, they are limited by the software tools used to

access them (Widdowson, 2000). Corpora also are able to deliver vast amounts of language data from across many contexts (Flowerdew, 2012), but the data itself is often presented in a decontextualized way, appearing in concordances that strip away the situations which frame the language use (Widdowson, 2000). Corpora, by nature, are limited by their size, and even the largest databases can never be fully representative of language use in all contexts (Flowerdew, 2012).

Corpus linguistics: A method or theory? Corpus linguistics has been described in varying ways: as a tool, framework, discipline, paradigm—but most of the conversation can be distilled into two schools which view corpus linguistics either as a method of practice or as a linguistic theory (Gries, 2010; Hardie & McEnery, 2010). Some scholars interpret this binary as a continuum of corpus-driven to corpus-based (Gries, 2010; Hardie & McEnery, 2010; Tognini-Bonelli, 2001), but before exploring the nuances of terms like corpus-based, corpus-informed, corpus-driven, corpus-aided, and corpus-assisted and their application to pedagogy, it is important to first understand the distinctions and trajectories of the methodologist tradition and the neo-Firthian tradition (Hardie & McEnery, 2010).

Corpus linguistics as theory is rooted in the work of scholars like J. R. Firth at the University of Birmingham in the early 1970's, continuing through the work of John Sinclair (Sinclair, 1990, 2005; Sinclair & Mauranen, 2006; Sinclair & Sinclair, 1991; Tognini-Bonelli & Sinclair, 2006). Corpus linguistics as theory views corpus linguistics as a sub-field or theory on its own (Hardie & McEnery, 2010; McCarthy & O'Keeffe, 2012; Tognini-Bonelli, 2001). This neo-Firthian approach believes that there is no role in corpus linguistics for anything external than what arises from the corpus data itself, including theories of language or predetermined descriptions of linguistic items (Hardie & McEnery, 2010). Within this perspective, corpus-

driven linguists view corpora as a way to (re)build theory and reject applying pre-corpus annotations or any other language theory (Gries, 2010). Such a positioning is ambitious, and scholars such as Gries (2010) have observed that the actuation of corpus-as-theory is nearly impossible—or at least not as possible as corpus-as-theory linguists claim—with the potential exception of Sinclair and Mauranen’s (2006) *Linear Unit Grammar* which documents the meaning-making process starting with raw text and analyzing it in different situations until it begins to shape its own form of meaning.

On the other side of the continuum lies the corpus-as-method approach, a tradition which emerged from the Survey of English Language approach in the late 1950s starting at the University College of London before expanding to other European universities and beyond (Hardie & McEnery, 2010). For corpus-as-methodology, corpus techniques are viewed as tools or methods that can be manipulated to fit within varying theoretical frameworks depending on the needs of the researcher and the issue being researched, *basing* their research on corpus data and applying exterior theories to solve problems and answer questions (Gries, 2010; Hardie & McEnery, 2010). It is from this perspective which Liu and Lei (2017) provide their definition of corpus linguistics as a “very principled approach based on several important linguistic theories and assumptions about language” (p. 1). It can be helpful to think of corpus linguistics as a method *informed* by theory, in which the linguistic theory supports the understanding of corpus data, and vice versa.

Corpus Use in Applied Linguistics

While studying corpora for corpora’s sake can provide fruitful insight into the nature of language use, only when corpora are seen as *tools* and *methods* can they be applied to the greater field of linguistics, providing what McCarthy & O’Keeffe (2012) describe as “a better *means* of

doing things” (p. 7, emphasis in original). Corpus linguistics finds itself permeating many areas of the field, being used to answer a range of research questions in areas such as discourse analysis (O’Keeffe, 2006), forensic linguistics (Cotteril, 2012), sociolinguistics (Andersen, 2012), pragmatics (McCarthy & Carter, 2004; Schauer & Adolphs, 2006), literary studies (Amador-Moreno, 2012; McIntyre & Walker, 2012), translations (Kübler & Aston, 2012), speech technology (Cooper et al., 2019), and even business and healthcare communications (McCarthy & Handford, 2004; Atkins & Harvey, 2012). While much time could be spent exploring the many different facets of influence corpus linguistics has on the field at large, the following sections will focus upon corpus use within a pedagogical context, specifically in language teaching and learning.

Corpus use in language teaching and learning. From data-driven learning to corpus-assisted learning to corpus-informed textbook and class materials, corpus use in language teaching and learning can take many forms and provide many affordances to learners, teachers, and curriculum creators. The following section will explore the range of corpus use in the context of language learning in order to more clearly understand its applications.

Hard and soft approaches. One of the central issues in the literature asks *to what extent* corpus data can or should enact influence over the language learning context of the field (Flowerdew, 2012). In response to this question, Cook (1998) provides the field with the *hard* and *soft* continuum for approaches. A hard approach sees itself as corpus-bound or corpus-driven and a soft approach sees itself as corpus-based or corpus-informed (Flowerdew, 2012). Scholars such as Widdowson (2000) and Cook (1998) warn against too hard of an approach to the application of corpus data to language learning, expressing the concern for an over-reliance on corpus data such as frequency interfering with pedagogic relevance. For example, these authors

would insist some grammatical items such as phrasal verbs should still be taught because of their salience despite their low frequency in general corpora (Cook, 1998; Flowerdew, 2012; Widdowson, 2000). In response to the *hard* approach, Gabrielatos (2005) coins the term *corpus worship* to describe this over-emphasis of the principles of corpus linguistics such as frequency and authenticity in language learning classrooms, where it is often forgotten that corpora can never fully paint the entire picture of language use because they are in and of themselves *samples* of language use (Gabrielatos, 2005; Wicher, 2020).

Indirect and direct methods. Diving deeper into the application of corpus linguistics to language learning, another lens that can be used to interpret CALL methodologies is the continuum of *indirect* to *direct* methods (Römer, 2012). Indirect approaches influence teaching materials, where researchers, material writers, and curriculum publishers use a hands-on approach to corpus data to shape the products they create for language learning classrooms. The corpus influence can create materials such as dictionaries, grammars, or even textbook series, such as McCarthy et al.'s (2005) *Touchstone* series (Flowerdew, 2012; Römer, 2012). The majority of language learning textbooks are not corpus-based, however, as shown by Römer (2004) and Meunier & Granger (2008) who compare the British National Corpus (2001) with popular textbooks. Language textbooks are often full of contrived sentences and phrases, used to illustrate different linguistic structures, but corpus linguists argue for the incorporation of authentic language which can be provided by corpus data. Although some scholars such as Shortall (2007) and Cook (2001) argue *for* the use of contrived sentences in textbooks to allow for the exaggeration of particular language features—allowing for a salience which may not be possible through corpus data—most corpus linguists believe that exposure to real language data

is more beneficial for the language learner—as will be continued to be explored through this section (Flowerdew, 2012; Römer, 2012).

On the other side of the continuum, there are the *direct* methods of language learning, where corpus influence enters the classroom, providing a hands-on experience for both teachers and learners (Flowerdew, 2012; Römer, 2012). Data-driven learning, or DDL, is an example of one of the direct applications of corpus data to language learning and teaching. Crosthwaite (2020) defines DDL as

a pedagogical approach where direct learner engagement with corpus data in the form of either printed materials or learner-led hands-on corpus consultation using corpus tools allows for students to learn and internalize statistical and contextual information about language in use. (p. 3)

The term ‘data-driven learning’ was first introduced by Johns (1994) to explain how language learners could take on the role of language detectives and search for meaning in the clues of language data itself (Boulton, 2012). Rather than relying on often arbitrary and contrived textbook examples of language use, Johns (1994) advocates for language students to have access to real-life language data found in language corpora. DDL was thought to be a revolutionary concept in language teaching, with many corpus-use advocates such as Sinclair, Stubbs, and Johns expecting the methodology of DDL to take the field of language teaching by storm (Reinhardt, 2010). This did not end up being the case, however, as the enthusiasm of a DDL-informed takeover gave way to favor softer applications such as corpus-assisted or corpus-aided approaches to language teaching.

Within the sphere of language teaching, it is worth exploring the nuances between loaded phrases such as corpus-based and corpus-assisted. Though occasionally used interchangeably,

the list of corpus-bound, corpus-based, corpus-driven, corpus-informed, corpus-influenced, corpus-aided, and corpus-assisted all have important distinctions when applied to pedagogical contexts. These terms also have important distinctions within linguistic methodology, but because this project focuses on pedagogical applications, this section will explore the more relevant applications. To start from the *hard* approach side of the continuum, corpus-driven methodologies include DDL where corpus data are the *driving* force of the classroom model. This approach has been met with concern from the field of SLA as a whole, because it requires intense training on behalf of the teachers and their students. Corpus-bound and corpus-based approaches to language teaching carry with them a similar *hard* approach, where all instruction is necessarily bound to corpus data, allowing only for the teaching of what appears in the data. A *softer* approach would include terms like corpus-assisted, corpus-influenced, and corpus-informed approaches to language teaching, where language teaching finds itself being supported by corpus data. In this approach, students may still interact with corpus data in class, but there is not such a strict adherence to a corpus-only approach (Cook, 1998; Flowerdew, 2012; Reinhardt, 2010). Even softer are the terms corpus-aided and corpus-assisted applications of language teaching, terms which many in the field have turned to in more recent applications. Corpus-aided and corpus-assisted approaches allow for language instructors to use corpus data to help inform how they teach, while supplementing and complementing existing pedagogies. If the revolutionary calls of DDL and corpus-driven approaches are on one end of the spectrum, corpus-aided and corpus-assisted forms of language teaching are at the other, allowing instructors to integrate corpus information into their classrooms without replacing all other pedagogical tools (Reinhardt, 2010). More details will be provided later in this paper, but the lessons designed for this project implement a CALL approach to language teaching for young

learners, using corpus data to inform the way the lessons for a young learner context are designed while also incorporating the researcher/instructor's informed eclectic approach to language teaching.

Inductive and deductive methodology. CALL allows learners to engage with corpus data through corpus consultation or instructor-mediated printed materials (Crosthwaite, 2020), providing an inductive approach to language learning where students take responsibility for recognizing language patterns (Crosthwaite, 2020; Chen & Flowerdew, 2018). While CALL does seem to lean towards a more inductive approach to language learning, it is only one side of the inductive and deductive spectrum. An example of the further side of inductive CALL is Bernardini's (2002, 2004) view of 'learner-as-researcher' which asks for students to perform challenging learning through induction, but this extreme has faced pushback because it is viewed as too demanding on students, especially at varying proficiency levels (Flowerdew, 2012; Kennedy & Miceli, 2010).

Many in the field do see CALL as an inductive practice, but would see it as falling further along the spectrum than Bernardini's (2002, 2004) approach. Johns' (1990) imagined role of language learners as detectives illustrates clearly the discovery-based nature of DDL in particular and CALL as a whole. Instead of memorizing language "rules" handed to them by an instructor, learners are given data with which to discover their own rules, relying on SLA mainstays such as *pattern recognition* and *noticing* (Flowerdew 2015). Linguistic knowledge is constructed by learners through the recognition of patterns gained through experiencing those patterns in use (Crosthwaite, 2020). Providing students with access to corpus data allows students to interact with naturally occurring language examples so that they can recognize these patterns on their own or with the guidance of their instructor. Students in CALL classrooms are encouraged to sift

through the data and discover the answers for themselves, taking on responsibility and engaging in higher levels of student autonomy in the classroom (Chen & Flowerdew, 2018). This discovery-based, inductive approach relies on students to *notice* these patterns, which can either be entirely student-initiated or they can be teacher-directed (Flowerdew, 2015).

For some members of the language teaching community, however, CALL should not be entirely inductive alone (Johansson, 2009). Large corpora and the tools used to access them may prove overwhelming to even more advanced learners without at least some guidance and pedagogical mediation by the instructor (Johansson, 2009; Chen & Flowerdew, 2018; Kim, 2019). A truly inductive approach to CALL would seem to align itself with implicit methods of language learning, but the implicit/explicit binary approach to language learning is too simple for understanding CALL (Johansson, 2009). To reconcile this tension, scholars such as Kim (2019), Johansson (2009), and Wicher (2020) suggest that language instructors perform *pedagogical mediation* which allows for a *guided inductive* approach—supporting deductive and inductive methods to teach language. This pedagogical mediation allows instructors to modify corpus data so that it meets the individual needs of the students (Kim, 2019; Johansson, 2009). Instructors can guide their students through the use of corpus data, still allowing for the discovery-based approach, while also mitigating the risk of students becoming overwhelmed with the work.

Pedagogical mediation can look like many things (Wicher, 2020; Flowerdew 2008; Macgregor, 2014; Kim, 2019), such as reducing the time that students interact with corpus data to ten to twenty minutes for each lesson. This contained time frame will help students avoid losing their concentration or becoming overwhelmed (Flowerdew, 2008). Some instructors may find it helpful to create paper handouts of concordances to save their students the difficulties of directly accessing the corpora and their tools (Boulton & Cobb, 2017), but meta-analyses of the

current CALL literature show that, in some contexts, CALL might be most effectively realized when learners are taught how to use language corpora in a hands-on way (Boulton & Cobb, 2017). Printed worksheets provide corpus competence and familiarity while also allowing teachers to sift through the data and select helpful concordance lines. However, this mediation has led some to question the authenticity of the language if it has been influenced or decontextualized by the instructor (Flowerdew, 2012; Widdowson, 2000). The pen and paper approach also does not allow the same level of autonomy as the corpus-driven approach which allows students to browse the corpus themselves with their own queries, but this approach can often be overwhelming, especially for lower-level proficiencies (Boulton & Cobb, 2017; Flowerdew, 2012).

CALL in Language Learning Classrooms

Perhaps one of the most lauded advantages of corpus use is the access it provides to instances of naturally occurring language (Boulton & Cobb, 2017; Crosthwaite, 2020; Flowerdew, 2015; MacGregor, 2014). Rather than introducing students to contrived, textbook examples of language (Flowerdew, 2015), corpus use in the classroom allows students to interact with authentic language data (Boulton & Cobb, 2017; Crosthwaite, 2020; Flowerdew, 2015). Instructors and students alike do not need to rely on intuition when understanding language structures and meaning because they have access to naturally occurring language data upon which they can rely to build their language systems. Other advantages to CALL in the classroom include the maintaining of the authenticity of language use, helping learners know which structures and vocabulary are worth knowing and allowing for pattern recognition (Boulton & Cobb, 2017). CALL also allows for a lexico-grammatical approach to language learning rather than a more traditional approach which separates grammar and lexis into separate lessons

(Flowerdew, 2015). Corpus data has revealed how words link themselves with grammatical structures in ways that blur the lines between lexicon and grammar, so CALL approaches allow learners to acquire these language features in tandem rather than as separate entities (Flowerdew, 2012, 2015; Reinhardt, 2010).

Potential impediments to CALL in language learning classrooms. Much of the research and studies which have included a CALL approach have been carried out within tertiary contexts (Boulton & Vyatkina, 2021; Crosthwaite, 2020; Flowerdew, 2012). The research has seemed to be tied to this context because of the perceived difficulties CALL practices present to varying proficiencies. This section will explore some of the potential impediments, concerns, and disadvantages of CALL that have been presented.

For one, the interface of corpora can be perceived to be complicated or attempt to serve either the teacher or the researcher (Braun, 2007; Kosem & Krishnamurthy, 2007; Meunier & Granger, 2008; Römer, 2006). In-service teachers can feel intimidated to use corpora in their language classrooms (Crosthwaite, 2020; Poole, 2020), and perhaps one of the most common complaints about CALL is that the CALL approach is time consuming for both the students and the instructors (Boulton & Cobb, 2017; Poole, 2020). Instructors express concern for the time it takes to prepare CALL activities, the time these activities take in class, and the time that these activities would seem to take away from other pedagogical activities (Poole, 2020). Instructors require a considerable time investment to be trained in CALL pedagogy and how to apply it to their classrooms (Boulton, 2012; Braun, 2007; Poole, 2020). It takes time for instructors to design CALL language lessons which are appropriately suited to the needs of their students. The types of pedagogical mediation which scholars like Wicher (2020), Flowerdew (2009), MacGregor (2014), and Kim (2019) advocate for require instructors' out-of-class time to prepare

these lessons, whether simply to select which corpus data to use or the much more time-consuming task of creating paper hard copies of concordance information for their students—or any of the many other forms of mediation they can perform. In an effort to assist language instructors with this issue, books with ready-made corpus activities have been published (Frigial, 2018; Poole, 2018). However, even these ready-made activities face pushback as instructors express concern that pre-designed activities fail to encourage student autonomy for their own inquiries as well as raising concerns about the authenticity of the activities (Poole, 2020).

On the student side of concerns related to CALL, research suggests that it can take a significant amount of class time to properly train students how to interact and engage with corpus data, and when teachers lack training, students will feel that lack in their own training (Chen & Flowerdew, 2018; Frankenberg-Garcia, 2012; Sripicharn, 2010). Students may not immediately recognize the usefulness of the class time spent training on CALL when compared to a more traditional style of learning they may be more accustomed to. These student perceptions of wasted time can even be exacerbated by issues out of the instructor's control, such as slowing down instruction time for students who may have missed class or who forget their passwords (Poole, 2020). Much of the existing literature has responded to these critiques by providing evidence from research studies which illustrate that the time investment necessitated by CALL approaches is a reap-what-you-sow situation, yielding appropriate learning advantages in response to the amount of effort invested (examples of these studies will be discussed further in a later section).

Another major concern surrounding CALL and its implementation in classrooms in varying contexts is its reliance on technology (Boulton, 2009, 2012, 2017). While the issue of

access and technology seems to be a common concern surrounding CALL, there are several solutions which have been suggested which help work around some of these access issues. For example, technology access and issues surrounding internet access can be eliminated through the use of instructor-prepared printed handouts (Boulton, 2017). Access and training for specific corpora and concordances could potentially be replaced with the use of web-based search engines such as Google (Boulton, 2012) which many students have access to and use on a daily basis.

As mentioned before, CALL approaches allow instructors to invite their students to interact with authentic language data, pushing back against what Gabrielatos (2005) has called an “over-reliance on intuition that characterizes much of language teaching” (p. 19). Gabrielatos (2005) also warns those in language teaching, however, that the attitudes in the field could shift to the other extreme and create an over-reliance on corpus data—reflecting his idea of “corpus worship” (p. 19). In fact, corpus use and DDL approaches cannot fully untangle themselves from intuition because they rely on linguistic theory and intuition for the tagging and labeling conventions used to interpret corpus data (Gabrielatos, 2005; Sinclair, 2005). These intuitions are inescapable, especially from a Global Englishes perspective, which suggests that the corpora often used for language teaching and learning focus solely on English as an Inner Circle language (Kachru, 1990; Rose & Galloway, 2019) and fail to reflect the way that English is used by a variety of speakers for a variety of purposes in the rest of the world—for example: as a lingua franca (Rose & Galloway, 2019). As CALL attempts to push back the intuitive prescriptivism of more ‘traditional’ classroom teaching practices, it may inadvertently welcome a new type of prescriptivism and native speakerism into the language learning classroom.

Perhaps one of the more difficult perceived disadvantages is the perspective that CALL approaches can only be realized with advanced learners (Boulton & Cobb, 2017; Flowerdew, 2015). Because CALL is perceived to be time-consuming or overwhelming—among other things already mentioned in this section—language instructors may perceive CALL approaches with young learners as perhaps too daunting to attempt, as evidenced by the lack of literature exploring CALL in young learner contexts (Boulton & Cobb, 2017; Flowerdew, 2015; Macgregor, 2014; Kim, 2019; Crosthwaite, 2020). Practices such as corpus-based instruction and other methods of CALL will certainly look different in a young learner classroom compared to an adult ESL classroom or an EAP classroom or even a high school EFL classroom, but to dismiss using CALL in a young learner context entirely seems a disservice both to young learners and TESOL professionals (Crosthwaite & Stell, 2020). In fact, Poole (2020) found while surveying in-service teachers about corpus-assisted applications that many teachers realized that these practices were adaptable and easier than originally estimated. The following section will review the scholarship in the field of CALL, focusing first on the more popular contexts of advanced learners, moving to look at a few examples of CALL with secondary learners, before finally highlighting the gap in research where more research is needed which focuses on the application of CALL within the context of young learners. After highlighting this distinction and reviewing relevant literature, this study will then aim to build upon the foundations provided by other applications of CALL to bridge the gap between corpus linguistics and the teaching of English to young learners.

CALL in Action

If the use of CALL within different contexts was imagined as the watering of a garden, the water would cover first the larger, leafier plants such as the palms and ferns before the

leftover droplets would trickle slowly into the short grassy plants and the roots in the soil. The leaves of the bigger plants which seem to soak up the water more readily would represent tertiary contexts, particularly English for Academic Purposes (EAP) and other higher education arenas. The low grassy plants and the roots would be secondary contexts and primary contexts respectively, where some of the water has reached, but most of the nourishing attention has been given to the larger, more “impressive” plants. If the gardener were to try to vary the methods by which they watered their garden—perhaps implementing an in-ground irrigation system or gravity waterers—as well as using their garden hose, they might see renewed growth in all areas of their garden. By viewing CALL methods as the water which will help language learners grow in their language development, it could be imagined that just one way of “watering” would be effective for some plants and ineffective for others. Different contexts have different needs, and perhaps it is time for the gardeners to start turning their attention to developing applications for CALL within all contexts of language learning.

Several meta-analyses (Boulton & Cobb, 2017; Chen & Flowerdew, 2018; Mizumoto & Chujo, 2015) provide an overview of the literature surrounding CALL approaches to language learning. This literature review does not endeavor to recreate the work of these meta-analyses, but instead will highlight particular examples of CALL within three main contexts: English for special or academic purposes; secondary contexts; and primary or young learner contexts. This literature review will provide examples of both qualitative studies which evaluate attitudes and quantitative studies which identify effectiveness and efficiency of CALL in varying classroom contexts, remaining focused on qualities that could be translated into the teaching of young learner contexts.

English for special or academic purposes. One of the first realms in which CALL began to put down roots was within the teaching of English for special or academic purposes (ESP and EAP, respectively). Thurston and Candlin (1998) apply CALL to EAP by using the concordancing program *Microconcord* to introduce students to the most frequent and significant vocabulary items used in academic English. Rather than taking a field-specific or specialized approach, Thurston and Candlin (1998) endeavored to develop a range of teaching materials based on corpus data where vocabulary was associated with rhetorical functions within academic writing. In the study, students were provided with concordances and given the instructions to look at the key words and the words surrounding it, identify patterns of language surrounding the key words, practice the words without referring to the concordance lines, and draft a piece of writing which incorporates the key terms in an appropriate rhetorical function. According to those who participated in the study, the concordance lines and corpus-influenced gapping activities were thought to be helpful and a “very different and innovative approach” (Thurston & Candlin, 1998, p. 277) to expanding academic vocabulary. Some students did have a few reservations, however, especially with learning fatigue that may accompany over-exposure or over-reliance on work with concordance lines. The opportunities for greater lexical and grammatical awareness that their CALL approach provided help outweigh this concordance fatigue, and the authors encourage teachers to mediate how much and how deeply students interact with concordance lines to find the correct balance for their classroom community. Thurston and Candlin’s (1998) study can help to inform a CALL approach with young learners, especially by illustrating effective patterns students can use to engage with concordance lines.

Another representative example of a CALL approach to EAP would be Charles' (2007) study implementing corpus-informed methods to teach students rhetorical functions while

reconciling the top-down and bottom-up approaches to academic writing. In their article, Charles (2007) argues for a combination of a discourse analysis approach and a corpus-informed approach to provide students with an opportunity to understand rhetorical strategies used in graduate writing. In the corpus-informed tasks of this study, students did corpus searches to understand rhetorical patterns, such as making a concession using a sentence initial *while* paired with *may* or *seem* further along in the sentence. Students were then encouraged to look at expanded concordance lines to grasp a fuller picture of how these rhetorical patterns were accomplished, thus receiving a rich input that broadened their understanding. While discussing their results, Charles (2007) makes the concession that corpus work may be difficult with lower-level learners, and suggests that in the early stages of corpus work, teachers should enact more control over the searches. They argue that the advantages brought to students through discovery-based learning are not lost when teachers provide necessary interventions.

While Thurston and Candlin (1998) and Charles (2007) provide a representation of a more general approach to EAP, corpus-based language learning has also flourished in ESP, using specialized corpora to teach tertiary-context students skills for academic writing within their specific fields. For example, Weber (2001) asks their students to use concordance lines to identify structural and lexical items in formal legal essays. Students used concordance lines to identify the correlations between lexical patterns and rhetorical structures used in formal legal essays. Concordancing lines were also used to understand grammatical forms, such as clarifying the prepositions which follow *liable* or passive constructions. Weber (2001) argues that the exploration and acts of discovery through working with corpus data aided their students to writing linguistically and legally effective essays.

Mudraya (2006) provides the field with another example of a specialized approach to language instruction through corpus approaches, taking a corpus-based approach to teaching significant and frequent lexical items to engineering students. With a goal to aid students in the acquisition of *language prefabs*—or multi-word units and collocations—which are found in engineering textbooks, Mudraya (2006) develops concordance-based activities from the Student Engineering English Corpus (SEEC), created from English-language engineering textbooks. In the activities, students are provided with concordances which show lexical items in both a general and an engineering sense, so that students are given the opportunity to distinguish meaning between general and specialized vocabulary.

English for secondary contexts. Within the metaphor of the garden, secondary contexts represent the underwatered grassy plants that have bloomed slightly within the limited attention they have received. Limited research has been done exploring the applications of CALL to secondary contexts and teenage language has received little attention from scholars (Braun, 2007; Pérez-Paredes, 2020). This section will discuss the few studies that have been done in this context.

Braun (2007) investigates the conditions and challenges of applying CALL for the instruction of secondary learners. Using the English Language Interview Corpus as a Second-Language Application (ELISA), their study took place over four weeks and was based at a secondary school in Germany, working with 25 students from the ninth grade. Students were shown two interviews from ELISA, followed by discussions and corpus-assisted exploratory activities designed to match lexical and grammatical goals from the course's required textbook. The results of this case study revealed that the control group and the corpus group did not differ significantly from one another based on their overall proficiency. However, according to the data

collected, the corpus-assisted activities were more effective than the more traditional activities, echoing the results of tertiary-based CALL research. Students most struggled with interpreting meaning from concordances, but this could perhaps be because of the students' unfamiliarity with such activities (Braun, 2007). Braun's (2007) case study shows that although it can be challenging to implement CALL methods in secondary contexts, this approach can be accomplished with promising results as long as teachers are willing to build environments which support their students as they learn about and learn through corpus-based methods.

Another example of CALL in secondary contexts is provided by Soruç and Tekin (2017) as they apply CALL methods to vocabulary instruction at a boy's private high school in Uganda. 72 tenth-grade students were given corpus-based tasks such as working with concordance lines to determine meaning of new vocabulary elements. Using a one-way repeated measures ANOVA, the researchers were able to illustrate that both the control group and the corpus group significantly increased their scores from the pre-test to the post-test, and that learners in the corpus group performed better than those in the control group in the delayed post-test. According to the data collected in student interviews, the learners expressed that they felt the CALL activities were preferred because they increased student autonomy and responsibility, which are two key affordances of CALL (Bernardini, 2002, 2004). The discovery-based learning inherent in CALL places power in the hands of the students, asking them for their buy-in and rewarding them with autonomy in the classroom.

Szudarski (2020) explores the instruction of phraseology over seven weeks with 22 lower-level secondary EFL learners in Poland through two approaches: a traditional dictionary-based teaching and corpus-informed print-out-based teaching. Several expressions were selected from the PHRASE List (Martinez & Schmitt, 2012; Szudarski, 2020), which compiles 505

phrases that are often difficult for L2 learners to decode (e.g., “at all” or “take over”). According to the paired-samples t-test, the CALL group showed a significant increase in acquisition of these phrases while the dictionary group only approached significance. Several other statistical analyses were attempted as well, such as a one-way between-group ANOVA and a Tukey HSD test, and all revealed that the CALL group performed significantly better than the dictionary group when compared to the control group of traditional learning. The majority of the students shared favorable attitudes for the corpus-based exercises, especially because they promoted student-centered forms of instruction.

English in primary or young learner contexts. It has so far been established that CALL-informed practices in young learner contexts is under-researched, despite the positive results from the few studies which do exist (Crosthwaite & Stell, 2020). This field is narrowed even further as some of the few studies (Crosthwaite & Stell, 2020; Sealey & Thompson, 2004, 2007) which *do* apply CALL to a primary context, work only with L1 students and not with language learners. Wicher (2020) argues that one of the reasons for the gap in literature focusing on CALL and young learners is the lack of corpus resources designed specifically for the needs of young learners. The language of children and teenagers could be considered a specialized form of vocabulary, having its own distinct set of meanings, frequencies, and grammars that set itself apart from adult Englishes (MacGregor, 2014; Pérez-Paredes, 2020). ESP studies that utilize CALL methods (Mudraya, 2006; Weber, 2001) model for teachers ways that they could identify the specialized lexico-grammatical structures of young learner English and teach students an English that is most applicable to their own needs. Corpus data must also be simplified for younger learners (Braun, 2007; Flowerdew, 2012; Hirata, 2020; MacGregor, 2014; Wicher, 2020), and it may be this simplification which has proved difficult for researchers in this

field, not to mention the concern that simplified data may not equal authentic data—a key affordance of CALL (Bernardini, 2004). Despite these concerns, however, it seems logical, that a well-designed, young learner-facing corpus would not only be accessible to young learners but also engaging and valuable.

Macgregor (2014) creates a corpus specifically for young learners in their study when they create a specialized children's language corpus from course books, graded readers, and fairy tales that the students have read as part of their English curriculum. By comparing the vocabulary of their corpus of children's language with the Corpus of Contemporary American English (Davies, 2008-), the need for a more focused corpus for young learners of English is readily apparent. For their study, Macgregor (2014) observed 32 Japanese students learning conversational English in their primary and middle school classes. Students were separated by level according to how many years of prior English experience they had. More advanced students worked from their coursebooks *Let's Go 1, 2, or 3* and read graded adventure stories while younger students read from fairy tales. Macgregor created corpora for the students comprised of the texts that each group had read. Then, students completed seven activities designed around concordances and wordlists (Macgregor, 2014). Students were encouraged act as *Sherlock Holmes* (Johns, 1994; MacGregor, 2014) when working with the data to discover meaning of vocabulary words, fixed phrases, and grammatical patterns. The students were split on whether they considered the tasks to be easy or not, but the majority did find the corpus-based activities to be enjoyable. Within their Japanese context, students particularly liked the collaborative design of the DDL-informed activities and felt that the overall format was "approachable" (Macgregor, 2014, p. 133). Two drawbacks to Macgregor's study, however, are that the texts from which the corpora are formed are teaching texts and are possibly

“deauthenticized” and that the study does not collect any information as to whether the CALL approach and corpus methods implemented were any more or less effective than traditional teaching (Macgregor, 2014).

Macgregor (2014) expands their classroom activities to include both corpus-informed and direct corpus activities, and their findings suggested that children’s language corpora created relevant and enjoyable learning experiences for both the students and teachers. Kim (2019) builds from Macgregor’s (2014) ideas to provide some practical ways to implement effective corpus-use in the young learners’ classroom. This particular research design is also similar to Macgregor’s (2014) in that it enacts a qualitative approach to understand the perception of the participants through a semi-structured interview. Eighteen six-grade students and their three teachers at three different Korean elementary schools participated in an inductive approach to corpus-assisted activities, where the researcher designed activities from a targeted corpora for young learners based on children’s literature. The activities themselves went through pedagogical mediation, and students interacted with paper handouts of concordances. As a result of the interviews, Kim (2019) discovered that students found the corpus-assisted learning activities to be enjoyable, especially as they got to discover rules together with their peers, but they struggled with unfamiliar vocabulary they came across in the concordances. Teachers expressed that CALL instruction provided their students with authentic input examples which allowed students to discover patterns in language use. Teachers also commented that student proficiency levels influenced the ways they were able to participate and that they wished there was more guidance for teachers wanting to implement a CALL approach (Kim, 2019).

As scholars have noted (Boulton & Cobb, 2017; Braun, 2007; Crosthwaite, 2020; Kim, 2019; MacGregor, 2014), CALL applications have struggled to find footing within the young

learner context of language learning and instruction as evidenced by the gap in the literature. This literature review has explored several examples of effective applications of CALL in language classrooms in other contexts, seeking to establish CALL as an effective, efficient, and viable approach for language learning classrooms (Boulton & Cobb, 2017)—at least within tertiary education contexts (Braun, 2007; Crosthwaite, 2020). Secondary and young learner contexts remain relatively underexplored, despite the fact that the current generation of young learners are *digital natives*, a term which highlights the fluency young learners have with technology and the digital world (Crosthwaite, 2020; Gatto, 2020). The young learners of today grew up alongside technology, developing varying types of digital literacies. These young students are more technologically literate than previous generations, with many accessing technological spaces from increasingly early ages. While not every student has the same advantages, this generation—as a whole—is more than capable of understanding complicated digital tools such as corpora in a natural, intuitive way (Crosthwaite, 2020; Gatto, 2020; MacGregor, 2014). Scholars such as Macgregor (2014) argue that if children can be taught difficult math concepts from young ages—in many cases *excelling* at these mathematical challenges—then why should teachers not expect young learners to also embrace the challenge of corpus-based learning and the many opportunities for discovery that accompany it?

CALL and Teacher Attitudes

A common theme highlighted within the research surrounding the use of CALL methods in classrooms are concerns surrounding pre-, novice, and in-service teachers' attitudes and expectations about CALL pedagogy. Some of these concerns include the worry that teachers might not be adequately prepared to implement corpus-assisted pedagogy in their classrooms; that there would not be enough time for them to create corpus-assisted language learning

opportunities; and even that they (and their students) would be uninterested in CALL pedagogy (Boulton & Cobb, 2017; Poole, 2020). These concerns have resulted in the need for qualitative research efforts that investigate teacher attitudes and expectations through interviews and surveys. This section will provide an overview of examples of these inquiries within the contexts of teacher training programs and within the implementation of CALL in language learning classrooms, while also highlighting the gap in the research surrounding teacher attitudes about the implementation of CALL with young learners.

Corpus instruction in language teacher education. An example of an exploration of teacher attitudes surrounding corpus instruction in language teacher education is Farr's (2008) investigation among 25 pre-service teachers pursuing their masters in ELT at the University of Limerick who attended between 2003 and 2005. Although a majority of the participants were Irish, other nationalities included American, Welsh, English, Polish, German, and Chinese, and all expressed that they had general experience of using computer technology in both their personal and professional purposes. The MA program includes a corpus linguistics component over two semesters, focusing on English grammar instruction, and a questionnaire was distributed during the second semester to understand teacher attitudes towards the corpus aspect of their program. The survey was separated into five sections: the first section was a series of scalable questions surrounding corpus-use in the classroom; the second section investigated the amount of time spent with corpora; the third section explored positive and negative attitudes towards corpus-use; the fourth section asked about corpus-use in their dissertations; and finally, the fifth section focused on their thoughts about corpus-use in their future teaching careers.

The results of the survey (Farr, 2008) were overall encouraging and supportive of the continuance to provide corpus linguistics education and training to pre-service teachers.

According to the study, some difficulties were identified, most of which revolved around technical challenges and software, but the more conceptual problems were solved within the academic year through practice and guidance. Another main concern was the time-to-benefit ratio, which is a common concern among these studies, as will be seen throughout this section. Despite these small drawbacks, the pre-service teachers who were interviewed shared a very positive disposition towards using corpora for language teaching and research based on their own enjoyment and the perceived benefits of doing so. The use of corpora for language learning and teaching raised pre-service teachers' appreciation of language systems and heightened their language awareness (Farr, 2008).

Breyer (2009) provides the field with another look into pre-service teachers' attitudes towards CALL approaches, and they stress that focusing on the role of the teacher during corpus-use in the classroom is the missing link between theoretical enthusiasm about the methods and concrete integration of CALL methodology into language classrooms. Breyer's (2009) study took place in 2005 in a methodology course within a four- to five-year teacher training program in Germany. Eighteen pre-service teachers of English as a foreign language aged 19-33 participated in the course, and all but one had no knowledge of corpus linguistics prior to taking this course. Throughout the semester, the pre-service teachers learned about corpus-based analysis, the different concordancing software, and how to integrate these into future language teaching classrooms. The data in this study was collected through teacher diaries, questionnaires, and other reflective essays, providing the qualitative data needed to analyze pre-service teachers' attitudes and expectations towards using CALL in the classroom.

The pre-service teachers Breyer (2009) surveyed highlighted some concerns about using corpora to teach language, especially as corpus data revealed to them that real language use did

not always follow the rules they had been taught themselves. Thinking back on their own time as language learners, several of the pre-service teachers shared concerns that language learners—especially beginners—need the “safe environment” (Breyer, 2009, p. 161) of defined rules so that they will not get overwhelmed. This type of concern was common among the pre-service teachers in this study, and it indicates that they worry about maintaining their authority in the future classroom if the real data provided in corpora is contrary to the rules they are asking their students to memorize. However, as the pre-service teachers continued on in the semester, they learned how to vary tasks in their approach to authentic texts in the classroom, as well as see the value in shifting towards student-centered classrooms as opposed to teacher-centered classrooms. The pre-service teachers worked to redefine their roles, and they recognized the value of CALL methodologies such as concordancing tools which would allow learners to explore language at their own pace. Other challenges which were discussed by these pre-service teachers include the difficulties in choice of appropriate corpus, the lack of control over the result of CALL activities, technical problems, and lack of ready-made CALL materials (Breyer, 2009).

Like Farr (2008) and Breyer (2009), Zareva (2017) also focuses their attention to pre-service teachers, but focuses not on corpus-assisted language teaching and learning but instead on pre-service teachers’ attitudes and recommendations concerning the integration of corpus study into a pre-existing course in a language teacher preparation program. Zareva (2017) chose to incorporate corpus training into a pre-existing English grammar course in the student teacher preparation program, where they sought to answer research questions probing teacher preparedness, teacher opinions towards corpus-study, difficulties, and overall course design. 21 pre-service teachers participated in this study, and all were between the ages of 22 and 60 while pursuing their master’s degrees in Applied Linguistics, Teacher Development, and Teacher

Education at a university in the United States. The grammar course was meticulously designed to optimize the amount of instruction, practice, and support so that the pre-service teachers would receive corpus training without sacrificing the principal course content. Throughout the semester, the pre-service teachers received corpus training which culminated in a final project where students investigated a grammatical feature through corpus investigation.

The results of Zareva's (2017) pre-service teacher surveys shared insightful pre-service teacher perceptions, attitudes, and recommendations concerning the integration of corpus training into their coursework. Prior to the study, participants reported that only nine pre-service teachers knew what a corpus was and only six had ever used corpora themselves. Despite this overall unfamiliarity, however, the pre-service teachers did share that they were favorably interested in learning how to use corpora for research and teaching, which was an encouraging amount of enthusiasm from a typical cohort of pre-service teachers. Based on the course's integration of corpus-study within the primary course content, the pre-service teachers reported that they felt they had received sufficient instruction, training, and support to complete corpus inquiries, revealing that the five class periods spread across the first ten weeks of the semester was a sufficient amount of time devoted to working with corpora. The pre-service teachers reported that they perceived a strong relationship between grammar instruction and corpus study, while acknowledging its usefulness for language teaching and learning as well as their own personal research efforts. While there were certainly some difficulties acknowledged, such as technical difficulties, student insecurities, and the need for more instructor-guided practice in the classroom, the pre-service teachers were positive about recommending the future integration of corpus instruction and corpus-study into this required training course.

While Farr (2008), Breyer (2009), and Zareva (2017) focus on corpus instruction at the level of pre-service and pre-service teachers, Chen et al. (2019) provide insight into the attitudes of in-service teachers who participate in corpus training for language teaching and learning. For this study, the researchers wanted to gain a better understanding of the in-service teachers' perception of CALL methodology; statistical correlations between the teachers' personal experience and their attitudes towards CALL; and the implications of providing in-service teachers with CALL workshops and CALL applications within language classrooms more generally. 63 in-service teachers from eight government-funded universities in Hong Kong participated in a three-hour workshop which introduced basic corpora concepts as well as instruction on how to use corpora for second-language academic writing. After the workshop, attendees were invited to complete a questionnaire to share their attitudes and perceptions surrounding CALL methodologies for English language teaching and learning.

Results from the questionnaire revealed that as the in-service teachers were introduced to CALL methodologies, they expressed a desire to implement the approach in their classrooms based on the affordances it provides for English language teaching and learning. Chen et al.'s (2019) investigation into correlations between the teachers' backgrounds and attitudes surrounding CALL provided some interesting findings as well. One finding was that teachers with less pre-existing knowledge about corpora found the tools to be more difficult to use—and vice versa. They also discovered that teachers who were more motivated for professional development and more interested in language teaching were more likely to say that they would be interested in implementing corpus-assisted language tools in their classrooms and to believe that their language students would find corpus-assisted activities enjoyable. Finally, the results also revealed that teachers who had more years of teaching experience were more likely to be

skeptical of CALL for language teaching and learning. Overall, this study illustrates the usefulness of CALL workshops for in-service teachers, and the authors argue that CALL practices should be finding their way into professional development opportunities both within pre-service teacher programs and in continued in-service teacher trainings (Chen et al., 2019).

Teacher attitudes concerning CALL in the language classroom. While the previously discussed articles in this section focused on teacher attitudes and expectations surrounding corpus instruction and training within the context of teacher training programs, this next section will review works which survey teacher attitudes regarding the implementation of CALL within the classroom of language learners. In their study, Çalışkan and Gönen (2018) focus on corpus-assisted language teaching and learning for vocabulary instruction. The study took place at a foreign language school of a state university in Turkey that offers intensive EFL courses divided by level of proficiency. Three EFL instructors who were part of the materials development team for the program were selected to participate in this study as part of the purposive sampling in the qualitative research design. The language instructors participated in a four-week training which focused on teaching about the use of corpora for language teaching, and qualitative data regarding their attitudes was gathered through instruments such as a semi-structured interview, reflective logs, and a questionnaire.

The results from Çalışkan and Gönen's (2018) participants provide interesting insight into how university EFL teachers think about CALL in their language classrooms, particularly when it comes to vocabulary instruction. Prior to the study, all three in-service teachers shared that they had no familiarity with corpus-study for language learning and teaching purposes, but through the training course they were given the opportunity to design and implement corpus-assisted vocabulary teaching materials for their language learning classrooms. The in-service

teachers expressed their appreciation for the training course and its direct applications to their own language learning classrooms, highlighting the positive results that can be fostered from providing corpus instruction and training to language teachers. When implementing their corpus-assisted vocabulary instruction materials in their classrooms, the participants noted that access to authentic language use heightened their language students' language awareness and critical thinking skills. The teachers were asked to provide feedback about challenges they faced, and their main concerns related to time, technical problems, and appropriacy of materials for both the level of the learner and the content of the course. Çalışkan and Gönen (2018) conclude with their findings in this study which indicate that—despite the benefits of CALL materials for vocabulary instruction—the difficulties out-weigh the benefits, and they advise that corpus-study become more prevalent among language teacher training, but not necessarily in language learning classrooms themselves.

Poole (2020) explores the attitudes and expectations of novice teachers concerning the integration of corpus-assisted language learning and teaching in an undergraduate writing course for multilingual students. Six writing instructors—who were all pursuing their master's degrees in TESOL and Applied Linguistics—responded to the initial survey, but only three volunteered to participate in this study and implement corpus-assisted activities into their writing classrooms. The novice teachers all attended a 60-minute overview session, led a 75-minute corpus training session for their students, and then integrated 4-6 corpus-assisted learning activities into their course content over the rest of the semester. The corpus training session and activities were all ready-made corpus activities selected by the instructors from *A Guide to Using Corpora for English Language Learners* (Poole, 2018), which is designed for both language learners and language instructors to implement corpus-aided instruction in the classroom. Data regarding the

instructors' experiences and attitudes towards CALL activities within this context was gathered through three anonymous surveys.

The first survey used in this study garnered feedback from both the participating instructors and the non-participating instructors. The three novice teachers who decided not to implement corpus-assisted activities into their writing classrooms did not express outright negative attitudes towards CALL methodology, but instead their responses reveal concerns about the time and workload involved in implementing what they viewed as replacement activities rather than supplemental activities which would support the primary course content of their writing classroom. It is important to note that these concerns were not concerns about effectiveness—as has been so often discussed in the previous literature surrounding these types of concerns. The three novice teachers who did participate in the study expressed positive attitudes towards the implementation of CALL practices in English language learning and teaching. Despite these generally positive attitudes, however, specific questions about their beliefs surrounding direct student interaction with corpora yielded less promising positions, expressing that their students might not be able to complete corpus searches on their own or see the benefit of corpus-study in the writing classroom. The instructors were concerned that the students' proficiency in their L2 may interfere with their ability to do corpus searches themselves as well as make it challenging to analyze the data. These instructors also discussed three other major concerns: time, curriculum fit, and difficulty. When it came to time concerns, teachers were worried about the time demands on the teacher, the time it would take up in class, and the time it would take away from other curriculum-based activities. Ready-made corpus activities helped with preparation time for the teachers, but there was a concern that these pre-made activities did not develop student autonomy to come up with their own inquiries. As novice

teachers of a multilingual writing class at a university, these instructors expressed that they felt certain pressures of curricular expectations, with a pre-determined syllabus which required their students to learn a range of writing skills such as drafting and peer review while also completing several essays throughout the semester. The instructors struggled to find ways to let corpus-assisted learning activities support these curricular goals rather than distract from them. The corpus-assisted activities were also sometimes perceived as too difficult for some students who might have a lower proficiency in the context of English academic writing (Poole, 2020).

The Need for an Exploration of Teacher Attitudes for CALL with Young Learners

The previous section has shown that exploring teacher attitudes and expectations surrounding the use of CALL methodologies for English language teaching and learning is a rich field of information even as it is a resource that has remained largely untapped. Investigating teacher attitudes surrounding CALL at all levels and contexts is an under-researched area (Breyer, 2009; Zareva, 2017). In fact, Breyer (2009) argues that focusing on the role of the teacher and their attitudes will be the key towards popularizing the use of CALL practices. The intersection of these two lines of inquiry—the investigation of teacher attitudes towards CALL and the use of CALL with young learners—is the driving force behind this research project. More research is needed for the implementation of CALL practices in young learner classrooms (Boulton & Cobb, 2017; Braun, 2007; Crosthwaite & Stell, 2020; Kim, 2019; MacGregor, 2014), and providing more insight into teacher attitudes towards CALL with young learners could be the missing element that might help corpus-assisted language learning and teaching practices to find their foothold within the context of young learners (Breyer, 2009). Therefore, this project seeks to develop corpus-assisted lesson plans designed for young learners and then survey pre-service language teachers to gain a deeper understanding of their perceptions, attitudes, and

expectations of CALL within the context of young learners. Through these methods, this project endeavors to explore the following research questions: 1) What are pre-service language teachers' general exposure to, perceptions of, and attitudes towards the use of corpora for language learning and teaching? 2) How did the pre-service teachers evaluate the effectiveness and value of the corpus-assisted activities for language learning which were designed for this project? and 3) What are the pre-service teachers' perceptions of, attitudes towards, and expectations concerning the implementation of CALL practices within the context of young learners?

METHODOLOGY

This research project seeks to create a research space to better understand teacher expectations and attitudes regarding CALL within the context of young learners of English. This section will describe the development of the traditional and corpus-assisted lesson plan sequences followed by an explanation of the pre-service language teacher interviews. Before discussing the design of the project, it may be helpful to first explore the original intentions and design for this study. Such a conversation will not only provide a better understanding for where this project did finally find itself, but it will also promote a higher level of transparency in research within the field, especially among research projects which have been affected—like this one has—by exterior circumstances such as the COVID-19 pandemic.

Inspired by calls in the field that highlight the need for research which evaluates the implementation of CALL methodology directly with young learners of English (Boulton & Cobb, 2017; Braun, 2007; Crosthwaite & Stell, 2020; Kim, 2019; MacGregor, 2014), this project originally aimed to do just that. According to the original design of this project, I had intended to recruit around twenty young learners of English between the ages of 7-12 to participate in a language learning opportunity that would implement corpus-assisted language methods directly with these students. I had previously worked as an EFL instructor at a public primary school in the north of France and was planning on recruiting some of my former students to participate in this language learning opportunity. The students would have been divided into two groups: a control group and a corpus-activity group. The control group would participate in lessons which

have been designed without corpus-informed methods. The corpus-activity group would participate in lessons that have been designed with corpus-assisted activities. Each group would participate in their sequence of three 45-minute language lessons (language lessons can be found in Appendices A and E and will also be discussed in further detail below) on the topic of “Going on Holiday.” Both the control sequence and the corpus-activity sequence would have the same learning goals and expected outcomes, only differently realized. The lessons would take place over Zoom, with myself serving as the instructor. Students would have also been asked to participate in an optional interview.

This project would have potentially contributed to the field’s current need for research into direct applications of CALL-informed instruction for young learners of English. During the recruitment process, it unfortunately became clear that the COVID-19 pandemic created unprecedeted circumstances that made working directly with the students impossible. Because of these complications and the inflexible timeline characteristic of a master’s thesis, the project pivoted to an investigation of pre-service language teachers’ attitudes and expectations surrounding CALL applications in young learner contexts. This conscious shift is still filling the research need for a better understanding of pre-service teacher’s attitudes about CALL applications, and according to Breyer (2009), teacher surveys are an imperative step to seeing the implementation of new research methods in the classroom. Guided by the teacher surveys explored in the literature review (Breyer, 2009; Çalışkan & Gönen, 2018; Chen et al., 2019; Farr, 2008; Poole, 2020; Zareva, 2017), the lessons—originally designed to be implemented in an online classroom space with young learners—were instead presented to pre-service language teachers. The participants were asked to review both sequences of lessons and their accompanying materials. Then, the pre-service teachers were asked to complete a Qualtrics

survey to investigate their attitudes and expectations surrounding the possibility of implementing CALL in language classrooms with young learners.

Designing the Lesson Plans for Young Learners

As previously mentioned, two sequences of three 45-minute lessons were developed as a part of this research project. Both sequences were built around the general topic of “Going on Holiday” and the main target feature was the acquisition of adjectives in English. Although the two sequences shared the same topics and expected student learning outcomes, both sequences were differently realized. One sequence was built without using CALL methods while the other was designed around corpus-assisted activities. The imagined context for these lessons would have been with L1 speakers of French learning English as a foreign language.

Corpus selection. A general corpus was selected to serve the needs of this project, particularly one that allowed for the focus on language use for children. The Oxford Children’s Corpus (Banerji et al., 2013)—a corpus of short stories written for and by children—would have been a perfect fit for these language lessons because it was a corpus which was dedicated to children’s language, a requirement called for by the literature in the field (Braun, 2007; Flowerdew, 2012; Hirata, 2020; MacGregor, 2014; Pérez-Paredes, 2020; Wicher, 2020). However, the OCC was not available publicly. Instead, the COCA (Davies, 2008-) was selected because of its accessibility and because of its sections. The COCA has eight main registers: television and movies; blogs; general web content; spoken discourse; fiction; magazines; newspapers; and academic writing. Some of the eight main registers can be further narrowed down to sub-registers, and corpus users can also limit their searches by dates. For this project, the sub-register of fiction: juvenile was used to access a smaller, more focused corpora that would fulfill the need for a corpus of children’s language. The corpus data was used to design the

corpus-assisted language lessons, and it was also used to inform the vocabulary that was selected for both lessons. To select the adjectives that would be used as vocabulary for both sequences of lessons, I used the COCA tools to create a keyword list of adjectives from the fiction: juvenile register of the corpora, and I selected examples from within the first 50 key adjectives that I thought would be relevant to the theme of “Going on Holiday.”

The non-corpus lessons. Of the two sequences of language lessons, one sequence was designed without corpus-assisted methods, while the other incorporated CALL activities. The non-corpus lessons were to be the “control” lessons which would have allowed for some statistical analysis about the effectiveness of the corpus-assisted activities. The control group lesson plans can be found in Appendix A, and their supplementary materials such as the student handouts and PowerPoint presentations can be found in Appendices B and C, respectively. These lessons were designed to reflect a “typical” language lesson that these students may experience, and I relied on my practical in-class teaching experiences with these students to design these lessons. By presenting the pre-service teachers with both the traditionally designed lessons and the corpus-assisted lessons, the pre-service teachers would be able to make meaningful comparisons between the two lesson sequences. These comparisons could allow for a better understanding of difficulty and efficacy of the corpus-assisted lessons, providing insight into the second and third research questions.

The corpus-assisted lessons. The second sequence of lessons designed for this project were the ones designed around corpus-assisted language activities. These corpus-assisted lesson plans can be found in Appendix D, and their supplementary materials such as the student handouts and PowerPoint presentations can be found in Appendices E and F, respectively. I have designed these activities for young learners specifically, and this section will spend some time to

talk about the choices that were made when developing these activities. Each activity is designed to integrate some key aspects of CALL—such as collocations, frequency, and concordancing—and present it to the young learners in a digestible way.

Lesson one for the corpus group includes a “Discovery Activity” where students are provided with a printed handout that included concordance data from the corpus. The students would be encouraged to become “language detectives” (Johns, 1994; MacGregor, 2014) and to think of the concordance lines as “clues” for them to solve a language mystery. The teacher would explain that the concordance data came from real life usage of English, and that these were sentences that English speakers had used—highlighting the CALL affordance of authenticity. As in Kim’s (2019) research study, the data which would be presented to students did undergo pedagogical mediation, having been selected from the concordance data because it related to the general theme of the lessons (“Going on Holiday”). The concordance data was also color-coded to direct the students’ attention to particular features of the language use. The nouns in the sentences were highlighted blue and the adjectives were highlighted green. This visual coding helped the students focus on important parts of the sentences, without being distracted by lexical items that they may not be familiar with. The students would be led through a discovery-based activity where they would be guided by the teacher by questions such as “what do you notice?” as the students identify the nouns, adjectives, and the grammatical placement of each in the sentences.

Lesson two includes two corpus-assisted language activities and a corpus-assisted language presentation. The first is the “Peek Behind the Curtain Activity,” which is an opportunity for the students to see firsthand the way the corpus could function. The purpose of this activity is to explain to the students that computers can help language learners better

understand a language, as well as introduce the students to concepts such as frequency and collocations. The teacher would share their computer screen with the students via the online classroom platform to allow the students to watch the corpus in action. The teacher would also warn the students that this activity may be difficult, but that they should not worry if they do not understand everything, to avoid overwhelming the students with difficult material. The text from the first three chapters of Harry Potter—something all the students would likely be familiar with—would be entered into the COCA’s text analysis tool. Then, the teacher would talk through how the computer can show the high and low frequency words, selecting a few to show that the program would then show more information such as collocates and definitions.

Following the “Peek Behind the Curtain” activity, there would be a presentation which would introduce the students to the concept of collocations using a PowerPoint. The presentation would introduce students to the idea of collocations through the concept of “word friendships.” The teacher would explain that words can have friends, too, because words often go together. The students and the teacher would then have the opportunity to explore such word friendships in both French and English. This presentation would lead directly into the next corpus activity, the “Collocate Guessing Game.” After being divided into teams, the students would be presented with a vocabulary word and then have to guess words (in French or in English) which they think would be “friends” with the vocabulary word. They could earn points by making correct guesses. The purpose of this activity is to guide students through thinking about the concepts of collocations and word associations. The collocates were found by using the COCA tools to search for adjectives +4 to the left and +4 to the right of the selected nouns.

Lesson three of the corpus activity lessons includes one corpus-assisted language activity, called “What’s the difference between...?” The purpose of this activity is to introduce the

students to lexico-grammatical concepts by focusing on the form and function relationship of near synonyms. Through a PowerPoint presentation and student handouts, the teacher would guide students as they once again become language detectives (Johns, 1994; MacGregor, 2014) to understand the difference between near synonyms such as “big” versus “tall” and “small” versus “short”. The activity will present students with pedagogically mediated (Kim 2019) data such as concordance lines and collocations so that students can gather evidence to write their own rules for when to use one word over the other. The concordance lines would be selected from the keyword in context searches, and the collocates would be found by searching for nouns +4 to the right of the selected adjective.

Survey and Analysis

The survey questions can be found in Appendix H, and the survey data was gathered anonymously through a Qualtrics survey distributed to the participants’ emails. Questions 1-9 on the survey were designed to gather some demographic information such as the pre-service teachers’ familiarity with corpus methodology or their level of teaching experience. Some of the questions were multiple choice questions which allowed for multiple answers, and these were designed to explore the participants’ opinions on the contexts CALL methods could be used in. Some of the questions were ranking questions, where participants were asked to rank the effectiveness of CALL in different contexts, with the first being the most effective and the last being the least effective. There were some questions that asked the participants to respond to statements using a Likert scale, where 1 indicated strongly disagree, 2 indicated disagree somewhat, 3 indicated neutral, 4 indicated agree somewhat, and 5 indicated strongly agree. There were also open-ended questions which were designed to elicit observations from the pre-service teachers which would reveal insights into their attitudes, expectations, and perceptions.

The data received in the survey responses was then analyzed using a coding-based methodological framework implementing a descriptive thematic analysis based in constructivist grounded theory methodology (Charmaz, 2017). Constructivist grounded theory methodology was selected for its exploratory and emergent nature, where findings could be discovered from first-hand evidence provided through the pre-service teacher surveys. Constructive grounded theory employs critical qualitative inquiry while also taking context into account, allowing for a centering of the participants and their perspectives (Charmaz, 2017). Reading through the responses, I allowed the themes to emerge organically, using an open coding system to categorize the responses according to the themes. After exploring these themes, I engaged in the construction of grounded theories that resulted from the pre-service teacher's responses about their attitudes and expectations regarding CALL methods with young learners.

Author's Positionality

Constructivist grounded theory methodology interrogates the data as well as the researching process and the researcher themselves, highlighting that “the perspectives underlying our questions matter” (Charmaz, 2017, p. 34). According to this model, it is important for me to interrogate my own positionality as a researcher because creating this awareness will allow for a more balanced and effective analysis of the data. I would consider myself to be a corpus advocate, especially within the sphere of language teaching and learning. Much of my language teaching experience has taken place in young learner EFL classrooms and tertiary ESL and EFL classrooms, and these experiences shape the way I approach this research. As I will discuss further in the following section, my master’s program includes a high level of corpus instruction for both research and language teaching, which provides the foundation on which this project is built. As I analyzed the survey data, I relied on the structure of constructivist grounded theory

methodology to continually challenge my own positionality to attempt to remain as objective in my reporting as possible.

Participant Demographics

To explore the three research questions in this study, pre-service language teachers were presented with both sequences of lessons along with all of the supplementary materials and then asked to participate in an anonymous survey to investigate their attitudes and expectations surrounding the use of CALL for young learners of English. An invitation was sent out through email to all of the graduate students who were in their second year of a two year master's program in TESOL and Applied Linguistics at a major public university in the south-eastern United States. Of the six pre-service teachers invited, four responded and agreed to participate in the project. For the sake of efficiency, the four pre-service teachers have been assigned the following pseudonyms for ease of reference: Kate, Jamie, Carlos, and Claire. They will all be referred to using the gender-neutral singular pronoun 'they.' As previously mentioned, the survey was accomplished anonymously, and these names have been assigned at random.

At the beginning of the survey (which is included in Appendix H), Kate, Jamie, Carlos, and Claire were asked to provide some information foregrounding their levels of experience and familiarity with corpora and corpus-assisted language teaching and learning. Kate, Jamie, and Carlos all shared that they had between two and three years of experience teaching language, and Claire shared that they had four to five years of language teaching experience. Kate and Jamie have experience with secondary, tertiary, and adult ESL or EFL contexts, and Carlos and Claire have experience in tertiary and adult ESL or EFL contexts. None of the four pre-service teachers reported that they had language teaching experience with young learners and primary contexts. All four have completed a TESOL Methods course as part of their graduate level coursework.

Kate, Carlos, and Claire have all completed training in corpus linguistics for language teaching, and Jamie shared that they have not completed any training in corpus linguistics, but that they are familiar with the concept. Table 1 lists the other graduate coursework the pre-service teachers have either completed or are currently in as a part of their master's program. Table 2 lists all of the corpus tools with which the pre-service teachers are familiar

Table 1

Coursework Where Pre-service Teachers Were Exposed to Corpus-study for Language Learning

Teachers	Coursework
Kate	TESOL Methods, Structure of English, Corpus Linguistics, and Discourse Analysis
Jamie	TESOL Methods and Structure of English
Carlos	Corpus Linguistics, Structure of English, Second Language Acquisition, and Introduction to Linguistics
Claire	Structure of English, Teaching Second Language Writing, Corpus Linguistics, and Computers and Writing

Table 2

Corpus Tools with which Pre-service Teachers Are Familiar

Teachers	Corpus Tools
Kate	COCA; AntConc (Anthony, 2022); TCSE: TED Corpus search engine (Hasebe, 2015); Loglikelihood calculator; Michigan Corpus of Academic Spoken English (MICASE) and Michigan Corpus of Upper-Level Student Papers (MICUSP)

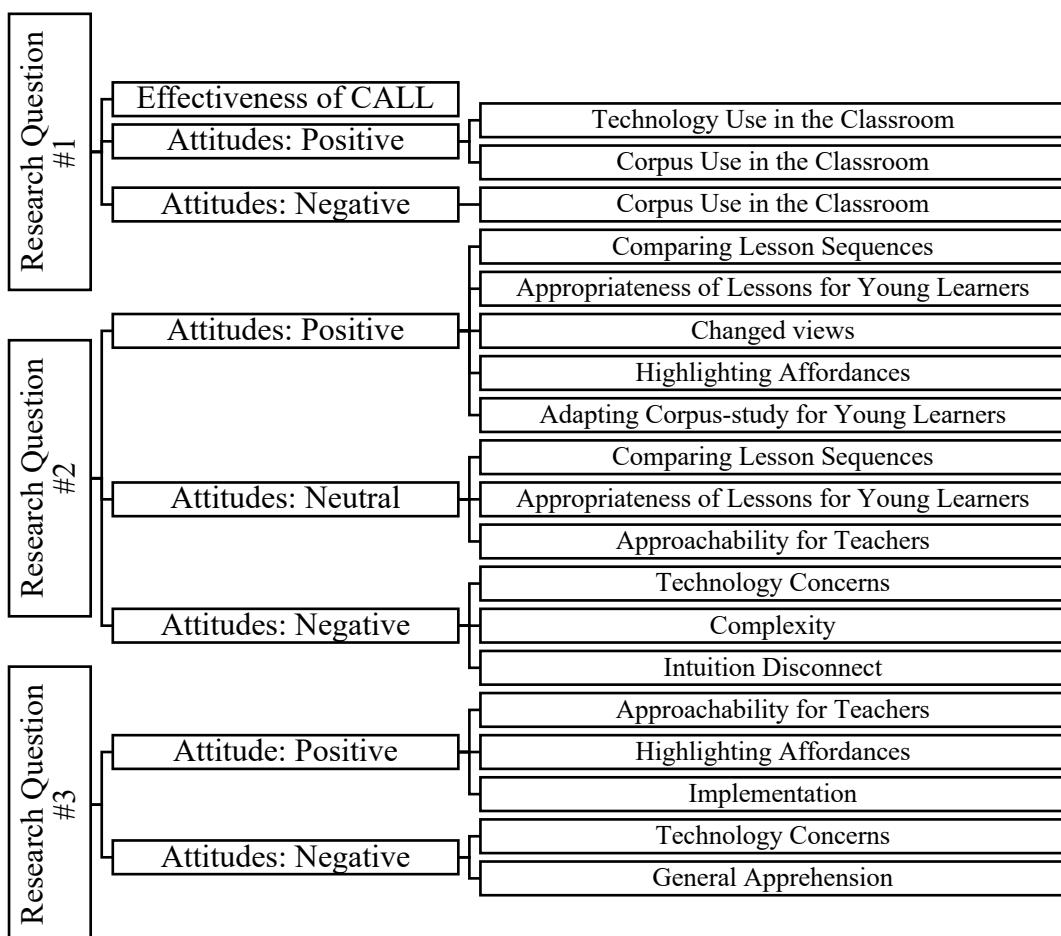
Jamie	COCA and AntConc
Carlos	AntConc; COCA; Corpus of Historical American English (COHA); BNC; TCSE: TED Corpus search engine
Claire	AntConc; COCA; COHA; BNC

RESULTS AND DISCUSSION

This chapter presents the findings from the pre-service teacher survey, organized into three main sections to answer each research question proposed for this study. The larger sections are further divided into subsections, describing the major themes which emerged while following the coding system developed through the descriptive thematic analysis based in grounded theory methodology. The main coding system which arose through the analysis is detailed in Figure 1.

Figure 1

Thematic Coding System



Pre-service Teachers' Attitudes Towards CALL

The first research question for this project is “What are pre-service language teachers’ general exposure to, perceptions of, and attitudes towards the use of corpora for language learning and teaching?” This section explores Kate, Jamie, Carlos, and Claire’s responses to the survey which revealed their attitudes towards the use of language learning and teaching within the larger field of language teaching and learning.

Effectiveness of CALL. The four pre-service teachers were asked to rank the effectiveness and appropriateness of CALL within different contexts of language learning and teaching. When asked to select which contexts CALL methodologies would be appropriate for, all four of the pre-service teachers selected tertiary contexts, secondary contexts, and adult ESL and EFL contexts. Only two of the pre-service teachers selected the young learner context as being an appropriate platform to introduce and utilize CALL, meaning half of the pre-service teachers did not believe that CALL should be used in young learner language classrooms. When asked to rank the effectiveness within each context in order, all four of the pre-service teachers placed the tertiary context in the most effective position. Then, the secondary context and the adult ESL/EFL context tied for second place, with two pre-service teachers voting for each one. For the third most effective context, two pre-service teachers selected the young learner context, while the two other each voted for the secondary context or the adult ESL/EFL context. As for the least effective context, two of the pre-service teachers voted for the young learner context, while the other two votes were for the secondary context and the adult ESL/EFL context. It is interesting to note that there was variance in between the effectiveness ranking. It seems logical that the tertiary context was selected as the most effective of the four contexts for CALL

considering the preservice teachers' experiences in tandem with the balance of the literature which discusses CALL (Boulton & Cobb, 2017; Chen & Flowerdew, 2018; Mizumoto & Chujo, 2015). When considering the variance of the other context rankings, however, it is surprising that there is such variance. I would have expected to see the young learner context to have been placed as the least effective context, but the variance seems to indicate that while all four pre-service teachers do see tertiary contexts as the most effective context for CALL, there is more flexibility between the other contexts.

Attitudes: Positive. When considering the pre-service teacher's exposure to, perceptions of, and attitudes towards the use of CALL in general for language learning and teaching, the participants shared their perspectives through their responses to the survey. The subcodes which arose for their positive attitudes are technology use in the classroom and corpus use in the classroom.

Technology use in the classroom. In order to gauge pre-service teachers' attitudes towards corpus use in the classroom, it was helpful to first gain understanding into their attitudes towards the use of technology in their language learning classrooms. When asked how often the pre-service teachers used technology in their own language classrooms on a five-point Likert scale, one participant reported they use it sometimes, one participant reported they use it often, and two participants reported that they use it for every class meeting. When asked how often students interact directly with technology in their classrooms on a five-point Likert scale, one participant reported they use it rarely, one participant reported that they use it often, and two participants reported that their students interact directly with technology in every class meeting. When asked about their comfortability with using technology in their classroom, the pre-service teachers rated the following statement on a five-point Likert scale: "I feel comfortable using

technology in my classroom,” two of the pre-service teachers shared that they somewhat agree and two of the pre-service teachers shared that they strongly agree. These questions provide some insight into how these four pre-service teachers implement technology in their classrooms, which could provide insights into how willing they may be to implement corpus in their language classrooms.

Corpus use in the classroom. The pre-service teachers had both positive and negative attitudes surrounding corpus use in the classroom. When asked about the ways in which they have implemented CALL into their language classrooms, two pre-service teachers used it for examples of language use; two used it for writing skills instruction; two used it for reading skills instruction; two asked their students to perform corpus searches based on their own questions; one pre-service teacher used it for vocabulary instruction; and one used it for grammar instruction. The pre-service teachers were asked to rate the following statement on a five-point Likert scale: “I feel positively about corpus study in the language learning classroom.” One participant selected neutral and the three other teachers selected that they strongly agreed. They were asked to rate if their students would view CALL activities positively in the classroom, and two pre-service teachers chose neutral and the other two shared that they somewhat agreed.

Attitudes: Negative. While the pre-service teachers’ overall attitudes surrounding CALL in language teaching and learning were positive, there were some negative attitudes which arose, which resulted in the subcode for negative attitudes surrounding corpus use in the classroom.

Corpus use in the classroom. When asked to rate how often they use corpora to inform the way they develop their teaching materials on a five-point Likert scale, two pre-service teachers shared that they never do, one shared that they rarely do, and one shared that they sometimes do. When asked to rate how often they ask their students to utilize corpus tools to

accomplish learning goals on a five-point Likert scale, two of the pre-service teachers shared that they never do, one shared that they rarely do, and one shared that they sometimes do. These positive and negative attitudes that the pre-service teachers have surrounding the use of CALL for language teaching and learning across the contexts reveal that while they do feel generally positively about corpus use in the classroom, they do not often bridge the gap between their theoretical opinions and their classroom practices. These findings support Poole's (2020) study, discussed in the first chapter of this project. The negative attitudes shared about a general application of CALL for language learning do not reflect negative attitudes about the effectiveness of CALL, but instead the findings show that these pre-service teachers do not use CALL in their own classrooms. While this study did not ask questions which explored this disconnect between beliefs and practice, it could be expected that these pre-service teachers would express similar concerns to the teachers in Poole's (2020) study.

Evaluation of Effectiveness and Value of CALL

The second research question for this study is “How did the pre-service teachers evaluate the effectiveness and value of the corpus-assisted activities for language learning which were designed for this project?” This section focuses on the pre-service teachers’ responses which evaluated specifically the corpus-assisted language lessons for the project. While reviewing their surveys, the responses were coded for positive attitudes, neutral attitudes, and negative attitudes.

Attitudes: Positive. The four pre-service teachers shared their positive attitudes in regards to the corpus-assisted language lessons which were designed for this project, and their responses were further organized using the following subcodes: comparison between control lessons and corpus-activity lessons; appropriateness of corpus-activity lessons for young

learners; views which were changed as a result of reviewing the lessons; highlighting the affordances from the lessons; and adapting corpus-study for young learners.

Comparison between control lessons and corpus-activity lessons. The pre-service teachers were asked to rank the corpus-assisted language activities, and the best ranked activity was the activity which introduced the concept of collocates through the idea of “word friends.” When asked if the control lessons and the corpus-activity lessons accomplished the same language learning goals, two of the pre-service teachers shared that they somewhat agreed and the two others shared that they strongly agreed. This suggests that the pre-service teachers believed that the corpus-assisted language activities could be just as effective for young learners as traditionally designed lessons. When asked if they thought that the corpus-activity lessons seemed more effective than the control lessons in accomplishing the retention of the language learning goals, one participant shared that they somewhat agreed and the other three participants shared that they strongly agreed. In both short-term and long-term language learning goals, the pre-service teachers shared that they believed that the corpus-activity lessons were at least as effective if not more so than the non-corpus language lessons.

Appropriateness of the corpus-activity lessons for young learners. The pre-service teachers had varying opinions about the appropriateness of the corpus-activity lessons for young learners, as can be seen from the appropriateness sub-code occurring in both the attitudes: positive and attitudes: neutral codes for the second research question. This positive attitude in tandem with a neutral attitude could be revealing of a dualistic perception pre-service teachers may hold when considering CALL within the teaching of young learners. This dualistic perspective may seem conflicting, and it could be one of the reasons why CALL has yet to be

more widely adopted. The pre-service teachers are able to see the value and appropriateness of these methods but may still be unconvinced in some areas.

As for the positive attitudes, the pre-service teachers' responses reflect positive perspectives surrounding the application of CALL within young learner contexts.

1. *Claire: The lesson plans seem very age appropriate for children.*

When asked to rate how well they agree with the statement that the corpus-activity lessons were engaging for young learners, one pre-service teacher shared that they somewhat agreed while the other three shared that they agreed strongly. This exact response distribution was repeated when the teachers were asked to rate the statement that the corpus-activity lessons were fun for young learners. These positive attitudes could indicate that the pre-service teachers could see that CALL activities could be effectively scaled and scaffolded to meet the needs of young learners—which is often cited as a concern for the implementation of CALL methodologies into young learner classrooms (Boulton & Cobb, 2017; Braun, 2007; Crosthwaite & Stell, 2020; Kim, 2019; MacGregor, 2014) and is reflected by these pre-service teachers when only two of them chose young learners as an effective context. Perhaps this suggests that these pre-conceived notions about the effectiveness of CALL with young learners is unfounded, and when actual examples of CALL-informed methods are designed, it might be easier to see how these activities can be a fun and engaging—and effective—method of teaching for young learners.

Changed views. The examples of CALL application for young learners provided through this project did serve to enact a perspective change for the pre-service teachers, as revealed by their survey responses. When asked if they could see themselves implementing similar corpus-assisted language learning activities in a young learner context, one participant shared that they somewhat agree and the other three shared that they strongly agree. When asked if reviewing the

corpus-activities gave them a more positive view of corpus-assisted language learning for young learners, all four pre-service teachers shared that they strongly agree. These attitude stances were reflected in some of the pre-service teachers' written feedback as well.

2. *Carlos: I really liked these lesson plans. I was always struggling to conceptualize how corpus could be incorporated into language learning for young learners...Before looking at the sample lesson plans, I wasn't able to conceptualize how corpora could be implemented into a young learner setting. After looking through the sample lessons, it is easier for me to be able to imagine creating lessons that are corpus-based and informed and implementing them in a young learner setting.*
3. *Claire: Before I reviewed [the lessons], I had a difficult time conceptualizing how corpus-assisted language learning would work for young learners.*
4. *Jamie: These lesson plans have certainly opened my eyes to how corpus data can be extracted and broken down into manageable activities for young learners!...I hadn't thought of pre-printing concordance sheets and things like that. That was a surprising/new idea for how to slowly introduce corpora to students instead of having them go directly to computers to figure out how to use the corpora. Prior to reviewing these lessons, I, for whatever reason, was thinking that using corpora in the classroom meant learners directly accessing the corpora themselves, which requires some technological skills/tools.*

These responses from the pre-service teachers who participated in this study might be revealing as to the ability for tangible examples of corpus-assisted language learning activities to create a more positive attitude towards CALL for young language learners. Both Carlos and Claire (examples 2 and 3) shared that they struggled to conceptualize how CALL could be

implemented into language learning classrooms, but exposure to ready-made lesson plans incorporating corpus-assisted activities allowed all of the pre-service teachers to see more possibilities. This resulting attitude change could reveal that more education for pre-service teachers in corpus-assisted methodologies for language teaching and learning could be a missing element which could bridge the gap towards the actual implementation of CALL into the classroom (Boulton & Cobb, 2017; Poole, 2020). However, this conclusion can also lead to more questions: how much teacher education will be enough to lead to widespread implementation? The pre-service teachers in this study are unique in that they have all already received significant corpus training within their two-year master's program, according to their own responses. Most teacher training programs do not provide this high of a level of corpus-training, if they provide any at all. If even these highly corpus-experienced pre-service teachers could not conceptualize CALL in young learner classrooms, it begs the question: how much more exposure to corpus-study for pedagogy would be needed? Perhaps, the results of this study show that it may not be a question of *how much* but of *focus*. The master's program that these pre-service teachers are in provides a relatively expansive amount of corpus exposure, but it does not provide any instruction specifically on young learner language education. The findings of this study suggest that more examples of pre-designed lessons could provide clearer conceptualization that could lead to more implementation of CALL in young learner contexts.

Highlighting affordances. Another trend in the results from this study are the affordances which the pre-service teachers highlighted from their analysis of the corpus-activity lessons. CALL has many affordances which can be accomplished in the classroom, and the pre-service teachers highlighted specific things that they noticed these corpus-activity lessons accomplished.

5. *Kate: I believe that the corpus lessons are compelling examples of inductive learning.*

6. *Claire: I really liked the Discover Activity in the 3rd lesson plan where students are actively using corpus data as little detectives. This activity seems to encourage student-led learning and exploration, which is why I liked it so much...I like the corpus activities, not simply because they are corpus activities, but because they seem to really add to the lessons. Introducing the idea of collocation to young learners through the concept of “best friends” would seem to work really well in my opinion. I expected the materials to simply include corpus data, and did not expect them to include a section where the teacher would actually show the students a corpus, but I thought this was actually a really good idea and would help show students where the examples of language use that they are studying actually come from.*

7. *Jamie: I appreciate how these lessons illustrate a slow introduction to using the corpus (ex. in the first lesson, the teacher just hands out printed concordances)...I like the collocate guessing game. I think explaining it as “word friends” makes the concept easily comprehensible and fun/relatable for young learners. It seems to require little from the learners in terms of being able to use a corpus online themselves. It seems fun, engaging, and authentic to real-world communication uses.*

Comments 5 and 6 from Kate and Claire suggest that these pre-service teachers recognize and value the inductive and student-driven learning approach that these corpus-activities provide for young learners. Jamie shares in comment 7 that they appreciate the ability to share concordance lines with young learners in a more simplified way through the use of printed concordances. Claire and Jamie (examples 6 and 7) also highlight the level of authenticity which can be achieved through these CALL in young learner classrooms.

Adapting corpus-study for young learners. Another aspect which the pre-service teachers commented specifically on was the effectiveness of the adaptation of corpus-study for young learner language classrooms. These promising attitudes could indicate that it was easy for these pre-service teachers to recognize the effectiveness of these lessons when they are scaled and scaffolded effectively for young learners.

8. *Kate: The lessons, more often than not, introduce corpus activities in a learner-friendly way. “Word friends” for collocations... “Best friends” for high frequency collocations... so clever!*
9. *Jamie: These lessons illustrate a multitude of ways in which corpus data can be used in the classroom without having students directly pull the data out themselves, if that makes sense, which would be more challenging!*

Attitudes: Neutral. The pre-service teachers provided some responses which reflected some more neutral attitudes towards CALL for young learners. These responses had more variance on the Likert scales, leading to attitudes that were neither wholly positive nor wholly negative. This section will explore the following subcodes: comparing lesson sequences; appropriateness of lessons for young learners; and approachability for teachers.

Comparing lesson sequences. When asked about how they would rate the statement that the corpus-activity lessons seemed more effective than the control lessons in accomplishing the acquisition of the language learning goals, one participant shared that they felt neutral about it, two shared that they somewhat agreed, and one shared that they strongly agreed. This statement saw more variety than some of the statements within the attitudes: positive code, but despite the variance, there still seems to be a mostly positive opinions that the corpus-activities were more effective in accomplishing the language learning goals.

Appropriateness of the corpus-activity lessons for young learners. As previously stated, when asked about the appropriateness of these corpus-activities, the pre-service teachers had positive attitudes as well as more varied responses which were coded as neutral attitudes. This duality could suggest that these pre-service teachers might be ready to see CALL as effective in the young learner classroom, but perhaps they are not yet fully convinced of such effectiveness. When asked to rate the statement that the corpus-activity lessons are accessible to young learners, one participant shared that they somewhat disagreed, one shared that they felt neutral, and two shared that they strongly agreed. When asked to rate if the corpus-activity lessons were appropriately challenging for young learners, one participant shared that they somewhat disagreed, one shared they were neutral, one shared that they somewhat agreed, and one shared that they strongly agreed. It seemed that two of the pre-service teachers remained unsure that these lessons were appropriate for young learners, but the other two participants still strongly agreed.

Approachability for teachers. When asked if they felt the corpus activity lessons were approachable for language teachers, one participant shared that they somewhat disagreed, one shared that they somewhat agreed, and two shared that they strongly agreed. This finding is perhaps significant because it might indicate that while some of the teachers feel that these lesson examples have made CALL methodology more approachable for them as teachers, not all of them are convinced that they would be able to effectively implement these methods in their language classrooms.

Attitudes: Negative. The four pre-service teachers also shared responses that revealed some negative attitudes which they held when considering the corpus-assisted language activities

which were designed for this project. Their negative attitudes were organized into the following subcodes: technical concerns, complexity, and intuition disconnects.

Technical concerns. Kate expressed concerns about the technical aspects of these corpus-activities.

10. *Kate: My concern is that the technicalities of corpora may confuse learners to a disruptive degree, especially so in the second lesson.*

In example 10, Kate is talking about the second corpus lesson, which includes the “Peek Behind the Curtain” Activity and the introduction to collocates explored through the ideas of “Word Friends.” Kate’s comment reflects the concern that is addressed by scholars who write about CALL in young learner contexts (Braun, 2007; Flowerdew, 2012; Hirata, 2020; MacGregor, 2014; Wicher, 2020), echoing a myriad of concerns that corpus-study is technologically difficult. These scholars stress that CALL must be simplified for young learners (Wicher, 2020), and that attitude is consistent with the feedback shared by the pre-service teachers who participated in this survey. It could be that, although these corpus-activity lessons were designed to be simplified and therefore more easily accessible to young learners, more simplification and scaffolding may be needed to make CALL activities effective for young learners.

Complexity. When considering the corpus-activity lessons, Jamie and Carlos focused in particular on the lessons’ complexity, and they shared their concerns that these lessons may overwhelm young learners.

11. *Jamie: I just wasn’t sure about the synonym corpus activity for Lesson 3. (Don’t get me wrong – I love the idea of using corpora in the language classroom for authentic language learning!!!) I just am worried that it would be too complex for young*

learners. They are easily distracted, may not have had time to develop their technology skills, and overall just may be overwhelmed by the activity... It seems a bit more complex than the other corpus activities.

12. Carlos: I was a little concerned with the “a peek behind the curtain” activity as I think that young learners can become overwhelmed by the information being presented to them and that they aren’t using this information later on in the lesson to reinforce the ideas being presented. I think that [the peek behind the curtain] activity can be overwhelming for young learners and that the other activities implemented in the sample lessons do a better job of incorporating corpora in the class.

Jamie discusses the synonym activity in example 11, stating concerns that this activity might be too complex for young learners, and could lead to being overwhelmed. In example 12, Carlos shares Kate’s concerns (example 10) that the “Peek Behind the Curtain” activity presents too much complex information to young learners, and that this activity, too, could lead students to becoming overwhelmed. As discussed in the literature review, corpus-study and CALL can be overwhelming for even advanced language learners (Kim, 2019; Johansson, 2009), and Jamie, Carlos, and Kate all echo this concern for the corpus-activities in this project.

Intuition disconnects. When talking about their least favorite of the corpus-activities, Kate discussed the “Collocate Guessing Game.”

13. Kate: What if learners are not able to guess the right collocates? Some of the right collocates might not be intuitive enough.

This is an interesting negative attitude that Kate shares, because one of the affordances of CALL is that corpus-study allows researchers—and language teachers—to bypass their intuitions and provide students with authentic language data (Flowerdew, 2012; McCarthy & O’Keeffe,

2012; Reinhardt, 2010). However, Kate expresses their concern that the students might become discouraged if they are unable to guess the correct collocates because they may not follow the students' intuitions. I think this intuition disconnect could potentially be resolved through the use of a dedicated children's language corpus (Braun, 2007; Flowerdew, 2012; Hirata, 2020; MacGregor, 2014; Pérez-Paredes, 2020; Wicher, 2020). The juvenile fiction section of the COCA served the purposes of this project, but a more dedicated corpus may strike a better balance between speaker intuitions and authentic data.

Pre-service Teachers' Attitudes Towards CALL with Young Learners

The third research question for this study is "What are the pre-service teachers' perceptions of, attitudes towards, and expectations concerning the implementation of CALL practices within the context of young learners?" This section focuses on the pre-service teachers' responses which considered the overall implementation of CALL with young language learners. While reviewing their surveys, the responses were coded for positive and negative attitudes.

Attitudes: Positive. The pre-service teachers' responses revealed both positive and negative attitudes surrounding CALL with young language learners. This section focuses on the positive attitudes, organizing the responses according to the following subcodes: approachability for teachers, highlighting affordances, and implementation.

Approachability for teachers. When asked to rate if they think creating their own corpus-activity lesson plans for young learners seems achievable, one participant shared that they felt neutral, two shared they somewhat agreed, and one shared that they strongly agreed. When asked if they thought they would incorporate corpus-activities for young learners if they had access to pre-made activities, one participant shared that they somewhat agreed, while three participants shared that they strongly agreed. These results are interesting because they suggest that these

pre-service teachers feel generally positive about incorporating corpus-activities for young learners, and pre-made activities may be the key to bringing CALL lessons into young learner classrooms. These findings echo Poole (2020), where participants also shared that they would be more likely to incorporate corpus-study into their classrooms if they had access to pre-made corpus activities.

Highlighting affordances. When discussing the use of CALL for young learners, Kate, Jamie, and Claire all highlighted specific affordances of CALL that young learners would benefit from.

14. *Kate: I believe that corpus-assisted language learning can be very useful in that it provides contextualized and natural examples of language use. Moreover, it leads to linguistics assertions based on empirical data...I believe [CALL] can be very effective when it is contextualize[d] appropriately for the age group.*

15. *Jamie: I certainly think [CALL] is appropriate. Corpora show language in action which is authenticity! I think access to authentic input is incredibly important of language teachers to provide and corpora can be one of the best tools to do that.*

16. *Claire: I think it can be really useful for young learners because it gives them autonomy over their own learning and encourages a problem solving/discovery-oriented approach towards language learning, and I think this type of approach to language learning leads learners to be more motivated, which I think is particularly useful within a language learning classroom.*

These three pre-service teachers highlight many of the affordances of CALL in these examples. Kate (example 14) stresses the importance of contextualization which the corpus data provides for language learners. Both Kate (example 14) and Jamie (example 15) speak to the

importance of authentic data as “natural examples of language use,” where corpora are seen as one of the best tools to provide language learners with authentic language input. Claire (example 16) highlights the importance of autonomy and student-driven, discovery-based language learning which can lead to better motivation in the language learning classroom, and they see it as “really useful” for young learners, who might not always be given autonomy in the classroom.

Implementation. Carlos and Claire had many positive attitudes surrounding the actual implementation of CALL resources in young learner classrooms.

17. *Carlos: I think that most of the activities described here are something that is easy to implement but also allows students to see how language is used without overwhelming them with a lot of information...I think that activities are focused around a small task with the corpus or corpus informed that implementing corpus-assisted language learning to be appropriate for young learners.*

18. *Claire: As long as corpus-assisted activities for young learners are really engaging, I think these types of activities can be really effective. I think a big challenge with young learners is holding their attention, so I think if the activities are boring for the students, then they will not work well, but if they are framed as a game or something fun, then I think they will be pretty effective...This approach seems to be appropriate as long as it is not being used “just to be used” if that makes sense. I think with any teaching approach that seems trendy/new/innovative, we can be tempted to implement it just for the sake of implementing it, but when these activities are simply supplementing what is already happening in the classroom, I think these activities are very appropriate.*

In example 17, Carlos shares their perspective that they think the types of corpus-activities that were designed for this study would be easy to implement in young learner classrooms as well as appropriate for young learners. In example 18, Claire shares a similar positive perspective surrounding the effective implementation and appropriateness of corpus-activities for young learners, but they do also share a few caveats. Claire highlights that the corpus-activities will need to be framed as something fun in order to engage young learners. They also stress that a CALL approach to teaching young learners will need to be carefully designed so that they *support* already existing classroom structures rather than replacing them—a result that again echoes the findings of Poole’s (2020) study where the pre-service teachers learned to see CALL not as a replacement for existing curriculum, but as a support for student learning.

Attitudes: Negative. While much of the pre-service teachers’ responses contained positive commentary on the use of CALL for young language learners, there were still concerns, trepidations, and negative attitudes. This section explores the following two subcodes which emerged when studying the data: technical concerns and general apprehension.

Technical concerns. As in the discussion of the previous research question, Jamie and Kate also shared technical concerns surrounding the general use of CALL with young learners.

19. *Jamie: [Young learners] are easily distracted, and may not have had time to develop their technology skills, and overall just may be overwhelmed by the activities...I am still just unsure that these lessons that use corpora will be effective, primarily due to potential lack in technological literacy and lack in access to technology for both teachers and students.*

20. *Kate: [CALL methodology] might not be appropriate, however, when a group of young learners has trouble engaging technology perhaps for socio-economic reasons...My concern is that the technicalities of corpora may confuse learners to a disruptive degree.*

Jamie and Kate's observations in examples 19 and 20 share valid concerns about access to technology, especially when considering socio-economic challenges within a young learner's school or home. These valid reflections shared by Jamie and Kate could be because of their lack of experience in young learner classrooms, but their concerns should still be considered by advocates of CALL. If pre-service teachers are still seeing technology and technical literacy as potential roadblocks in the classroom, perhaps teacher education programs should prepare their teachers to better manage varying technology levels in their classrooms. When access to technology is a concern, pedagogical mediations such as printed concordances can alleviate some of the technological burden that may be placed on students in CALL methodology (Johansson, 2009; Chen & Flowerdew, 2018; Kim, 2019).

General Apprehension. Finally, Jamie shared a thought about their general apprehension that still lingers surrounding the application of CALL to young learner contexts.

21. *Jamie: I'm apprehensive about utilizing corpus linguistics for young learners.*

I think this result could be representative of how many pre-service teachers feel about CALL for young learners. With the lack of research and concrete examples of CALL being put into practice in young learner classrooms, how could pre-service teachers not feel apprehensive? Perhaps more teacher education and more research projects such as this one will provide the exposure needed to alleviate pre-service teacher apprehension, especially when this study has revealed many positive attitudes surrounding CALL for young learners.

CONCLUSION

In the literature review of this project, I highlighted the need for more research which explores the implementation of CALL within young learner contexts. The design of this project sought to respond to the need for investigations into pre-service teacher attitudes and perceptions, which Breyer (2009) argues is the key to bringing CALL from the periphery into a more prominent role in language learning classrooms—including young learner classrooms. This project sought to do this work, presenting pre-made examples of corpus-activities designed for young learners to pre-service teachers and investigating their attitudes to explore the research questions. The results of the survey led to several insightful takeaways, and these takeaways are explored in the following sections.

Implications

All four of the pre-service teachers shared that reviewing the pre-made corpus-activities designed for this project gave them a more positive view of CALL within young learner contexts. Carlos, Claire, and Jamie all shared explicitly in their responses that before interacting with these corpus-activities, they struggled to conceptualize how CALL could be implemented with young learners. This finding could be significant for two reasons: 1) it reveals the potential of pre-made corpus activities as the templates they provide for implementation and context-specific adaptation; and 2) it raises questions about the exposure to CALL pre-service teachers receive in teacher education programs. A third significant implication that arose from the data

was the tension between the pre-service teachers' attitudes about CALL and their lack of implementation of CALL in their own classrooms.

The significance of pre-made corpus-activities has been discussed before (Breyer, 2009; Poole, 2020), but it warrants a conversation here as well. In order to integrate corpus-study into language classrooms, teachers seemed to suggest that access to ready-made corpus materials would solve concerns such as time constraints, leading to more implementation. Such conversations in the literature may have prompted Poole's (2018) book *A Guide to Using Corpora for English Language Learners* and Frigial's (2018) book *Corpus Linguistics for English Teachers: New Tools, Online Resources, and Classroom Activities*, which were designed with ready-made corpus activities to help both language teachers and learners use corpus-study to accomplish their language goals. However, as Poole (2020) later discusses, teachers can be reluctant to use pre-made corpus activities because of concerns about authenticity as well as concerns about suitability for their students' needs. The results of this study seem to indicate that despite these concerns about pre-made corpus activities, they still could provide a vital function in promoting the realization of CALL approaches in language classrooms. As can be seen from the responses of the pre-service teacher participants of this study, access to the pre-made corpus activities designed for young learners changed their perspective on something they could not even conceptualize as a possibility before. Reading through ready-made lesson plans provided the pre-service teachers with a tangible example of CALL for young learners, allowing Carlos to imagine creating their own corpus-based lessons which they could implement in a young learner setting (example 2).

The power of ready-made corpus activities perhaps lies not in their replicability but in their adaptability. Pre-made activities may be more effective as examples which will prompt

language teachers to adapt the ideas to suit their own needs in the classroom. Carlos did not say they would implement these very corpus-activities in their classroom; instead, they said these examples prompted them to have the ability to envision *their own* possible corpus-activities. This finding could be particularly significant for teacher education programs to consider. If teachers could be shown examples of CALL within varying contexts and then taught how to adapt those examples for their own needs, then perhaps the field would see the rise in the implementation of CALL within varying contexts—especially young learner contexts.

This leads to the second area of significance: the important conversation surrounding teacher education. The call for more instruction on CALL approaches and methodology in teacher education programs seems to be a common reflection among the meta-analyses of CALL (Boulton & Cobb, 2017) and in studies which survey pre- and in-service language teachers (Breyer, 2009; Chen et al., 2019; Farr, 2008; Poole, 2020; Zareva, 2017). More education for pre-service teachers in CALL has been viewed as a key to unlocking CALL's potential in the classroom. As I mention in the results chapter, this conclusion begs the question: how much teacher education will be enough to lead to widespread implementation? By comparing the participant demographics from this study with those of other studies which survey pre-service teachers (Breyer, 2009; Chen et al., 2019; Farr, 2008; Zareva, 2017), it seems that the four pre-service teachers who chose to participate in this study had high levels of education surrounding corpus-study for language learning. Within their two-year master's program, all the participants shared that they had experienced corpus training within two to four of their graduate classes. Among the four participants, they were able to list seven unique corpus tools with which they were familiar. The master's program which these pre-service teachers are participating in has afforded them a high level of corpus instruction which has led to a high level of corpus literacy. I

would not say that this level of corpus training is unique to this particular program, but it seems likely that few teacher training programs provide this level of corpus exposure. Chen et al. (2019) found that teachers who are less familiar with CALL found it to be very difficult, but this study revealed that even pre-service teachers who are highly familiar with CALL struggled to conceptualize its applications for young learners. If pre-service teachers with such a high level of exposure to corpus education could not conceptualize CALL in young learner classrooms, it seems there may be more to the issue of implementation of CALL than simply concluding that teachers need more education. The results of this study may reveal that it is not a question of *how much* education but one of *focus*. The four pre-service teachers reported that none of them had any experience teaching young learners, and their master's program does not provide focused instruction specifically for the teaching of young learners. If teacher education programs were able to provide a *focused* CALL education with more training on the use of technology broadly and the use of corpora specifically, this might lead teachers to learn the skills they would need to adapt CALL to the needs of their classrooms throughout varying contexts. Pre-made corpus-activities—such as the ones presented in this study for young learners and those in Poole's (2018) and Friginal's (2018) books for tertiary contexts—could provide an avenue for such focused instruction, especially when partnered with other areas of corpus training.

Another implication worthy of note which emerged from the data of this project is the tension between the pre-service teachers' beliefs about the effectiveness of CALL and the actual implementation of CALL in their language classrooms. The survey responses suggest that these pre-service teachers held very positive attitudes surrounding CALL in language classrooms. However, despite their beliefs about the effectiveness of this approach, the teachers also reported that they do not utilize this methodology in their own language teaching classrooms. These pre-

service teachers have positive attitudes surrounding CALL with the extensive training to support its use, but they are still not sharing CALL with their students. This tension has also been highlighted by researchers such as Römer (2011) and Poole (2020), but more research may be necessary which focuses specifically on this tension in order to better understand it.

Limitations

I would like to acknowledge a few limitations to this study. The sample of pre-service teachers surveyed for this project was a sample of convenience due to time restraints as a result of COVID-19. As already discussed, the pre-service teachers who chose to participate in this study all have a high level of exposure to corpus linguistics through their master's program in TESOL and Applied Linguistics, and their responses reflect their high familiarity with corpus study for language teaching and learning. All of the participants' levels of corpus literacies are similarly high, and this could have skewed the data collection in favor of CALL use. If there were more varied levels of corpus literacy, the results may have shown more hesitancy, variance, or even more negative or neutral attitudes. Further, it is important to note again that the participants were recruited from my own cohort of TESOL master's students. An email was sent out to all second-year masters students in the program, and four of the second-years volunteered to participate. There were several pre-service teachers who chose not to participate, for unknown reasons. Some may have chosen not to participate because they do not believe in the effectiveness of CALL methodologies at all, or perhaps because they did not have time to participate. All of the participants do know me personally, so it is possible that they may have been unwilling to voice negative opinions about the corpus-activities or CALL in general. However, I attempted to mitigate these concerns by providing the survey anonymously.

Further Research

The data received from this project led to several encouraging revelations about pre-service teachers' attitudes towards CALL for young learners, as well as leading to implications for teacher education. Further areas of research could take on many different forms in order to advance the use of CALL for young learners. For example, a next step could be the implementation of the corpus-activities with young learners—much like was originally envisioned with this project. Expanding the survey to include more pre-service and in-service teachers would be interesting to see what themes continue to emerge from the data. Another area that could be explored would be the creation of more ready-made corpus activities for young learners which teachers could adapt and incorporate into their language classrooms. Research could be done to observe these implementations and report findings. Finally, more research into this area could encourage the inclusion of more CALL within teacher education programs, specifically CALL for young learners. It would be my hope for the future of CALL to find its way to support the teaching of language across all contexts—for the water to reach all levels of the garden. I think that the inclusion in teacher training programs of focused instruction on CALL approaches will allow for higher levels of teacher confidence and lead to more implementation of CALL across all contexts. Perhaps, by providing more support across the contexts in teacher training, programs will be able to equip the gardeners with the tools and knowledge they need to effectively cultivate their garden classrooms.

REFERENCES

- Amador-Moreno, C. P. (2012). How can corpora be used to explore literary speech representation? In A. O'Keeffe & M. McCarthy (Eds.), *The Routledge Handbook of Corpus Linguistics* (pp. 531–544).
- Andersen, G. (2012). How to use corpus linguistics in sociolinguistics. In A. O'Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 547–562).
- Anthony, L. (2022). *AntConc* (Version 4.0.5) [Computer software].
<https://www.laurenceanthony.net/software>
- Atkins, S., & Harvey, K. (2012). How to use corpus linguistics in the study of health communication. In A. O'Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 605–619).
- Austin, J. L. (1973). Speech acts. *The Edinburgh Course in Applied Linguistics*, 1, 37–53.
- Banerji, N., Gupta, V., Kilgarriff, A., & Tugwell, D. (2013). Oxford children's corpus: A corpus of children's writing, reading, and education. *Corpus Linguistics*, 315.
- Bernardini, S. (2002). Exploring new directions for discovery learning. *Teaching and Learning by Doing Corpus Analysis*, 165–182.
- Bernardini, S. (2004). Corpora in the classroom. *How to Use Corpora in Language Teaching*, 12, 15–36.
- Boulton, A. (2009). Testing the limits of data-driven learning: Language proficiency and training. *ReCALL*, 21(1), 37–54.
- Boulton, A. (2012). What data for data-driven learning? *The EuroCALL Review*, 20(1), 36.
<https://doi.org/10.4995/eurocall.2012.16038>
- Boulton, A. (2017). Data-driven learning and language pedagogy. In S. Thorne & S. May (Eds.), *Language, education and technology: Encyclopedia of language and education* (pp. 181–192). Springer.
- Boulton, A., & Cobb, T. (2017). Corpus use in language learning: A meta-analysis: Meta-analysis of corpus use in language learning. *Language Learning*, 67(2), 348–393.

- Boulton, A., & Leńko-Szymańska, A. (2015). Introduction: Data-driven learning in language pedagogy. In A. Leńko-Szymańska & A. Boulton (Eds.), *Studies in Corpus Linguistics* (pp. 1–14). John Benjamins Publishing Company.
- Boulton, A., & Vyatkina, N. (2021). Thirty years of data-driven learning: Taking stock and charting new directions over time. *Language Learning & Technology*, 25(3), 66–89.
- Braun, S. (2007). Integrating corpus work into secondary education: From data-driven learning to needs-driven corpora. *ReCALL*, 19(3), 307–328.
- Breyer, Y. (2009). Learning and teaching with corpora: Reflections by student teachers. *Computer Assisted Language Learning*, 22(2), 153–172.
- Çalışkan, G., & Gönen, S. İ. K. (2018). Training teachers on corpus-based language pedagogy: Perceptions on vocabulary instruction. *Journal of Language and Linguistic Studies*, 14(4), 190–210.
- Canagarajah, A. S. (1999). Interrogating the “native speaker fallacy”: Non-linguistic roots, non-pedagogical results. In G. Braine (Ed.), *Non-native educators in English language teaching* (Vols. 77–92). Erlbaum.
- Charles, M. (2007). Reconciling top-down and bottom-up approaches to graduate writing: Using a corpus to teach rhetorical functions. *Journal of English for Academic Purposes*, 6(4), 289–302.
- Charmaz, K. (2017). The Power of constructivist grounded theory for critical inquiry. *Qualitative Inquiry*, 23(1), 34–45.
- Chen, M., & Flowerdew, J. (2018). A critical review of research and practice in data-driven learning (DDL) in the academic writing classroom. *International Journal of Corpus Linguistics*, 23(3), 335–369. <https://doi.org/10.1075/ijcl.16130.che>
- Chen, M., Flowerdew, J., & Anthony, L. (2019). Introducing in-service English language teachers to data-driven learning for academic writing. *System*, 87, 102–148.
- Cobb, T., & Boulton, A. (2015). Classroom applications of corpus analysis. In D. Biber & R. Reppen (Eds.), *Cambridge handbook of corpus linguistics* (pp. 478–497). Cambridge University Press.
- Cook, G. (1998). The uses of reality: A reply to Ronald Carter. *ELT Journal*, 52(1), 57–63.
- Cook, G. (2001). “The philosopher pulled the lower jaw of the hen”. Ludicrous invented sentences in language teaching. *Applied Linguistics*, 22(3), 366–387.
- Cooper, S., Jones, D. B., & Prys, D. (2019). Crowdsourcing the Paldaruo speech corpus of Welsh for speech technology. *Information*, 10(8), 247.

- Cotteril, J. (2012). How to use corpus linguistics in forensic linguistics. In A. O'Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 578–590).
- Crosthwaite, P. (2020). Introduction. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 1–30). Routledge, Taylor & Francis Group.
- Crosthwaite, P., & Stell, A. (2020). “It helps me get ideas on how to use my words”: Primary school students’ initial reactions to corpus use in a private tutoring setting. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 150–170). Routledge, Taylor & Francis Group.
- Davies, M. (2008). *Contemporary American English (COCA)*. Available online at <https://www.english-corpora.org/coca/>.
- Egbert, J., Biber, D., & Gray, B. (2022). *Designing and evaluating language corpora: A practical framework for corpus representativeness*. Cambridge University Press.
- Farr, F. (2008). Evaluating the use of corpus-based instruction in a language teacher education context: Perspectives from the users. *Language Awareness*, 17(1), 25–43.
- Flowerdew, L. (2009). Applying corpus linguistics to pedagogy: A critical evaluation. *International Journal of Corpus Linguistics*, 14(3), 393–417.
<https://doi.org/10.1075/ijcl.14.3.05flo>
- Flowerdew, L. (2012). *Corpora and Language Education*. Palgrave McMillan.
- Flowerdew, L. (2015). Data-driven learning and language learning theories: Whither the twain shall meet. In A. Leńko-Szymańska & A. Boulton (Eds.), *Studies in Corpus Linguistics* (Vol. 69, pp. 15–36). John Benjamins Publishing Company.
- Frankenberg-Garcia, A. (2012). Raising teachers’ awareness of corpora. *Language Teaching*, 45(4), 475–489.
- Frigial, E. (2018). *Corpus linguistics for English teachers: New tools, online resources, and classroom activities*. Routledge.
- Gabrielatos, C. (2005). Corpora and language teaching: Just a fling or wedding bells? *TESL-EJ*, 8(4).
- Gatto, M. (2020). Query complexity and query refinement. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 106–129). Routledge, Taylor & Francis Group.
- Glaser, B. G., & Strauss, A. L. (2017). *The discovery of grounded theory: Strategies for qualitative research*. Routledge.

- Gries, S. Th. (2010). Corpus linguistics and theoretical linguistics: A love–hate relationship? Not necessarily.... *International Journal of Corpus Linguistics*, 15(3), 327–343.
- Hadley, G. (2019). Grounded theory method. In J. McKinley & H. Rose (Eds.), *The Routledge handbook of research methods in applied linguistics* (pp. 264–275). Routledge.
- Halliday, M. (2001). New ways of meaning: The challenge to applied linguistics. In A. Fill & P. Mühlhäusler (Eds.), *The ecolinguistics reader: Language, ecology, and environment* (pp. 175–202). Continuum.
- Halliday, M. A. K. (1990). *New Ways of Meaning: A Challenge to Applied Linguistics*. World Congress of Applied Linguistics, Thessaloniki, Greece.
- Halliday, M. A. K., & Matthiessen, C. M. I. M. (2013). *Halliday's Introduction to Functional Grammar* (4th ed.). Routledge.
- Hardie, A., & McEnery, T. (2010). On two traditions in corpus linguistics, and what they have in common. *International Journal of Corpus Linguistics*, 15(3), 384–394.
- Hasebe, Y. (2015). Design and implementation of an online corpus of presentation transcripts of TED Talks. *Procedia - Social and Behavioral Sciences*, 198, 174–182.
- Hirata, E. (2020). The development of a multimodal corpus tool for young EFL learners: A case study on the integration of DDL in teacher education. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 88–105). Routledge, Taylor & Francis Group.
- Hymes, D. (1972). On communicative competence. *Sociolinguistics*, 269–293.
- Hymes, D. (1992). The concept of communicative competence revisited. In M. Pütz (Ed.), *Thirty years of linguistic evolution: Studies in honour of René Dirven on the occasion of his sixtieth birthday* (pp. 31–57). John Benjamins Publishing.
- Johansson, S. (2009). Some thoughts on corpora and second-language acquisition. In K. Aijmer (Ed.), *Studies in corpus linguistics* (Vol. 33, pp. 33–44). John Benjamins Publishing Company.
- Johns, T. F. (1994). From printout to handout: Grammar and vocabulary teaching in the context of data-driven learning. In T. Odlin (Ed.), *Perspectives on pedagogical grammar* (pp. 293–313). Cambridge University Press.
- Kachru, B. B. (1990). World Englishes and applied linguistics. *World Englishes*, 9(1), 3–20.
- Kennedy, C., & Miceli, T. (2010). Corpus-assisted creative writing: Introducing intermediate Italian learners to a corpus as a reference resource. *Language Learning & Technology*, 14(1), 28–44.

- Kilgarriff, A., & Grefenstette, G. (2003). Introduction to the special issue on the web as corpus. *Computational Linguistics*, 29(3), 333–347.
- Kim, H. (2019). The perception of teachers and learners towards an exploratory corpus-based grammar instruction in a korean EFL primary school context. *The Korea Association of Primary English Education*, 25(1), 123–152.
- Kosem, I., & Krishnamurthy, R. (2007). A new venture in corpus-based lexicography: Towards a dictionary of academic English. *Proceedings of Corpus Linguistics*.
- Kübler, N., & Aston, G. (2012). Using corpora in translation. In A. O’Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 501–515).
- Kučera, H., & Francis, W. N. (1967). *Computational analysis of present-day American English*. Dartmouth.
- Liu, D., & Lei, L. (2017). *Using corpora for language learning and teaching*. TESOL International Association.
- MacGregor, A. (2014). Young learners and lexical awareness: Children’s engagement with wordlists and concordances. *TESOL Journal*, 5(1), 120–149.
- Mahboob, A. (2005). Beyond the native speaker in TESOL. *Culture, Context, & Communication*, 30, 60–93.
- Martinez, R., & Schmitt, N. (2012). A phrasal expressions list. *Applied Linguistics*, 33(3), 299–320.
- McCarthy, M., & Carter, R. (2004). “There’s millions of them”: Hyperbole in everyday conversation. *Journal of Pragmatics*, 36(2), 149–184.
- McCarthy, M., & Handford, M. (2004). “Invisible to us”: A preliminary corpus-based study of spoken business English. In U. Connor & T. A. Upton (Eds.), *Discourse in the professions: Perspectives from corpus linguistics* (pp. 167–203). John Benjamins Publishing.
- McCarthy, M., McCarten, J., & Sandiford, H. (2005). *Touchstone series*. Cambridge: Cambridge University Press.
- McCarthy, M., & O’Keeffe, A. (2012). Historical overview: What are corpora and how have they evolved? In *The Routledge handbook of corpus linguistics* (pp. 3–13). Routledge, Taylor & Francis Group.
- McIntyre, D., & Walker, B. (2012). How can corpora be used to explore the language of poetry and drama? In A. O’Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 516–530). Routledge, Taylor & Francis Group.

- Meunier, F., & Granger, S. (2008). *Phraseology in foreign language learning and teaching*. John Benjamins Publishing.
- Mizumoto, A., & Chujo, K. (2015). A meta-analysis of data-driven learning approach in the Japanese EFL classroom. *English Corpus Studies*, 22, 1–18.
- Mudraya, O. (2006). Engineering English: A lexical frequency instructional model. *English for Specific Purposes*, 25(2), 235–256.
- O’Keeffe, A. (2006). *Investigating media Discourse*. Routledge.
- Pérez-Paredes, P. (2020). The pedagogic advantage of teenage corpora for secondary school learners. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 67–87). Routledge, Taylor & Francis Group.
- Poole, R. (2018). *A guide to using corpora for English language learners: Empowering language learners to become independent learners through corpus-aided discovery and investigation*. Edinburgh University Press.
- Poole, R. (2020). “Corpus can be tricky”: Revisiting teacher attitudes towards corpus-aided language learning and teaching. *Computer Assisted Language Learning*, 1–22.
- Reinhardt, J. (2010). The potential of corpus-informed L2 pedagogy. *Studies in Hispanic and Lusophone Linguistics*, 3(1), 239–252.
- Römer, U. (2004). A corpus-driven approach to modal auxiliaries and their didactics. In J. Sinclair (Ed.), *How to Use Corpora in Language Teaching* (pp. 185–199). John Benjamins.
- Römer, U. (2006). Pedagogical applications of corpora: Some reflections on the current scope and a wish list for future developments. *Zeitschrift Für Anglistik Und Amerikanistik*, 54(2), 121–134.
- Römer, U. (2012). Using general and specialized corpora in English language teaching: Past, present, and future. In M. C. Campoy-Cubillo, B. Belles-fortuno, & M. L. Gea-valor (Eds.), *Corpus-based approaches to English language teaching* (pp. 18–38). Continuum.
- Rose, H., & Galloway, N. (2019). *Global Englishes for language teaching*. Cambridge University Press.
- Schauer, G. A., & Adolphs, S. (2006). Expressions of gratitude in corpus and DCT data: Vocabulary, formulaic sequences, and pedagogy. *System*, 34(1), 119–134.
- Sealey, A., & Thompson, P. (2004). ‘What do you call the dull words?’ Primary school children using corpus-based approaches to learn about language. *English in Education*, 38(1), 80–91.

- Sealey, A., & Thompson, P. (2007). Corpus, concordance, classification: Young learners in the L1 classroom. *Language Awareness*, 16(3), 208–223.
- Shortall, T. (2007). The L2 syllabus: Corpus or contrivance? *Corpora*, 2(2), 157–185.
- Sinclair, J. (1990). *Collins Cobuild English grammar*. HarperCollins.
- Sinclair, J. (2005). Corpus and Text—Basic Principles. In M. Wynne (Ed.), *Developing linguistic corpora: A guide to good practice* (pp. 1–25).
- Sinclair, J. M., & Mauranen, A. (2006). *Linear unit grammar: Integrating speech and writing* (Vol. 25). John Benjamins Publishing.
- Sinclair, J., & Sinclair, L. (1991). *Corpus, concordance, collocation*. Oxford University Press.
- Soruç, A., & Tekin, B. (2017). Vocabulary learning through data-driven learning in an English as a second language setting. *Educational Sciences: Theory & Practice*, 17(6), 1811–1832.
- Sripicharn, P. (2010). How can we prepare learners for using language corpora? In A. O’Keeffe & M. McCarthy (Eds.), *The Routledge handbook of corpus linguistics* (pp. 371–384). Routledge, Taylor & Francis Group.
- Szudarski, P. (2020). Effects of data-driven learning on enhancing the phraseological knowledge of secondary school learners of L2 English. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 133–149). Routledge, Taylor & Francis Group.
- The British National Corpus, version 2 (BNC World)*. (2001). Distributed by Oxford University Computing Services on behalf of the BNC Consortium.
- Thurston, J., & Candlin, C. N. (1998). Concordancing and the teaching of the vocabulary of academic English. *English for Specific Purposes*, 17(3), 267–280.
- Tognini-Bonelli, E. (2001). *Corpus linguistics at work*. John Benjamins Publishing.
- Tognini-Bonelli, E., & Sinclair, J. (2006). Corpora. In K. Brown & R. Asher (Eds.), *Encyclopedia of language and linguistics* (3rd ed., Vol. 3, pp. 206–219). Amsterdam, The Netherlands: Elsevier.
- Weber, J.-J. (2001). A concordance-and genre-informed approach to ESP essay writing. *ELT Journal*, 55(1), 14–20.
- Wicher, O. (2020). Data-driven learning in the secondary classroom: A critical evaluation from the perspective of foreign language didactics. In P. Crosthwaite (Ed.), *Data-driven learning for the next generation: Corpora and DDL for pre-tertiary learners* (pp. 31–46). Routledge, Taylor & Francis Group.

Widdowson, H. (2000). On the limitations of linguistics applied. *Applied Linguistics*, 21(1), 3–25.

Zareva, A. (2017). Incorporating corpus literacy skills into TESOL teacher training. *ELT Journal*, 71(1), 69–79.

APPENDIX A: LESSON PLANS FOR CONTROL GROUP

Lesson Plan 1 for Control Group (Group A)

LESSON PLAN: Discovering Grammar in Context (Lesson 1)

Class Size: 3-4 students

Class Length: 45 minutes, delivered through Zoom

Audience: Young learners of English, aged 7-12

Topic: Adjectives and Holiday (Vacation/Travel) Vocabulary

Materials Needed:

- Computer with WIFI access for Zoom
- Suitcase prop
- Vocabulary flashcards
- Whiteboard with markers
- Scissors (students)
- Glue (students)
- Printed Handout (students)

Learning Objectives:

Terminal Objectives:

- Students can recognize adjectives and identify which words they describe
- Students can successfully place adjectives before the noun in English
- Students can present vocabulary concepts to their classmates.

Enabling Objectives:

- Students can follow directions.
- Students can work together to complete tasks.

The Lesson:

Asking for Assent: 5 mins

Assent Script:

Salut, tout le monde ! Je m'appelle Kira DUNTON. Je suis étudiante à l'université d'Alabama aux Etats-Unis. Je fais une étude pour évaluer nouveaux moyens d'apprendre Anglais aux enfants qui apprennent anglais. Vous êtes enfants qui apprennent anglais, donc, je vous demander si vous vouliez participer dans mon étude.

Ça va passer comme ça. Nous ferons trois leçons d'anglais sur les appelles vidéo ensemble. Votre but : participez et faites de votre mieux. Il n'y aura pas de notes et ça ne va pas influencer vos notes à l'école. Nous voudrons voir ce que nous puissions apprendre ensemble. Chaque leçon va durer pour 45 minutes.

Vos parents savent que je vous le demander et ils sont d'accord avec cette étude.

C'est que moi et vous qui êtes dans cette classe qui va savoir qu'est-ce qui va passer dans notre leçons.

À tout temps, si vous vouliez arrêter, dites-moi et quittez la leçon. Vous pouvez arrêter à tout temps et en tout cas si vous ne vouliez pas continuer avec moi.

Avez-vous des questions ? Vous pouvez me demander maintenant.

Voulez-vous aimer participer dans ces leçons d'anglais avec moi ? Vous pouvez dire oui ou non.

The PI/teacher will ask each participant in turn if they would like to participate in the lesson today to receive verbal assent. If any student does not give their assent, they will quit the Zoom call and not participate.

Opening Routine: 5 mins

- A Few Rounds of Hangman:
 - Using a whiteboard (either a physical tablet or a virtual one using Google's Jamboard), the teacher will play a game of hangman with the class and ask them to take turns guessing letters to solve the word on the board.
 - Words to use: passport, suitcase, airplane

Task 1: 10 mins

- I'm going on a trip... (Vocabulary introduction)
 - Using a suitcase as a prop, the teacher will tell the class that she is going on holiday to the beach and ask them what she should pack in her suitcase. Students will have an opportunity to make some suggestions as a way to gauge their pre-existing knowledge.
 - The teacher will introduce three different locations to the students: the beach, the (snowy) mountains, and a big city (like London or New York City), as different places that we could "go on Holiday" and ask the class to select one that we would start by focusing on
 - Using flashcards (see Appendix G for flashcards) for vocabulary, the teacher will provide students with two choices of items. After eliciting the correct vocabulary word for each item, the teacher will ask student which item, if any, she should bring with her on her holiday to the destination they chose. This will introduce vocabulary within a contextualized situation
 - Students will be exposed to the vocabulary that they will use in this lesson as well as be exposed to some adjectives used in discussing the holiday destinations.

Presentation: 5 mins

- The teacher will do the following 5-minute presentation on adjectives, how to identify them and how to use them in English

- The teacher will show the following example sentence to students: “The fast red car drives past the hot, sandy beach.” with a picture to help show the meaning of the sentence.
- Then, the teacher will ask the students to help her identify the nouns in the sentence, followed by the verb.
- Then, the teacher will underline the words *fast*, *red*, *hot*, and *sandy* and ask the students what these words are, eliciting the answer “adjective” from the students.
- The teacher will ask what words the adjectives are describing and ask them where the adjective is in relation to that word, helping the students to see that the adjectives come *before* the word they describe. The teacher may want to ask how adjectives work in French (the students’ first language) to help them compare how it is used in English.
- Then, the teacher will repeat this pattern with one or two more sentences and pictures (depending on time and how fast the students seem to grasp the concept)
- “The young woman wears a warm coat in the cold snow.”
- “The many colorful umbrellas cover the people on a rainy day in London.”

Task 2: 15-20 mins

- The students will now get a chance to pack their own “suitcases” for a holiday.
 - For this activity, the students will start working individually, then will work in small groups, and then will present their work to the class.
- Phase One:
 - On the students’ printed handout (see Appendix B for control group student handouts), the vocabulary cards show each vocabulary item that is labeled with a blank spot where the student can add an adjective (for example, “a _____ scarf”). There are also adjectives provided that the teacher has shared with the students. The students will choose adjectives to describe the items. The teacher may do the first few together with students, and then allow them to do the rest as individuals or partners.
- Phase Two:
 - The teacher will ask students to select a location to “visit” on their holiday: the beach, the mountains, or the city
 - Then, the teacher will ask the students to cut out the vocabulary items from their printed. Then, the students will select at least 5 items they wish to pack in their suitcase for their trip, according to where they decided to go. They will glue these items to their suitcases.
 - After they have selected their items, they will partner up with one or two other students and present what they chose to bring with them, using the provided structure: “On my trip to _____, I am taking _____” (using the adjectives as well).
 - Then, they will present these to the whole class after they get the chance to practice in small groups.
- If extra time is needed:
 - The teacher will help the students ask each other questions about the items they are choosing to bring with them
 - The teacher can also review the vocabulary again

Closing Routine: 5 mins

- Simon Says
 - The teacher and students will play a few rounds of Simon Says as a winding down activity together.

Lesson Plan 2 for Control Group (Group A)

LESSON PLAN: Identifying Word Patterns (Lesson 2)

Class Size: 3-4 students

Class Length: 45 minutes, delivered through Zoom

Audience: Young learners of English, aged 7-12

Topic: Adjectives and Holiday (Vacation/Travel) Vocabulary

Materials Needed:

- Computer with WIFI access for Zoom
- Suitcase prop
- Vocabulary flashcards
- Whiteboard with markers
- Pen or pencils (students)
- Printed Handout (students)
- Printed and cut-out Memory Game (students)

Learning Objectives:

Terminal Objectives:

- Students can recognize adjectives and identify which words they describe
- Students can successfully place adjectives before the noun in English
- Students can present vocabulary concepts to their classmates.

Enabling Objectives:

- Students can follow directions.
- Students can work together to complete tasks.

The Lesson:

Asking for Assent: 5 mins

Assent Script:

Salut, tout le monde ! Je m'appelle Kira DUNTON. Je suis étudiante à l'université d'Alabama aux Etats-Unis. Je fais une étude pour évaluer nouveaux moyens d'apprendre Anglais aux enfants qui apprennent anglais. Vous êtes enfants qui apprennent anglais, donc, je vous demander si vous vouliez participer dans mon étude.

Ça va passer comme ça. Nous ferons trois leçons d'anglais sur les appelles vidéo ensemble. Votre but : participez et faites de votre mieux. Il n'y aura pas de notes et ça ne va pas influencer vos notes à l'école. Nous voudrons voir ce que nous puissions apprendre ensemble. Chaque leçon va durer pour 45 minutes.

Vos parents savent que je vous le demander et ils sont d'accord avec cette étude.

C'est que moi et vous qui êtes dans cette classe qui va savoir qu'est-ce qui va passer dans notre leçons.

À tout temps, si vous vouliez arrêter, dites-moi et quittez la leçon. Vous pouvez arrêter à tout temps et en tout cas si vous ne vouliez pas continuer avec moi.

Avez-vous des questions ? Vous pouvez me demander maintenant.

Voulez-vous aimer participer dans ces leçons d'anglais avec moi ? Vous pouvez dire oui ou non.

The PI/teacher will ask each participant in turn if they would like to participate in the lesson today to receive verbal assent. If any student does not give their assent, they will quit the Zoom call and not participate.

Opening Routine: 5 mins

- Flashcard Game
 - The teacher will select 6-8 flashcards and place them where the students can see them. The teacher will elicit the words from the students for each flashcard item, and then she will ask the students to close their eyes. The teacher will remove one item and mix the others around. The students will then get to guess which item has been removed. The teacher may also choose to add variations to this game depending on the student response.

Task 1: 10-15 mins

- Vocabulary Memory Game
 - Students will play a vocabulary memory game, where they will need to match up pairs of words in order to earn points. This game will already be printed out and cut into cards for the students prior to the class.
 - They will play this game in small groups.
 - On each turn, the student will turn over two cards, and say the words aloud. If the cards match, they keep the cards and earn the point. If the cards do not match, then they will turn the cards back over and the next player will take their turn.

Task 2: 15-20 mins

- Adjectives Activity
 - The teacher will show the students different scenes portraying travel using a PowerPoint presentation and the student's handouts (PowerPoint presentations and handouts for control group can be found in Appendix C). They will ask the students to come up with adjectives that can be used to describe the scene as a whole or elements in the scene. After brainstorming a list of adjectives together, the students will then get a chance to write full sentences describing the scene, using adjectives and nouns together correctly.

Closing Routine: 5 mins

- Vocabulary Practice
 - Flashcard games to review some of the vocabulary for the unit.

Lesson Plan 3 for Control Group (Group A)

LESSON PLAN: Focus on Function (Lesson 3)

Class Size: 3-4 students

Class Length: 45 minutes, delivered through Zoom

Audience: Young learners of English, aged 7-12

Topic: Adjectives and Holiday (Vacation/Travel) Vocabulary

Materials Needed:

- Computer with WIFI access for Zoom
- Suitcase prop
- Vocabulary flashcards
- Whiteboard with markers
- Scissors (students)
- Glue (students)
- Printed Handout (students)

Learning Objectives:

Terminal Objectives:

- Students can recognize adjectives and identify which words they describe
- Students can successfully place adjectives before the noun in English
- Students can present vocabulary concepts to their classmates.

Enabling Objectives:

- Students can follow directions.
- Students can work together to complete tasks.

The Lesson:

Asking for Assent: 5 mins

Assent Script:

Salut, tout le monde ! Je m'appelle Kira DUNTON. Je suis étudiante à l'université d'Alabama aux Etats-Unis. Je fais une étude pour évaluer nouveaux moyens d'apprendre Anglais aux enfants qui apprennent anglais. Vous êtes enfants qui apprennent anglais, donc, je vous demander si vous vouliez participer dans mon étude.

Ça va passer comme ça. Nous ferons trois leçons d'anglais sur les appelles vidéo ensemble. Votre but : participez et faites de votre mieux. Il n'y aura pas de notes et ça ne va pas influencer vos notes à l'école. Nous voudrons voir ce que nous puissions apprendre ensemble. Chaque leçon va durer pour 45 minutes.

Vos parents savent que je vous le demander et ils sont d'accord avec cette étude.

C'est que moi et vous qui êtes dans cette classe qui va savoir qu'est-ce qui va passer dans notre leçons.

À tout temps, si vous vouliez arrêter, dites-moi et quittez la leçon. Vous pouvez arrêter à tout temps et en tout cas si vous ne vouliez pas continuer avec moi.

Avez-vous des questions ? Vous pouvez me demander maintenant.

Voulez-vous aimer participer dans ces leçons d'anglais avec moi ? Vous pouvez dire oui ou non.

The PI/teacher will ask each participant in turn if they would like to participate in the lesson today to receive verbal assent. If any student does not give their assent, they will quit the Zoom call and not participate.

Opening Routine: 5 mins

- Flashcard Game
 - The teacher will select 6-8 flashcards and place them where the students can see them. The teacher will elicit the words from the students for each flashcard item, and then she will ask the students to close their eyes. The teacher will remove one item and mix the others around. The students will then get to guess which item has been removed. The teacher may also choose to add variations to this game depending on the student response.

Task 1: 10-15 mins

- Bingo!
 - The students will play a few rounds of bingo with the vocabulary for this unit. (Bingo cards can be found in Appendix G.) The teacher will call out a vocabulary word, and the students will cross out the picture on their bingo board.

Task 2: 15-20 mins

- Postcard Writing Activity
 - The teacher will present an example postcard and will explain to the students how adjectives can make things more exciting.
 - Then, the students will take turns to pick a place where they would like to travel to. The teacher will google photos to be the “front” of the postcard, and then the students will write on the “back” of their postcard on their handout. (Student handouts for control group can be found in Appendix B.)

Closing Routine: 5 mins

- Vocabulary Practice
 - Flashcard games to review some of the vocabulary for the unit.

APPENDIX B: STUDENT HANDOUTS FOR CONTROL GROUP

LESSON 1 WORKSHEET: GROUP A

NAME: _____

DATE: _____



My Suitcase



A _____ umbrella



A _____ sunscreen



A _____ toothpaste



A _____ shampoo



A _____ T-shirt



_____ trousers



A _____ raincoat



rainboots



A _____ swimsuit



A _____ dress



A _____ jacket



A _____ coat



_____ gloves



A _____ scarf



A _____ hat



_____ socks



_____ shoes



_____ sandals

LESSON 2 WORKSHEET: GROUP A

NAME: _____

DATE: _____



ADJECTIVES

SENTENCES

1. _____
2. _____
3. _____



ADJECTIVES

SENTENCES

1. _____
2. _____
3. _____



ADJECTIVES

SENTENCES

1. _____
2. _____
3. _____



ADJECTIVES

SENTENCES

1. _____
2. _____
3. _____



ADJECTIVES

SENTENCES

1. _____
2. _____
3. _____

LESSON 3 WORKSHEET: GROUP A

NAME: _____

DATE: _____



Dear Grandma,

Hello from beautiful Paris!

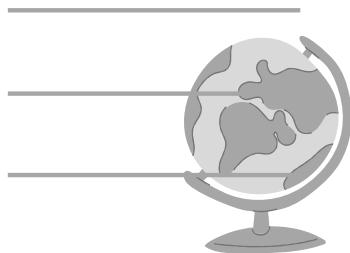
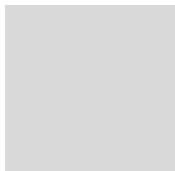
Here are some things I saw:
the tall Eiffel Tower, the
busy streets, and the happy
people!

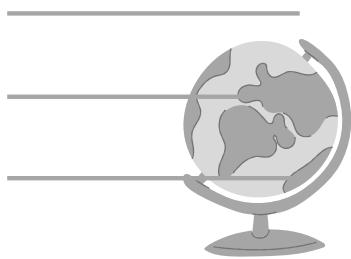
See you soon!
Kira

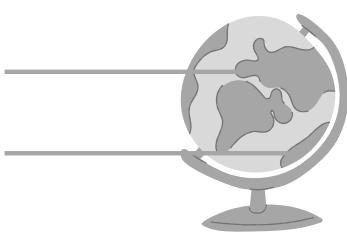
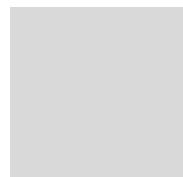


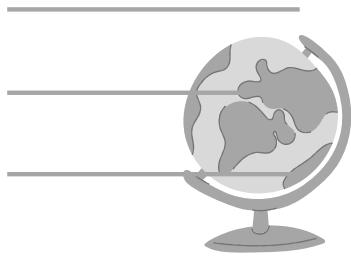
Circle the adjectives in the postcard above.

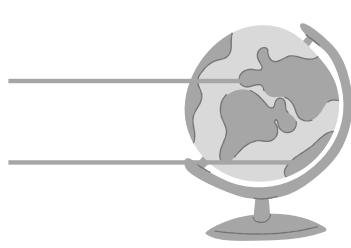
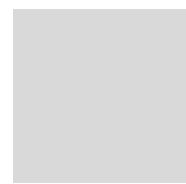
Now, it's your turn!











APPENDIX C: POWERPOINT PRESENTATIONS FOR CONTROL GROUP

Adjectives

Kira Dunton
Thesis Project
Lesson 1 Group A



The fast red car drives past the hot,
sandy beach.

Nouns



The fast red **car** drives past the hot,
sandy **beach**.

Verb



The fast red car **drives** past the hot,
sandy beach.

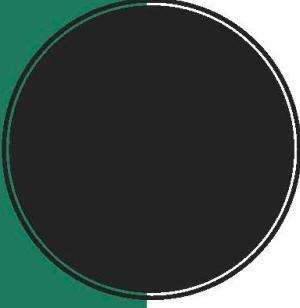
?



The fast red car drives past the hot, sandy beach.



The young woman wears a warm coat in the cold snow.



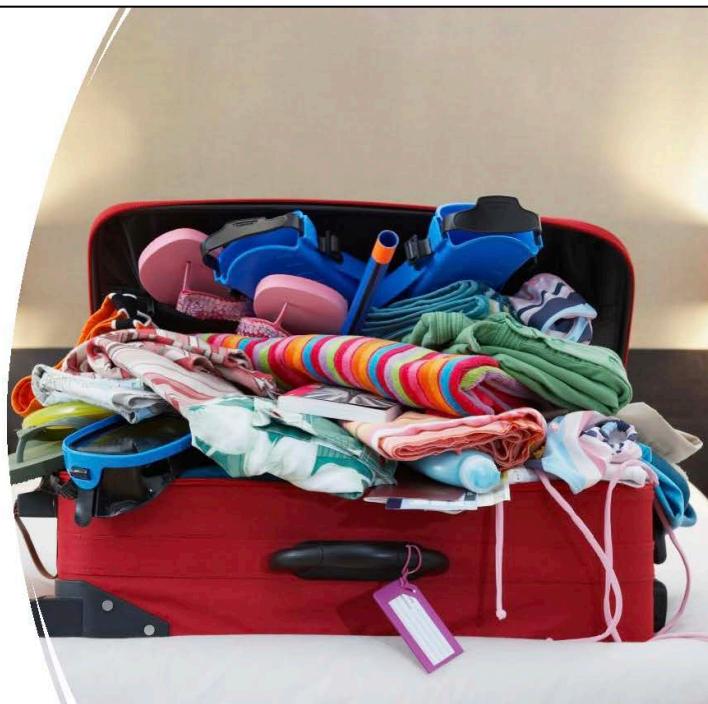
The many colorful umbrellas cover the people on a rainy day in London.

Let's Describe!

Kira Dunton
Thesis Project
Lesson 2: Task 2
Group A



What
adjectives do
we need?



Now let's write some sentences...

What
adjectives do
we need?



Now let's write some sentences...





What adjectives do we need?



Now let's write some sentences



What adjectives do we need?



Now let's write some sentences...





What adjectives do we need?



Now let's write some sentences...



APPENDIX D: LESSON PLANS FOR CORPUS-ACTIVITY GROUP

Lesson Plan 1 for Corpus Activity Group (Group B)

LESSON PLAN: Discovering Grammar in Context

Class Size: 3-4 students

Class Length: 45 minutes, delivered through Zoom

Audience: Young learners of English, aged 7-12

Topic: Adjectives and Holiday/Vacation Vocabulary

Materials Needed:

- Computer with WIFI access for Zoom
- Suitcase prop
- Vocabulary flashcards
- Whiteboard and markers
- Scissors (students)
- Glue (students)
- Printed Handout (students)

Learning Objectives:

Terminal Objectives:

- Students can recognize adjectives and identify which words they describe
- Students can successfully place adjectives before the noun in English
- Students can present vocabulary concepts to their classmates.

Enabling Objectives:

- Students can follow directions.
- Students can work together to complete tasks.
- Students can work together to complete tasks.

The Lesson:

Asking for Assent: 5 mins

Assent Script:

Salut, tout le monde ! Je m'appelle Kira DUNTON. Je suis étudiante à l'université d'Alabama aux Etats-Unis. Je fais une étude pour évaluer nouveaux moyens d'apprendre Anglais aux enfants qui apprennent anglais. Vous êtes enfants qui apprennent anglais, donc, je vous demander si vous vouliez participer dans mon étude.

Ça va passer comme ça. Nous ferons trois leçons d'anglais sur les appelles vidéo ensemble. Votre but : participez et faites de votre mieux. Il n'y aura pas de notes et ça ne

va pas influencer vos notes à l'école. Nous voudrons voir ce que nous puissions apprendre ensemble. Chaque leçon va durer pour 45 minutes.

Vos parents savent que je vous le demander et ils sont d'accord avec cette étude.

C'est que moi et vous qui êtes dans cette classe qui va savoir qu'est-ce qui va passer dans notre leçons.

À tout temps, si vous vouliez arrêter, dites-moi et quittez la leçon. Vous pouvez arrêter à tout temps et en tout cas si vous ne vouliez pas continuer avec moi.

Avez-vous des questions ? Vous pouvez me demander maintenant.

Voulez-vous aimer participer dans ces leçons d'anglais avec moi ? Vous pouvez dire oui ou non.

The PI/teacher will ask each participant in turn if they would like to participate in the lesson today to receive verbal assent. If any student does not give their assent, they will quit the Zoom call and not participate.

Opening Routine: 5 mins

- A Few Rounds of Hangman:
 - Using a whiteboard (either a physical tablet or a virtual one using Google's Jamboard), the teacher will play a game of hangman with the class and ask them to take turns guessing letters to solve the word on the board.
 - Words to use: passport, suitcase, airplane

Task 1: 10 mins

- I'm going on a trip... (Vocabulary introduction)
 - Using a suitcase as a prop, the teacher will tell the class that she is going on holiday to the beach and ask them what she should pack in her suitcase. Students will have an opportunity to make some suggestions as a way to gauge their pre-existing knowledge.
 - The teacher will introduce three different locations to the students: the beach, the (snowy) mountains, and a big city (like London or New York City), as different places that we could "go on Holiday" and ask the class to select one that we would start by focusing on
 - Using flashcards (see Appendix G for flashcards) for vocabulary, the teacher will provide students with two choices of items. After eliciting the correct vocabulary word for each item, the teacher will ask student which item, if any, she should bring with her on her holiday to the destination they chose. This will introduce vocabulary within a contextualized situation
 - Students will be exposed to the vocabulary that they will use in this lesson as well as be exposed to some adjectives used in discussing the holiday destinations.
 - The vocabulary will be informed by the Fiction: Juvenile section of the COCA

Discovery: 10 mins

- Students presented with printed out concordances of corpus data on their student handout (see Appendix E for student handouts for corpus-activity group)
 - The teacher will ask her students to become language detectives to help her solve a language mystery, using the curated data
- The goal of the discovery activity is to explore adjectives in English.
- Students will be presented with a few different sentences in context, and the teacher will guide them through identifying the adjectives, the words they identify, and where in the sentence they are used. The teacher will guide the students through this inductive exercise, using phrases like “what do you see?” and “what do you notice?”

Task 2: 15-20 mins

- The students will now get a chance to pack their own “suitcases” for a holiday.
 - For this activity, the students will start working individually, then will work in small groups, and then will present their work to the class.
- Phase One:
 - On the students’ printed handout, the vocabulary cards show each vocabulary item that is labeled with a blank spot where the student can add an adjective (for example, “a _____ scarf”). There are also adjectives provided that the teacher has shared with the students. The students will choose adjectives to describe the items. The teacher may do the first few together with students, and then allow them to do the rest as individuals or partners.
- Phase Two:
 - The teacher will ask students to select a location to “visit” on their holiday: the beach, the mountains, or the city
 - Then, the teacher will ask the students to cut out the vocabulary items from their printed. Then, the students will select at least 5 items they wish to pack in their suitcase for their trip, according to where they decided to go. They will glue these items to their suitcases.
 - After they have selected their items, they will partner up with one or two other students and present what they chose to bring with them, using the provided structure: “On my trip to _____, I am taking _____” (using the adjectives as well).
 - Then, they will present these to the whole class after they get the chance to practice in small groups.
- If extra time is needed:
 - The teacher will help the students ask each other questions about the items they are choosing to bring with them
 - The teacher can also review the vocabulary again

Closing Routine: 5 mins

- Simon Says
 - The teacher and students will play a few rounds of Simon Says as a winding down activity together.

Lesson Plan 2 for Corpus Group (Group B)

LESSON PLAN: Identifying Word Patterns (Lesson 2)

Class Size: 3-4 students

Class Length: 45 minutes, delivered through Zoom

Audience: Young learners of English, aged 7-12

Topic: Adjectives and Holiday (Vacation/Travel) Vocabulary

Materials Needed:

- Computer with WIFI access for Zoom
- Suitcase prop
- Vocabulary flashcards
- PowerPoint Presentation
- Whiteboard with markers
- Scissors (students)
- Glue (students)
- Printed Handout (students)

Learning Objectives:

Terminal Objectives:

- Students can recognize adjectives and identify which words they describe
- Students can successfully place adjectives before the noun in English
- Students can present vocabulary concepts to their classmates.

Enabling Objectives:

- Students can follow directions.
- Students can work together to complete tasks.

The Lesson:

Asking for Assent: 5 mins

Assent Script:

Salut, tout le monde ! Je m'appelle Kira DUNTON. Je suis étudiante à l'université d'Alabama aux Etats-Unis. Je fais une étude pour évaluer nouveaux moyens d'apprendre Anglais aux enfants qui apprennent anglais. Vous êtes enfants qui apprennent anglais, donc, je vous demander si vous vouliez participer dans mon étude.

Ça va passer comme ça. Nous ferons trois leçons d'anglais sur les appelles vidéo ensemble. Votre but : participez et faites de votre mieux. Il n'y aura pas de notes et ça ne va pas influencer vos notes à l'école. Nous voudrons voir ce que nous puissions apprendre ensemble. Chaque leçon va durer pour 45 minutes.

Vos parents savent que je vous le demander et ils sont d'accord avec cette étude.

C'est que moi et vous qui êtes dans cette classe qui va savoir qu'est-ce qui va passer dans notre leçons.

À tout temps, si vous vouliez arrêter, dites-moi et quittez la leçon. Vous pouvez arrêter à tout temps et en tout cas si vous ne vouliez pas continuer avec moi.

Avez-vous des questions ? Vous pouvez me demander maintenant.

Voulez-vous aimer participer dans ces leçons d'anglais avec moi ? Vous pouvez dire oui ou non.

The PI/teacher will ask each participant in turn if they would like to participate in the lesson today to receive verbal assent. If any student does not give their assent, they will quit the Zoom call and not participate.

Opening Routine: 5 mins

- Flashcard Game
 - The teacher will select 6-8 flashcards and place them where the students can see them. The teacher will elicit the words from the students for each flashcard item, and then she will ask the students to close their eyes. The teacher will remove one item and mix the others around. The students will then get to guess which item has been removed. The teacher may also choose to add variations to this game depending on the student response.

Task 1: 5-7 mins

- A Peek Behind the Curtain: Showing the students the corpus itself
 - For this activity, the teacher will take a few minutes to show the students corpora in action.
 - The purpose of this is to explain to the students that the computer can help us better understand language, as well as emphasize the concepts of frequency, collocation, and authenticity of language which corpus tools provide.
 - Using the COCA's text analysis tool, the teacher will upload the first three chapters of Harry Potter for the students to see.
 - The teacher will reassure students that it's okay if none of this makes much sense, and instead stress the concepts of authenticity and frequency.
 - The teacher can show the highest frequency words and show them in concordance as well as the lowest frequency words, and show students that learning highest frequency words will benefit them the most.
 - The teacher can also introduce the idea of collocates, and show the students one of the higher frequency words (such as *people* or *eyes*) and show the words that are most often used with it.

Discovery: 10 mins

- Introducing Collocates
 - The teacher will lead the students through a Discovery activity to understand collocates. (The activity is accomplished through PowerPoint slides. PowerPoint slides can be found in Appendix F for corpus-activity group.)
 - The teacher will introduce the concept of "word friendships" to introduce the idea of collocates. Through the PowerPoint, the students will have the opportunity to explore words that often go together in both French and English.
 - The idea of "best friends" will be explored to show that some words go together all the time, or are collocates of each other.
 - The example of the word "sun" will be used at the end to show the students what adjectives are the "best friends" of "sun", showing the 5 highest frequency adjective collocates of "sun"

- This Discovery Activity will lead students into the Corpus Activity: Collocate Guessing Game

Task 2: 15 mins

- Corpus Activity: Collocate Guessing Game
 - The students will be divided into small teams to participate in this game.
 - The students will get to guess the adjective “best friends” for some of the vocabulary words in this “Going on Holiday” unit. Every time a team guesses correctly one of the top five adjective collocates for a word, their team will score a point. The team with the most points at the end will win!
 - The students may guess in either French or English, and the teacher will act as a translation resource to aid the students in clarity. The goal of the activity is to get students thinking about the way words go together, so the translations will offer an extra learning opportunity.
 - The words are as follows:
 - Beach: long, sandy, private, Hawaiian, beautiful
 - T-shirt: white, black, faded, red, long-sleeved
 - Ocean: vast, blue, white-capped, frothy, churning
 - Scarf: special, blue, red, warm, new
 - Suitcase: small, black, other, dust-covered, battered
 - Snow: deep, fresh, hard-packed, sparkling, dirty
 - Bus: empty, crowded, public, departing, speeding
 - Rain: cold, heavy, pouring, slow, sweet
 - Gloves: rubber, red, white, black, fingerless
 - Shoes: new, running, shiny, black, sweet

Closing Routine: 5-10 mins

- Vocabulary Practice
 - Flashcard games to review some of the vocabulary for the unit.

Lesson Plan 3 for Corpus Group (Group B)

LESSON PLAN: Focus on Function (Lesson 3)

Class Size: 3-4 students

Class Length: 45 minutes, delivered through Zoom

Audience: Young learners of English, aged 7-12

Topic: Adjectives and Holiday (Vacation/Travel) Vocabulary

Materials Needed:

- Computer with WIFI access for Zoom
- Suitcase prop
- Vocabulary flashcards
- Bingo Cards
- PowerPoint Presentation
- Whiteboard with markers
- Scissors (students)
- Glue (students)

- Printed Handout (students)

Learning Objectives:

Terminal Objectives:

- Students can recognize adjectives and identify which words they describe
- Students can successfully place adjectives before the noun in English
- Students can present vocabulary concepts to their classmates.

Enabling Objectives:

- Students can follow directions.
- Students can work together to complete tasks.

The Lesson:

Asking for Assent: 5 mins

Assent Script:

Salut, tout le monde ! Je m'appelle Kira DUNTON. Je suis étudiante à l'université d'Alabama aux Etats-Unis. Je fais une étude pour évaluer nouveaux moyens d'apprendre Anglais aux enfants qui apprennent anglais. Vous êtes enfants qui apprennent anglais, donc, je vous demander si vous vouliez participer dans mon étude.

Ça va passer comme ça. Nous ferons trois leçons d'anglais sur les appelles vidéo ensemble. Votre but : participez et faites de votre mieux. Il n'y aura pas de notes et ça ne va pas influencer vos notes à l'école. Nous voudrons voir ce que nous puissions apprendre ensemble. Chaque leçon va durer pour 45 minutes.

Vos parents savent que je vous le demander et ils sont d'accord avec cette étude.

C'est que moi et vous qui êtes dans cette classe qui va savoir qu'est-ce qui va passer dans notre leçons.

À tout temps, si vous vouliez arrêter, dites-moi et quittez la leçon. Vous pouvez arrêter à tout temps et en tout cas si vous ne vouliez pas continuer avec moi.

Avez-vous des questions ? Vous pouvez me demander maintenant.

Voulez-vous aimer participer dans ces leçons d'anglais avec moi ? Vous pouvez dire oui ou non.

The PI/teacher will ask each participant in turn if they would like to participate in the lesson today to receive verbal assent. If any student does not give their assent, they will quit the Zoom call and not participate.

Opening Routine: 5-10 mins

- Vocabulary Practice
 - The students will play a few rounds of bingo with the vocabulary for this unit. (Bingo cards can be found in Appendix G.) The teacher will call out a vocabulary word, and the students will cross out the picture on their bingo board.

Discover Activity: 20 mins

- What's the difference between...?
 - For this activity, the teacher will introduce two synonyms from the adjectives being learned in this unit and will ask the students to become little detectives and discover and create their own rules for when to use one synonym over the other.
 - For this task, the teacher will use a PowerPoint presentation and student handouts (PowerPoint presentations can be found in Appendix F and student handouts can be found in Appendix E for corpus-activity group.)
 - Since this is third and final lesson in the unit, the students will investigate using collocates and concordance lines to gather their evidence.
 - Big vs Tall
 - Small vs Short

Closing Routine: 5-10 mins

- Vocabulary Practice
 - Flashcard games to review some of the vocabulary for the unit.

APPENDIX E: STUDENT HANDOUTS FOR CORPUS-ACTIVITY GROUP

LESSON 1 WORKSHEET: GROUP B

NAME: _____

DATE: _____

ON DÉCOUVRE... / LET'S DISCOVER...

Aujourd'hui, nous sommes inspecteurs !



Les inspecteurs cherchent pour les indices.

En anglais, les inspecteurs sont « detectives » et les indices sont « clues ».

On essaie de comprendre les adjectifs en anglais. Donc, on regarde les indices qui sont « REAL SENTENCES » utilisés par quelqu'un qui parle anglais...



Les indices :

He packed up his **small red suitcase**.

Antonio sees **blue ocean** beneath **white clouds**.

We'll hope for **good weather**.

A lot of things could happen to a **young woman** traveling alone across the country.

Oregon is such a **beautiful state**. I just know the girl would adore a trip to the mountains.



My Suitcase



A _____ umbrella



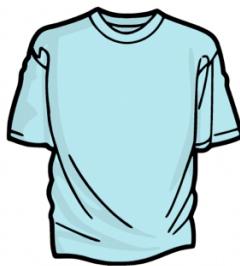
A _____ sunscreen



A _____ toothpaste



A _____ shampoo



A _____ T-shirt



_____ trousers



A _____ raincoat



rainboots



A _____ swimsuit



A _____ dress



A _____ jacket



A _____ coat



_____ gloves



A _____ scarf



A _____ hat



_____ socks



_____ shoes



_____ sandals

LESSON 3 WORKSHEET: GROUP B

NAME: _____

DATE: _____



WHAT'S THE DIFFERENCE?



WORD FRIENDS

What do you see?

REAL SENTENCES

BIG

And I found out that I have the coolest **big brother**. At least in this universe.

If people find out we caused the fire, we'll get in **big trouble**!

Judging from the **big smile** on his face, he loved us just as much as he did before.

That was my one **big mistake**. I put my trust in the wrong person.

TALL

Then a **tall man** wearing a white shirt and checked kitchen trousers came out the back door.

I watch my mother, Susanna, chase my little brother through the **tall grass**. He loves this game.

Our apartment is on the second floor, and the building is surrounded by other **tall buildings**. This means I can't even see the sky from my window.

A **tall woman** stares down at her visitors with fury.

What do you see?

WRITE A RULE

I use *big*...

I use *tall*...



short

WHAT'S THE DIFFERENCE?



small

WORD FRIENDS

What do you see?

REAL SENTENCES

SMALL

I live in a **small town** in northwestern Ontario, with dense woods surrounding our huge yard. Finally she had given in, and said I could have a **small group** of friends come and spend the night at our summer house.

She flashed them a **small smile** and then hurried out of the room.

Mr. Magorium shows Henry a **small room** filled to the ceiling with dusty papers.

SHORT

I ran my fingers through my **short hair** and thought about the fine man in the next room.

She wore a **short skirt** split at the sides, revealing her long, muscled legs.

Luke walked the **short distance** from Sam's house to the stable, liking the feel of the sun.

You might think running fast on such **short legs** would be impossible.

What do you see?

WRITE A RULE

I use *big*...

I use *tall*...

APPENDIX F: POWERPOINT PRESENTATIONS FOR CORPUS-ACTIVITY GROUP



“Friends”

- Qui connaît ce mot ?
- What do you like to do with your friends?
- Has anyone ever had a best friend?
- What do you do with your best friend?

Words can have friends, too...

GOOD



MORNING

SCARF

WARM

BEACH



SAND

BAD

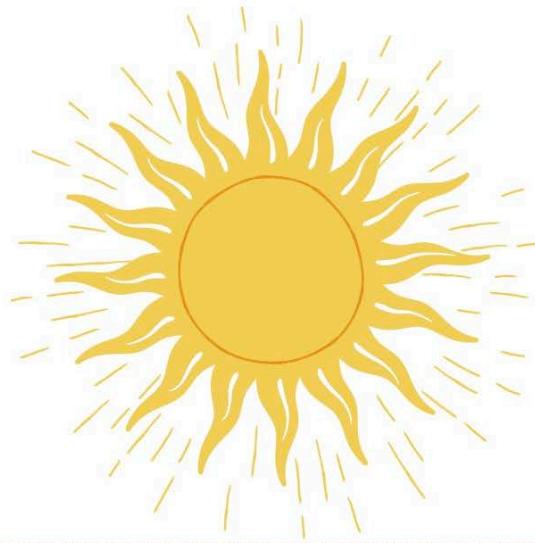


NEWS

What words in French are friends?

- Can you think of words in French that often go together?

- What is this?
- What do you think are some “best friends” of this word?



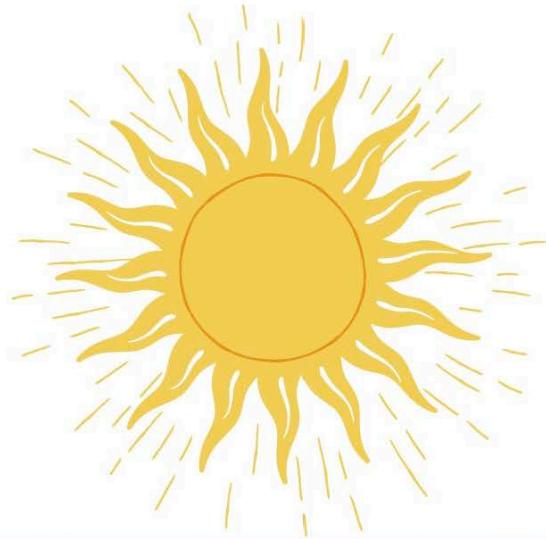
And what about *best* friends?

- These are words that go together so often we can consider them “best friends”
- In English, the fancy word for this is “collocation”



Adjectives that
are best friends
with "sun":

- #1 hot
- #2 rising
- #3 warm
- #4 bright
- #5 late



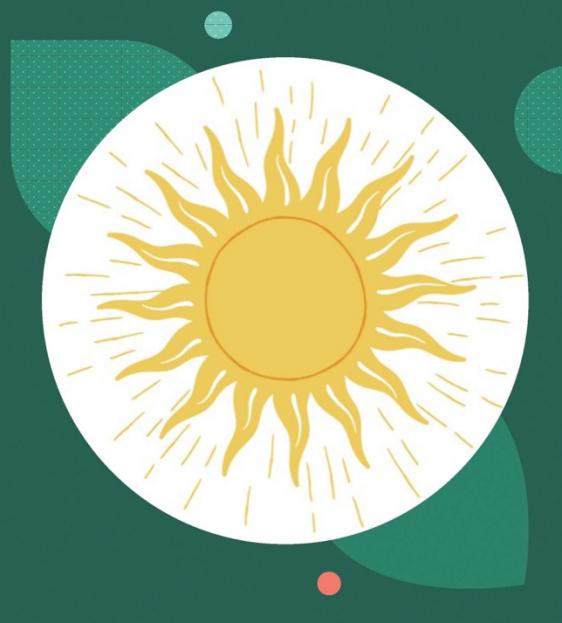
Word Friends Guessing Game

Kira Dunton
Thesis Project
Lesson 2 Group B



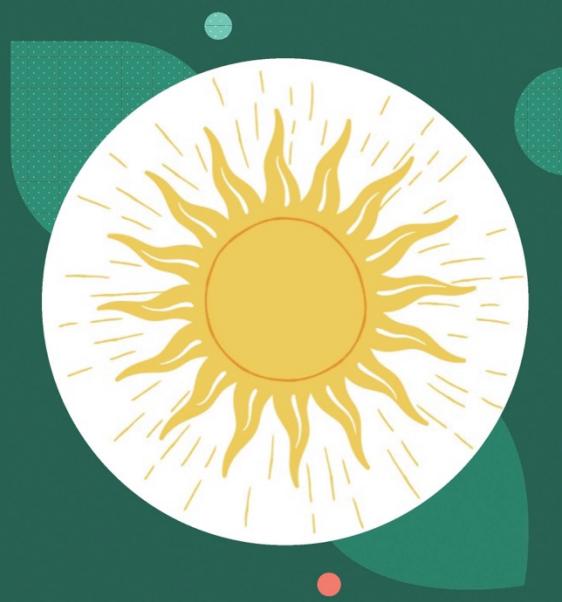
Practice Round!

- What is it?
- What are its best friends?
- (Remember, we are thinking of adjectives!)



Sun

- #1 hot
- #2 rising
- #3 warm
- #4 bright
- #5 late



- What is it?
- What are its best friends?



Beach

- #1 long
- #2 sandy
- #3 private
- #4 Hawaiian
- #5 beautiful



- What is it?
- What are its best friends?



T-shirt

- #1 white
- #2 black
- #3 faded
- #4 red
- #5 long-sleeved



- What is it?
- What are its best friends?



Ocean

- #1 vast
- #2 blue
- #3 white-capped
- #4 frothy
- #5 churning



- What is it?
- What are its best friends?



Scarf

- #1 special
- #2 blue
- #3 red
- #4 warm
- #5 new



- What is it?
- What are its best friends?



Suitcase

- #1 small
- #2 black
- #3 other
- #4 dust-covered
- #5 battered



- What is it?
- What are its best friends?



Snow

- #1 deep
- #2 fresh
- #3 hard-packed
- #4 sparkling
- #5 dirty



- What is it?
- What are its best friends?



Bus

- #1 empty
- #2 crowded
- #3 public
- #4 departing
- #5 speeding



- What is it?
- What are its best friends?



Rain

- #1 cold
- #2 heavy
- #3 pouring
- #4 slow
- #5 sweet



- What is it?
- What are its best friends?



Gloves

- #1 rubber
- #2 red
- #3 white
- #4 black
- #5 fingerless



- What is it?
- What are its best friends?



Shoes

- #1 new
- #2 running
- #3 shiny
- #4 black
- #5 sweet

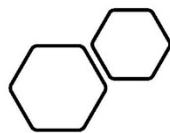


And the
winner is...



What's the
difference?

C'est quoi la
différence ?



Kira Dunton
Thesis Project
Lesson 3 Group B

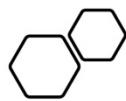


What's the difference?

- *Big* and *tall* both are adjectives in English
- What do they mean?
- What is the difference?
- When do English speakers use *big* and when do they use *tall*?



Let's discover!



Word Friends

- What are word friends?
- What can we learn from looking at a word's friends?



Word Friends



Big

1. deal
2. brother
3. trouble
4. smile
5. hug
6. tests
7. dipper
8. mistake
9. rock
10. foot

Tall

1. man
2. woman
3. grass
4. girl
5. figure
6. glass
7. trees
8. window
9. frame
10. horse
11. buildings



Real Sentences

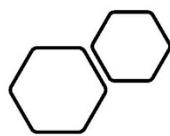
Big

- And I found out that I have the coolest **big brother**. At least in this universe.
- If people find out we caused the fire, we'll get in **big trouble**!
- Judging from the **big smile** on his face, he loved us just as much as he did before.
- That was my one **big mistake**. I put my trust in the wrong person.

Tall

- Then a **tall man** wearing a white shirt and checked kitchen trousers came out the back door.
- I watch my mother, Susanna, chase my little brother through the **tall grass**. He loves this game.
- Our apartment is on the second floor, and the building is surrounded by other **tall buildings**. This means I can't even see the sky from my window.
- A **tall woman** stares down at her visitors with fury.

What's your rule?



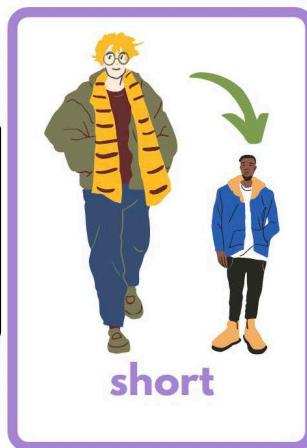
I use big...

I use tall...



What's the difference?

- *Small* and *short* both are adjectives in English
- What do they mean?
- What is the difference?
- When do English speakers use *small* and when do they use *short*?



Word Friends

Small

1. town
2. mouse
3. box
4. bag
5. village
6. group
7. piece
8. hole
9. fish
10. stone

Short

1. hair
2. story
3. distance
4. while
5. stuff
6. steps
7. skirt
8. notice
9. legs
10. essay



Real Sentences

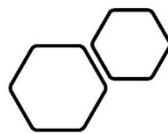
Small

- I live in a **small town** in northwestern Ontario, with dense woods surrounding our huge yard.
- Finally she had given in, and said I could have a **small group** of friends come and spend the night at our summer house.
- She flashed them a **small smile** and then hurried out of the room.
- Mr. Magorium shows Henry a **small room** filled to the ceiling with dusty papers.

Short

- I ran my fingers through my **short hair** and thought about the fine man in the next room.
- She wore a **short skirt** split at the sides, revealing her long, muscled legs.
- Luke walked the **short distance** from Sam's house to the stable, liking the feel of the sun.
- You might think running fast on such **short legs** would be impossible.

What's your rule?



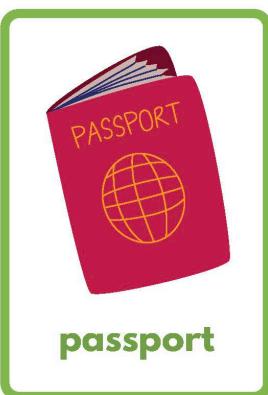
I use small...

I use short...

APPENDIX G: FLASHCARDS AND SUPPLEMENTAL MATERIALS FOR LESSONS



airplane



passport



map



ticket



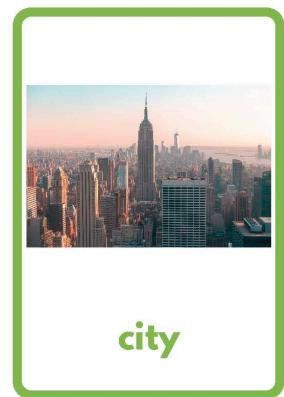
suitcase



beach



mountain



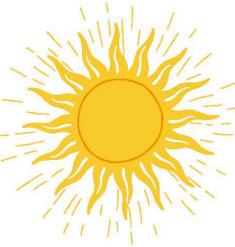
city



train



sand



sun



ocean



rain



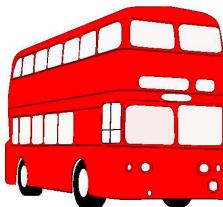
umbrella



snow



ski



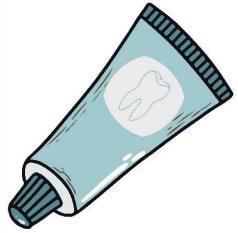
bus



building



sunscreen



toothpaste



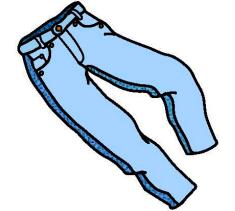
shampoo



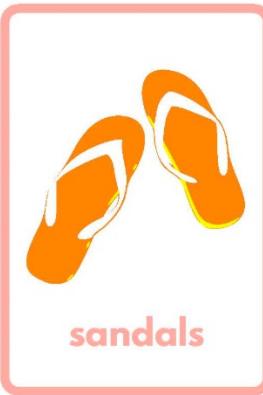
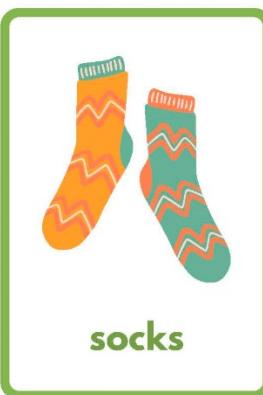
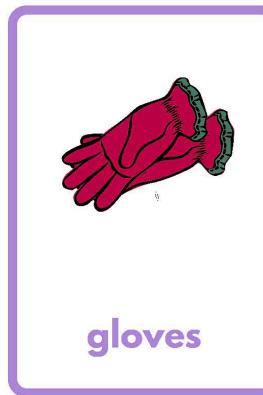
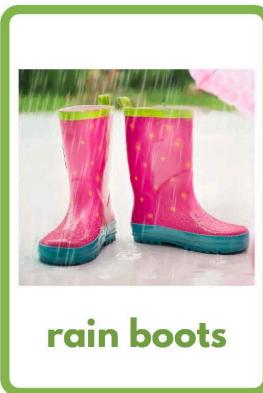
postcard

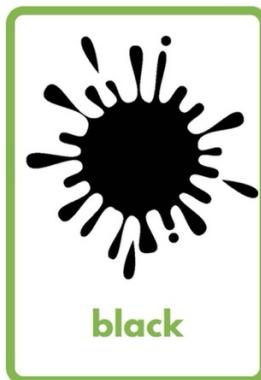
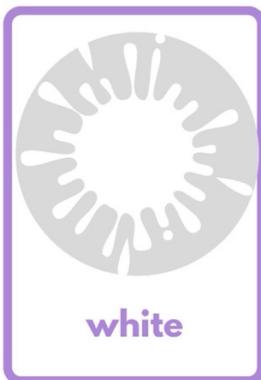
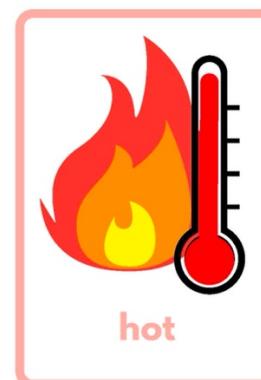
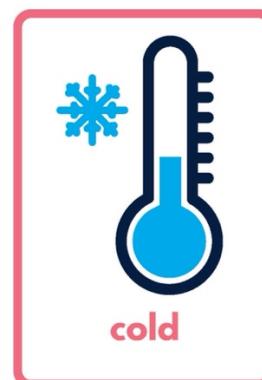
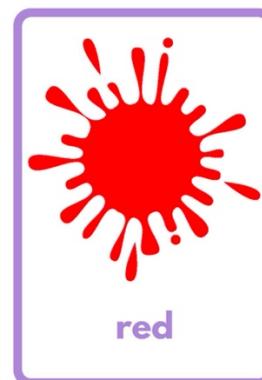


t-shirt



trousers





Going on Holiday



Going on Holiday



Going on Holiday



Going on Holiday



Going on Holiday



Going on Holiday



Going on Holiday



Going on Holiday



Call List

Use this randomly generated list as your call list when playing the game. There is no need to say the BINGO column name. Place some kind of mark (like an X, a checkmark, a dot, tally mark, etc) on each cell as you announce it, to keep track. You can also cut out each item, place them in a bag and pull words from the bag.



APPENDIX H: PRE-SERVICE INSTRUCTOR SURVEY

Q1 Have you taken a TESOL Methods Course?

- Yes
- No
- Currently Enrolled
- Planning to take soon

Q2 Please list the graduate coursework you have completed (or are currently in) which has exposed you to corpus-study for language learning:

Q3 How many years of experience do you have teaching language?

- 0-1 years
- 2-3 years
- 4-5 years
- 6+ years

Q4 Please select all of the contexts in which you have experience in language instruction:

- Young learners and primary contexts
- Secondary contexts (high school)
- Tertiary contexts (university level and graduate level students)
- Adult ESL or EFL learners
- Other (please describe) _____

Q5 Have you completed any training in corpus linguistics for language instruction?

- I have completed training in corpus linguistics, but not for language instruction.
- I have completed training in corpus linguistics for language instruction.
- I have not completed any training in corpus linguistics, but I am familiar with the concept.
- I have not completed any training in corpus linguistics, and I am unfamiliar with the concept.

Q6 In your graduate program, have you been exposed to research on corpus-use for language learning and instruction?

- I have been exposed to a lot of research on this topic
- I have been exposed to some research on this topic
- I have been exposed to a little research on this topic
- I have not been exposed to research on this topic

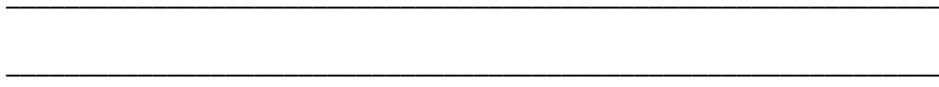
Q7 Please rate the following statements.

	Never	Rarely	Sometimes	Often	Every Class Meeting
I use technology to facilitate teaching in my language classroom...	<input type="radio"/>				
Students in my language classrooms interact directly with technology...	<input type="radio"/>				
I use corpora to inform the way I develop my teaching materials...	<input type="radio"/>				
I ask my students to utilize corpus tools to accomplish learning goals in our language classroom...	<input type="radio"/>				

Q8 Please rate the following statements.

	Disagree Strongly	Somewhat Disagree	Neutral	Somewhat Agree	Agree Strongly
I feel comfortable using technology in my language classroom.	<input type="radio"/>				
I feel corpus study is beneficial for language learning.	<input type="radio"/>				
I feel positively about corpus study in the language learning classroom.	<input type="radio"/>				
I believe my students will view corpus-assisted language learning activities positively in the classroom.	<input type="radio"/>				

Q9 Please list all of the corpus tools you are familiar with:



Q10 I think that corpus-assisted language learning would be appropriate for the following contexts: (Please select all that apply.)

- Young learners and primary contexts
- Secondary contexts (high school)
- Tertiary contexts (university level and graduate level students)
- Adult ESL and EFL learners
- Other (please describe) _____

Q11 I have used corpus-assisted language learning in my language classrooms in the following ways: (Please select all that apply.)

- Used it to get examples of language use
- Used it for vocabulary instruction
- Used it for grammar instruction
- Used it for speaking skills instruction
- Used it for listening skills instruction
- Used it for writing skills instruction
- Used it for reading skills instruction
- Presented corpus data directly to my students through the use of print-outs or accessing the corpus tools itself
- Asked my students to perform corpus searches based on pre-designed corpus activities

- Asked my students to perform corpus searches based on their own questions or ideas
- Other (please describe as many as you wish) _____

Q12 When considering the effectiveness of corpus-assisted language learning in the different contexts, please rank the following from most effective to least effective:

- _____ Young learners and primary contexts
_____ Secondary contexts (high school)
_____ Tertiary contexts (university level and graduate level students)
_____ Adult ESL and EFL learners
_____ Other (please describe)

Q13 After having reviewed the lesson plans, what are your initial thoughts/reactions?

Q14 Please rate the following statements:

	Strongly Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Strongly Agree
The control lessons and the corpus-activity lessons accomplish the same language learning goals.	<input type="radio"/>				
The corpus-activity lessons seem more effective than the control lessons in accomplishing the acquisition of the language learning goals.	<input type="radio"/>				
The corpus-activity lessons seem more effective than the control lessons in accomplishing the retention of the language learning goals.	<input type="radio"/>				
The corpus-activity lessons are accessible to young learners.	<input type="radio"/>				
The corpus-activity lessons are engaging for young learners.	<input type="radio"/>				
The corpus-activity lessons are appropriately challenging for young learners.	<input type="radio"/>				
The corpus-activity lessons are fun for young learners.	<input type="radio"/>				
The corpus-activity lessons are approachable for language teachers.	<input type="radio"/>				
I could see myself implementing similar corpus-assisted language learning activities in a young learner context.	<input type="radio"/>				
I think creating my own corpus-activity lesson plans	<input type="radio"/>				

for young learners seems achievable.

I think I would incorporate corpus-activities for young learners if they were pre-made activities.

Reviewing the corpus-activities gave me a more positive view of corpus-assisted language learning for young learners.

Q15 Please rank the following corpus-assisted activities in order of effectiveness.

- _____ Using concordance lines to explore adjectives
- _____ The "Peek Behind the Curtain" activity, where students are shown corpus tools in action
- _____ Introducing collocations as "Word Friends"
- _____ Collocates Guessing Game
- _____ Using corpus data to understand the difference between near synonyms

Q16 What, if anything, did you find surprising about the lessons you reviewed?

Q17 What, if anything, did you find concerning about the lessons you reviewed?

Q18 Which corpus-activity was your favorite and why?

Q19 Which corpus-activity was your least favorite and why?

Q20 What are your perceptions of the usefulness of corpus-assisted language learning within the context of young learners?

Q21 What are your perceptions of the effectiveness of corpus-assisted language learning within the context of young learners?

Q22 What are your perceptions of the appropriateness of corpus-assisted language learning within the context of young learners?

APPENDIX I: IRB CERTIFICATION



November 2, 2021

Kira Dunton
Department of English
College of Arts & Sciences
Box 870244

Re: IRB # 21-09-4920 "Data-Driven Learning Activities for Young Learners of English"

Dear Kira Dunton:

The University of Alabama Institutional Review Board has granted approval for your proposed research. Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested Waiver of Written Documentation of Informed Consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

The approval for your application will lapse on November 1, 2022. If your research will continue beyond this date, please submit the Continuing Review form to the IRB as required by University policy before the lapse. Please note, any modifications made in research design, methodology, or procedures must be submitted to and approved by the IRB before implementation. Please submit a final report form when the study is complete.

Please use reproductions of the IRB approved informed consent/assent forms to obtain consent from your participants.

Good luck with your research.

Sincerely,

Carpaniato T. Myles, MSM, CIM, CIP, EXCS™
Director & Research Compliance Officer

Jessup Building | Box 870127 | Tuscaloosa, AL 35487-0127
205-348-8461 | Fax 205-348-7189 | Toll Free 1-877-820-3066