ATTITUDES TOWARD ESL USE OF CORPORA IN SECOND LANGUAGE WRITING COURSES AND ITS EFFECTS ON ERROR-CORRECTION IDENTIFICATION AND LEARNING BY L2 LEARNERS OF ENGLISH

BY

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THESIS

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ABSTRACT

While much attention has been paid to whether or not grammar correction in the L2 classroom is effective and to what extent, the current consensus is still that efforts go unpaid and unnoticed. This research has two goals through the uses of empirical data: (1) To show if the use of error-corrective symbols and online corpora facilitate student learning in correcting grammar errors and if this decreases grammatical errors over time, and (2) to investigate student’s overall attitudes towards a corrective symbol list and online corpora for treating grammatical errors. Quantitative measures were taken to include the frequency of grammar errors committed by L2 students over time, while qualitative measures addressed attitudes of online corpora and the error-symbol list and their effectiveness for L2 writers. The present paper is based upon the belief that students crave teacher feedback and that student motivation is essential in learning. From this idea, both teacher feedback and student editing on multiple drafts of 10 international students from a large Midwest university will be used. This paper concludes with a possible recommendation toward making corpora user-friendly in the classroom. Results showed an improvement in overall student grammatical accuracy in essay writing, however it was not significant. Results also showed the article, preposition, word form and plural to be the most commonly committed ESL errors, whereas spelling, verb tense and aspect, punctuation and connectors had the most improved accuracy over the course of the semester. Students reported neutral to negative attitudes to the use of online corpora, specifically because of a difficult interface and ability to interpret results. They also reported neutral to negative feedback about the use of error symbols, however enjoyed indirect feedback in general.

Keywords: ESL, corpora, online learning, indirect feedback, Computer Assisted Language Learning, grammar
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CHAPTER ONE: INTRODUCTION

The larger question of this research, “Does error feedback improve accuracy in an L2 classroom over time?” is largely in response to Ferris’ (2004) paper “The “Grammar Correction” Debate in L2 Writing: Where are we, and where do we go from here? (and what do we do in the meantime …?)”. While Ferris argued that few error correction studies have compared students who received correction to those who do not, my study will examine the use of error-symbols over time. While she also argued that in this type of longitudinal study, other factors apart from error correct may result in “improved accuracy”, I attempt to mitigate this issue by introducing a second party with the use of error-symbols—online corpora, thereby already including “another factor” in the study. As noted in Ferris (2004), student opinions of feedback are consistent in the fact that error feedback is regarded highly by ESL students and they contribute it to their success in L2 writing.

As mentioned above, studies done on error correction in L2 writing have been highly criticized and Ferris (2004) also notes about the effectiveness of such studies. Some studies that address the question, “Do students who receive error correction produce more accurate texts than those who receive no error feedback?” reported ‘yes’ (Ashwell, 2004; Fathman & Whalley, 1990; Ferris and Roberts, 2001; Kepner, 1991), while Polio et al. (1998) reported ‘no’. Another question, which address, “Do students who receive error correction improve in accuracy over time?” several studies reported ‘yes’, (Chandler, 2003; Ferris, 1995a, 1997; Ferris and Helt, 2000; Frantzen, 1995; Lalande, 1982; Robb et al., 1986; Sheppard, 1992) while Cohen and Robbins (1976) and Polio et al. (1998) reported ‘no’(p.51). However, there are some more current studies which address this issue. Bitchener (2008), Sheen (2007), Bitchener, Young and Cameron (2005) all conducted studies where those students who did receive written corrective feedback outperformed those students who did not. Therefore, the present research aims to
address the issue of improved accuracy over time by following teacher-identified and student corrected errors.

In addition to the error-symbols, effects of using online corpora with the error-symbols in L2 writing will also be researched. Recently, using corpora has been widely attended to in the ESL writing classroom. Universities are using corpus websites to teach students how to identify common grammar errors in their L2 and how to self-correct via corrective strategies. Commonly, learners rely on intuition to correct grammar in their second language, and oftentimes their knowledge is limited. Even advanced speakers of English can still sound non-native if they are using grammatical structures that are unused or uncommon structures in English. From this, students often will check with native speakers if their writing is correct (Yu-Jueng, 2009). While native speakers are able to check papers, and provide more suitable grammatically-correct sentences, they are unable to give a reason as to why they corrected it. Here comes the caveat with native speakers of a language—they are never trained to learn grammar in that language and are not knowledgeable about the explanation of grammatical forms beyond the present and past tenses (even the future tense can be difficult to explain). Because of this, non-native speakers are given explicit corrections without reasons as to why it was changed and will most likely leave unable to mimic what was done to their paper. However, through the introduction of online corpora, or more specifically COCA (The Corpus of Contemporary American English), intuition is no longer solely needed in that it offers students the ability to check the grammaticality of their sentences and give a second opinion to their intuition (Conrad, 1999). Having a searchable database to refer to that has authentic and comprehensive sources allows students to have a reference that transcends simple NS editorial intuition.
Yoon and Hirvela (2004) define a corpus as a multi-source database of authentic examples of both written and spoken language. A tool, such as corpora, used by second language learners would provide instantaneous examples for specific grammar questions. It provides searchable grammar points such as adding a part of speech, (e.g. noun, verb, preposition) after a sentence, or searching for a word lemma (every declination of a word or even what word may follow another word in a common word chunk, (e.g. break following spring in the word spring break)). In addition, corpora provides students with numerous examples of real-life and authentic English that learners may encounter outside of the classroom. Corpora uses examples from real speech and written texts that learners cannot get from typical inauthentic grammar books (Yoon, 2011). Therefore, corpora can be used in the classroom to a great extent to show learners authentic instances of English use. However, corpora can prove to be difficult to navigate and be non-intuitive, even for native speakers of the language (Yoon & Hirvela, 2004; Gaskell & Cobb, 2004; Kennedy & Miceli, 2001). While COCA does offer part of speech symbols that take out some of the guess work, learners may have an easier time navigating COCA having prior knowledge of these symbols. Being provided with an error-correction list that students would use first and in conjunction with the corpora may further aid in the use of corpora.

While attention has been paid to attitudes towards corpora and learners’ actual use (Yoon & Hirvela, 2004), and to corpora being used outside the classroom for students to self-revise (Yu-Jueng, 2009), further research is necessary to discover how useful corpora can be in the classroom with the L2 writing process, as opposed to other intervention methods students may commonly use, such as Google or online dictionaries. This research does two things: First, it continues current research about learner use of, and attitudes toward online corpora, specifically The Corpus of Contemporary American English (COCA). Second, it adds a new element to such
work: this project investigates whether learners can focus (their use of COCA) if they are provided a specific set of error-correcting symbols, and determines if COCA may be unable fix certain errors. Further, it discovers if learning occurs from the use of both corpora and the symbol list. The study used a combination of quantitative and qualitative data to determine usage of the symbol list and student interviews on how a corpus manages to facilitate (or not) self-error correction and lead to student learning.

Furthermore, a study done by Lee (2011) found that “…learning is enhanced through intelligible communication of student’s performance using the same criteria via task- or genre-specific feedback forms” (p.393). By using the process approach by assessing multiple student drafts, the participants are able to functionally use ‘teacher’ (researcher) feedback to edit their future drafts. As well as utilizing teacher feedback, the participant is able to fix their errors from the guided feedback, thereby having them actively participate in the writing process. Lee (2011) also assessed that teachers tend to overly focus on grammar feedback, while paying less attention to other conventions of writing, such as organization, style and content, which also play an important role in student learning. Although the present study’s aim is to chart grammar learning, the students are encouraged to focus on these other areas in their own editing process.
CHAPTER TWO: LITERATURE REVIEW

Literature reviewed for this study comes from two sources, first: the use of corpora, (Yoon & Hirvela, 2004; Tribble, 2002; Sinclair, 1991; Halliday, 1992; O’Sullivan & Chambers, 2006) and second: self-error-correction and error-feedback, (Ferris, 2002; Ellis, Sheen, Murakami & Takashima, 2008; Truscott & Yi-ping-Hsu, 2008; Ashwell, 2000; Van Beuningen, de Jong and Kuiken, n.d.; Chandler, 2003). By using and focusing on both of these areas, I examined if a connection will result from student self-correction of errors and corpora and if together they aid in student learning of grammar.

Yoon and Hirvela (2004) aimed to discover students’ perceptions and evaluations of corpora as an effective tool for L2 writing. What they found was that in general, students were positive about corpora, and found it useful in L2 writing. They also found that higher-level proficiency speakers with additional training in the use of corpora were able to use corpora in a more facilitated manner. They were perceived as having a stronger desire to improve the language in their L2, possibly through the use of corpora. Thusly, they found a correlation between a high motivation for improvement and the use of corpora. While their findings were generally positive about corpora, it must be noted that their sample size was small. Through my own study, while sample size will unfortunately still be kept low, I further pushed their study from mere attitudes towards corpora to the actual functionality of corpora for L2 speakers of English and its aid in error-corrective strategies.

O’Sullivan & Chambers (2006) looked at the use of corpora for English L2 learners of French, what changes they tended to make, how effective their changes were, and their evaluation and reaction to these tasks. While the outcome was generally positive, it proved to be greater among postgraduates than undergraduates. They also found the greatest amount of
changes in prepositions, and word choice. Since this study documented individual error, more research from this study is provided on the types of errors ESL students are committing and what percent change in error occurs over the period of 16 weeks.

There also has been research that examines the usefulness of corpora in the classroom, or specifically how to teach corpora in the classroom (Conrad, 1999; Yoon, 2011). Conrad (1999) examines how to use corpora in the classroom in terms of real language use. She also discusses an important issue with corpora that I have also found in my study—that “… corpus-based results do not tell us precisely how to teach…” (p. 16). Rather that corpora cannot tell us the answer, or explain which actions to take, but that corpora has the answers, and it is the teachers and the students who need to decipher them. She also emphasizes an important concept found in my own research that learners no longer need to rely solely on their intuition, but that the corpora can provide us with specific and concrete results that aid our intuition. Yoon (2011) also provides a further examination of research that tells us that through direct instruction about corpora with “proper training and assistance” online corpus-based materials may be an effective way to promote learner autonomy in their own L2 writing. He also discusses the importance of corpora having multiple sources of real and authentic language that students can use and may likely find in real-life situations. As well as the ability to use this resource to identify patterns in language that can help with the learning of grammar. From this, learners are able to use “an inductive approach” through which they can make their own discoveries about language through the numerous examples.

Watson Todd (2011) completed a study where learners self-corrected their own grammar through inconsistencies that were identified by the teacher and given to the student. The student then had to search for this error in the corpus and select 10 lines from the data and attempt to
identify the rule or pattern governing this grammar item. This study played on the importance of immediately using self-discovered knowledge and applying it to the correction of their own writing.

Gaskell and Cobb (2004) examined corpus use for sentence-level grammar revisions done by low-intermediate learners. Rate of error correction was high when the teacher provided the found error along with a URL that showed examples on how to fix the error. However, correction rates dwindled when the URL was removed and only the grammar error was found. Also through the use of pre- and post- tests, the researchers found sentence-level errors to have increased which further tells us that the use of corpus-based language as an intervention method for grammar correction does not lead to the acquisition of those grammar items.

Ellis, Sheen, Murakami and Takashima (2008) found that in dealing with English articles, written corrective feedback (CF) is effective and useful. A focus on direct and indirect feedback was done, where—“direct” referred to explicitly telling the students what they got wrong or changing it for them, and “indirect” feedback referred students to strategies to correct their errors. Even further than indirect feedback, they discuss metalinguistic feedback that supplies L2 learners with a sort of metalinguistic clue that their form is incorrect. Another examination was done between focused and unfocused CF, the former being on specific grammar points-local feedback and the latter being more global. In regards to their research questions-they found no real difference from focused or unfocused feedback. From this study, I saw the different types of CF and how they could be applied to my own paper. In this paper, I dealt exclusively with metalinguistic CF through the use of the error-correction symbols.

Truscott and Hsu (2008) looked at whether CF actually correlated with learning from the feedback. In this study, two groups had to write a narrative with one group underlining errors
with feedback, and the other group with no feedback. The first group found that their paper was significantly better in the second draft, however, when given the second task to see if the learners had learnt from the feedback, they found that successful feedback and improvements had no correlation to learning long-term. Thusly, improvements from previous tasks do not extend to newer tasks performed later and the students do no benefit from CF. However, their study was extremely limited in sample size, tasks and type of CF. They used only marking the location of the error, but gave no information about the type of error. They further state that this study does not present any evidence on the effects of error correction. Through their limitations, my study aimed to provide a more controlled context of error-finding through the use of symbols that both helped students to identify their error type and promote learning from this by continual and long-term use of the symbols and corpora.

Ashwell (2000) looked at grammar correction in a process in order to improved formal accuracy and if whether or not the final product is effective. His research questions were as follows, 1. Is the content feedback followed by form feedback pattern of teacher response superior to other patterns in terms of the improvements it brings about in student writing? 2. Is it necessary to separate form and content feedback and to give them at different stages in the writing process? They found a heavy reliance on the form feedback as well as an improvement in the formal aspect of their writing, but little improvement in the content. Two of the major constraints of this study that are also pertinent to my own are the relatively small sample size (50 students) and the teacher was also the researcher, in which the question of detachment is raised. This is something considered in my own study, and whether or not detachment was achieved by myself, criticisms of that nature will inevitably arise.
Van Beuningen, de Jong and Kuiken (n.d.) completed a study on direct and indirect feedback and improvement student’s overall written accuracy. They found that both techniques displayed an improvement in student’s writing, showing short-term effects for both, however only direct feedback showed long-term effects, however it was not significant. Their results mirror the Chandler (2003) study in that the reason for students producing long term effects for direct feedback is that students may be unable to “internalize” an assumed correction since they are unable to confirm whether or not the form is correct. Conversely a form corrected by the teacher may be more easily adopted since the correctness is implied.

Taking from these past studies, I aimed to merge the use of corpora and corrective feedback and its overall effectiveness in student learning over time. My study attempted to discover the usefulness of corpora alongside corrective symbols and if their conjunction leads to long-term use and whether or not the interface of corpora should lend itself towards the makings of an ESL friendly version.
CHAPTER THREE: THE STUDY

Research Questions

1.) Do students improve their ability to self-correct errors over time through the use of indirect feedback? And is the ability to self-correct errors aided by the use of corpora?

2.) Do ESL students find the Corpus of Contemporary American English, (COCA) useful in L2 writing and L2 writing courses and if so, how? In particular, if certain components of the COCA interface are confusing, can direct instruction (about those components) mitigate the problem?

3.) What are student’s overall evaluation of using the corpus in L2 writing and using the strategies on self-correcting student’s errors?

Research Methodology

Sample of the Study. The students involved in this study are 10 international students from ESL writing service courses who have taken an English Placement test and have been placed into these courses. This university is located in the Midwest and is a public tier 1 research university with over 40,000 students. The ESL service courses are designed to teach international students writing and satisfy the credits for a Standard English rhetoric course for American students. The student’s ages range from 18-35, depending on which ESL service course they come from, since there is an undergraduate and graduate component. However, the students who participated in this study were only from the graduate component. As well as, they were students from ESL 505, International Business Communication, whose majors were Management and Technology, primarily. Countries that the participants represented include: Turkey, Korea, Japan and Taiwan.
Research Design. To fulfill the research questions, participants had to first be introduced to both the coding symbols and COCA.

Training. On the first day of class, participants were taught the error symbols, as well as given a tutorial on how to use COCA. Participants were given a hard copy of the coding symbols and access to an electronic copy, as well as a handout that explained the basics of COCA. For a full version of the tutorial, see Appendix D. Students spent 60 minutes being taught how to use the four main features of COCA (list, chart, compare, and KWIC). They were given opportunities to follow along, as well as search on their own. A list of practice exercises followed the tutorial to give students some extra practice using COCA. Students were encouraged to use COCA to help correct their grammar errors in their essays. No grade was given to students for using COCA. It was also explained that their class was to follow the process writing approach in that there would be two-to-three drafts of every major assignment in the course.

The process writing approach as explained to the students is illustrated in the following figure:

*Figure 1: The Writing Process Approach using indirect written corrective feedback.*

<table>
<thead>
<tr>
<th>DRAFTS</th>
<th>First Draft</th>
<th>Second Draft (Optional)</th>
<th>Third Draft</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Condition (Teacher)</strong></td>
<td>Teacher edits student paper using coding symbols for a second or third draft.</td>
<td>Teacher edits student paper using coding symbols for a third draft.</td>
<td>Teacher finds remaining errors in the final draft.</td>
</tr>
<tr>
<td><strong>Condition (Student)</strong></td>
<td>Student revises paper using an intervention method.</td>
<td>Student revises paper using an intervention method.</td>
<td>Student receives final draft with errors</td>
</tr>
</tbody>
</table>
The Procedure

This study only focused on the reduction of grammatical errors in student’s essays using the process writing approach and two methods of grammar-intervention.

Throughout a 16-week course, students were assigned ‘major assignments’ that were to be fulfilled by the students. Major Assignments consisted of: Memo Writing, Summary Writing, Critical Analysis, and Case-Based Essay. Students completed two-to-three drafts of every assignment based upon a timeline given by the teacher. For every student, the teacher found and coded errors in the student’s drafts and the students had to revise those errors for each following draft. The second draft was optional due to time constraints; however some students elected this option for every major assignment.

After the first major assignment (memo writing) students received a chart of the most common errors they were committing in their drafts. This chart is a version of the coding symbols that has the frequencies of the errors they are committing. This chart accomplished two things: (1) It allowed the students to focus on what errors they commit the most and attempt to reduce them in upcoming drafts and assignments and (2) For me to be able to track their errors over time. They were also given this chart a second time after the first draft of the third major assignment (Critical Analysis). They were told to find their three most committed errors and when writing their first draft for the final major assignment (case-based essay) to focus their grammar revisions in those particular errors.
Near the end of the semester, a “Common ESL Error” Quiz was given to the participants (See Appendix E). They were told to fix the errors that were found for them on the paper and explain what method they chose to correct the error. A second assessment was given to the participants that assessed their ability to use COCA (See Appendix B). From these two assessments, I determined: 1). what errors the participants are able to fix, and 2). what their abilities in using COCA or what other intervention method they are using.

In order to reduce bias in using my own class, papers were not given a typical A, B, C, D grade. Students were made aware of this at the beginning of the semester. Papers were awarded the same amount of points, unless a re-write was necessary. The rewrite was only determined on a content basis, rather than on a grammar-basis. Grammar was also of little concern percentage-wise when it came to evaluating student essays. Based on 100 point scale, grammar would only be considered to be 5% of their total score.

Prompts for Treatment

Four major assignments were given to the students that were determined by the ESL 505 curriculum.

Assignment 1: Writing an Informative Memo
Assignment 2: Writing a Summary of an Article
Assignment 3: Writing a Critical Analysis of a Case
Assignment 4: Writing a Case-Based Essay

All assignments were familiar to the ESL curriculum and were determined to be given to the students based on a business writing curriculum. Each assignment also demanded differing grammatical aspects, and from these four assignments, 19 common grammatical errors occurred.
Figure 2: Coding Symbols. (Abbreviated)

<table>
<thead>
<tr>
<th>Error Type</th>
<th>Coding Symbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb Tense</td>
<td>vt</td>
</tr>
<tr>
<td>Verb Aspect</td>
<td>va</td>
</tr>
<tr>
<td>Verb General</td>
<td>+verb</td>
</tr>
<tr>
<td>Subject Verb Disagreement</td>
<td>sv</td>
</tr>
<tr>
<td>Pronoun Person Shift</td>
<td>ps</td>
</tr>
</tbody>
</table>

(Adapted from Contract Learning by Fred Davidson, 2007, unpublished.)

In every major assignment, errors were found by me using the coding symbols above and were put next to the grammatical error inside parentheses. Errors and words that contained the error were highlighted in red. All reformulations were done by the students in the following drafts and the same procedure was done for every draft by me.

For every assignment, the following was calculated: 1). Number of total errors for every student in every draft, and 2). Number of individual errors of every student for every draft. The percentage of errors was calculated by dividing the number of words (numerator) per essay by the number of errors (denominator) per essay. As determined by me, the use of calculation by T-units was avoided since, as defined by Hunt (1965), t-units are sentences which contain both the main and subordinate clauses, with any “non-clausal structures” within or apart of the sentence. Because the level of students within ESL 505 differs greatly, the complexity of their writing differs as well. Words per error was a way to omit grammatical simplicity or complexity and calculate errors solely based on word count.

\[\text{For the full list of symbols see Appendix H}\]
CHAPTER FOUR: MATERIALS

Technology

corpus.byu.edu was the main technological component used in this study. Developed by Mark Davies of Brigham Young University, it contains 450 million words of text from academic papers to spoken speech. The corpus is regularly updated and within it you can search for words, phrases, parts of speech, and collocates. Figure 3 below is the first interface users may encounter when entering the site.

Figure 3. COCA Interface

In “search string”, users may input their word or phrase they want to search. For ungrammatical sentences, if the unknown part of speech is known, the POS LIST may be utilized, as seen in figure 4 below:
Users may click on the part of speech to insert either before or after their word or phrase. For example, if the user has written the following ungrammatical sentence, “[…] all of opportunities[…]”, and they are aware it is an article error. The user may input “all of opportunities” into the search string and select “art.ALL” to be inserted between “of” and “opportunities”. Once the user clicks “search” the following figure bellows displays the search results.

*Figure 5. all of [at*] the opportunities: Search Results*

From these results, users may see corresponding sentences with instances of either spoken or written speech. The user must make a decision as to what the proper article is. From
the figure above, “the” has the highest frequency of occurring between “of” and “opportunities”. In this way, COCA is able to use any part of speech to fix grammatical sentences. However, a user must first know what is ungrammatical, understand what to input into COCA, and make a decision on choosing the proper result. Therefore, an intermediate to advanced knowledge of English grammar is necessary in order to interpret results from COCA.

**Assessment**

For the purposes of obtaining information about students’ ability to correct errors and utilize COCA, two assessments were given to the participants.

**The Common ESL Error Quiz.** A quiz was administered to the participants. See Appendix E for the full test. The test utilized common errors made by ESL students that were coded with the error symbols used in the class. The students had to fix the error correctly. From this assignment, it was determined what errors students may properly fix, and what errors students are unable to fix.

**The COCA Assessment.** This was given to participants to determine the amount of knowledge students have about the Corpus of Contemporary American English (COCA) in regards to using COCA to find corrections to commonly made ESL grammar errors. This test functions in part as an answer to research question one—is the ability to self-correct errors aided by the use of corpora. This test will also help us determine what parts of COCA may be particularly difficult or unintuitive. As well as, if students are unable to use COCA for certain areas, I will know what errors are difficult to input into COCA and what other forms of intervention they are using. See Appendices A, B, and C for the full test specifications, and the test and test key.

**Questionnaire.** An anonymous questionnaire was given to the students after their participation in the course ended. The questionnaire was used to determine the participants’
opinions about the use of the coding symbols, as well as COCA, and their view on their personal change in their English grammar abilities. The questionnaire generally asked the students to rank on a scale of 1-10, one being the least likely, and 10 being the most, about their opinions regarding using the error symbols in class, ease of understanding the symbols, future use, and their use with COCA. In addition, questions using the same ranking system asked students about the ease of using the COCA interface, and what particular problems they might have had. This questionnaire gave some insight about using coding symbols in the classroom, and with COCA, and what issues ESL students may be facing with COCA.

**Interviews.** An interview was also given to the students that had around 20 semi-structured questions (see Appendix G). This interview was given in order to understand more in depth about how students fixed their grammar over the course of the semester, and within the individual assignments. It also aimed to understand student perception of assignment difficulty, effort that was given to each assignment, and specific grammar issues. Lastly, it asked the students some questions regarding their personal use of COCA throughout the semester, as well as their thoughts on COCA. Three participants chose to do the interview, with two participants coming from Taiwan and one from Korea.

**Assessment Development and Rationale**

The purpose of making a test, or assessment, is to see ahead into the future and understand what effects it will have. From that vision, it is our task as test makers to attempt to achieve that effect. This is what is popularly known as effect-driven testing (Davidson & Fulcher, 2007). While it is the test maker’s job to observe, when the test maker is the teacher, observation and evaluation is critical. When it is a teacher who makes a test for their students,
within the construct of what is being learnt in the classroom, there is a great need for high validity. In this section I will discuss a teacher-made test for the classroom regarding validity and reliability and how that has affected the format, trialing, and revision of the test.

**Validity.** Through the trialing of this test, I have been able to improve the evidence of validity, by means of reflecting on student understanding and perception of the assessment, as well as my own awareness of testing format and language.

In reference to validity, Messick (1989) states that it is:

> An integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment (Messick, 1989, quoted in Fulcher and Davidson, 2007, p.13).

From this quote, it is understood that validity is determined through a set of “evaluative judgments”—through two ways: 1). Theoretical Rationales, and 2). Actions. First, I will discuss actions, then theoretical rationales.

**Valid Actions.** Those tests which are most validated are those that have been trialed, piloted, tried out, etc. I understood this trial as a sort of evidence from the students, or test-takers themselves—how they did on the test, how they perceived the test, and how they understood the test. By doing this, the tester may build their validity argument through real-word evidence and data, a means of which to alter the test, and to improve the inferences of validity. An inference made from a test is dependent on “multiple sources of empirical evidence”. This can help to formulate the appropriateness of the assessment, related to the scores and consequences of the assessment which can impact the meaning of a measurement. This inference can be used to make a claim about our test takers based on their performance of the test (Weideman, 2012). Validity in my assessment has been argued through trialing with my own students. Through this, I have
been able to create an improved version of the assessment by inferences I made based on student perspectives during the assessment, as well as the interpretation of the results, which helped to improve both the adequacy and appropriateness of the assessment.

Menand (2001) states that, “we know an outcome is not right because it was derived from immutable principles, but because it was reached by following the correct procedures”. In that spirit, procedures should be taught to participants in a project like this. Both issues with the test format, and the COCA interface may fuel a procedural argument. Test format must be intuitively procedural, as testing format and testing instructions represent a cultural hyper-archetype in that within one’s own testing culture, testing format and procedures are subconsciously understood and followed (Davidson, 2013). The directions are both written and spoken allowed, students may not start until the teacher says so, questions are neatly laid out with space for an answer—and if this innate procedure is deviated from in any way, proper instruction must be given in order to perform the procedure at hand, or else confusion may ensue. Therefore, when making a test, cultural archetypal formats and language must either be understood by the tester from the represented cultures taking the test, or explanation about the procedure of taking this test must be explained explicitly, or therein lies a cultural disconnect between the test and the test taker.

Another procedure that must be followed is proper COCA knowledge. COCA is an interface that is taught, and instructed how to use. COCA uses a set of non-intuitive symbols, with an interface that is difficult to use. Even corpus.byu.edu has a COCA video tutorial on how to use the different parts of COCA. However, in order to definitively understand COCA, extensive work must be done. Therefore, understanding the proper procedure to come to the correct outcome is critical when working in COCA. COCA will not provide the correct answer,
but it has the tools to derive the correct answer and the user must use their own judgment to choose.

**Valid Rationale.** Another method by which to make a test have increased validity is to provide a theory or rationale of why and how the test was made. This is what is known as front-loading, or putting your energy in early on in the test creation process (Davidson & Fulcher, 2007). After the assessment was made, through reverse-engineering, the spec was created. The test spec itself allowed for a greater understanding for not only myself, but to others, to understand the purpose for the creation of this assessment. In addition, another purpose of this assessment if to find a new way to made COCA accessible to learners. From both my research and the results from this assessment, it is clear that an ESL-friendly interface is necessary, as both complaints from native and non-native speakers of English say that COCA requires too much energy and explanation.

**Reliability.** In this section of the paper, I will discuss how reliability of the test affects the results of the COCA assessment as performed by my students. Later in the paper, I will discuss a quantitative item analysis and explain 1). if students could use COCA for “X” error, and 2). how they used COCA. From this, I determined what errors are facilitated by COCA, as well as what parts of COCA are difficult for ESL learners. For all errors, only the “list” and “collocates” functions in COCA were used by the students.

Reliability is the degree to which results are consistency reproduced. These results can be from the population itself, or the error produced from the test. Test administration produces two different error types: systematic and random. Systematic error may be defined as errors produced by the test takers themselves such as level of anxiety, tiredness, or depression, or what the test was intended to measure versus what it may actually measure. Random error is what may affect
the test takers by pure unplanned event, such as an unplanned anxiety attack, or a recent marriage proposal—both of which could affect what their real score on the test would be like under normal conditions (Fairchild, n.d.).

In order to estimate reliability for this test, an internal consistency was measured. This is where the interest lies with the consistency of scores from the items measured (Crocker & Algina, 1986; DeVellis, 1991). This may be measured when items are similar in nature and reflect one construct, or rather, do all items measure the same construct? This can be done using Cronbach’s coefficient alpha. Fairchild (n.d.) states that this measurement is in the “lower bound” of reliability.

The argument that COCA knowledge must be advanced before being able to search properly can fuel a reliability and validity argument for this test. There are numerous factors that affect reliability such as: time limits, test length, group, questions and content. All of these can challenge the reliability of a test (Crocker & Algina, 1986; DeVellis, 1991). In the next section, I will demonstrate how some of those factors may have changed from the trial session of the test in order to improve both the reliability and the validity.

Assessment Development: Test Trial.

In this part of the paper, I will go through the trialing of the test in my class and how that affected the new versions of the test. First, I will discuss the purpose of this test, and then issues with questions, instructions, language and format. The revisions below made to the exam were done to improve the validity and reliability of the test.

Purpose\(^2\). The test, or rather assessment as it is called for this paper, was created for students to take in an English as a second language classroom. It was created in order to gauge

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\(^2\) For a comprehensive understanding of the purpose and creation of this test, see Appendix A for the test specifications
student understanding of four things: 1) Grammar Errors, 2) Grammar Corrections, 3) Use of online corpora, or 4) Use of another form of grammar intervention. From these four main areas, I would be able to understand what grammar errors students are able to use in a facilitated manner with COCA, or for what errors COCA seemed unusable and how students went about correcting those errors. Ultimately, this test wanted to determine if students found COCA useful, or not and why. The purpose of this exam was explained to the students. This was so that there was an understanding between teacher and student as to what the purpose was. By explaining the purpose of the test to the students, reliability may be increased in that testing content does not appear too broad. As students may interpret an exam differently than intended, by explaining what is meant to be directly measured by this exam, it may narrow the content perceived by the students.

**Trialing Issues: Student Questions and Revisions.** The assessment was given in my ESL classroom over an 80 minute period, however if students did not finish—they were instructed to finish the assessment at home, same rules applied. The students were first told to read the instructions, and then they were walked through a sample problem by the instructor. After students began to take the assessment, I found the same three questions being asked repeatedly: 1) How to use the part of speech (POS) list with the error symbols in COCA, 2) how to complete the first problem on the test³, and 3) How to actually use COCA for these errors. The first issue I tackled with every student individually as the questions arose. Since this classroom was not a computer lab, students had to bring their own individual laptops and log-on time was staggered, which therefore made questions about the assessment itself staggered. Students were having issues understanding how the error-symbols I gave them were to be used with the part of speech list in COCA. After explaining to the students how to use the two together, I revised a portion of

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³ See appendix B for test items
the exam instructions (See Appendix A) to reflect a better walk-through of the POS list in COCA through the use of explicit graphics and step-by-step instructions. While this revision (version 3.0) has not yet been trialed out, the hopes are that these instructions would facilitate a greater understanding of this list and aid in student completion of the assigned exercises.

Another issue that was discovered with the test trial was an issue with the first question⁴.

Figure 6. Sample Test Item 1

After explaining this question to multiple students on how to use it in COCA, I realized that this particular error was non-intuitive to use in COCA, and would be better suited for another website wordandphrase.info. Since my students have not been taught wordandphrase.info since the first day of class, it would be unreasonable to ask them to use a second and unfamiliar interface.

Now, this problem is a second example problem that I would walk the students through step-by-step. It is different from the first example problem in that that one is completed for the students, but in this one the students would have to use COCA themselves having being facilitated by the instructor. I chose to incorporate this extra sample problem because I realized students needed more guidance on actually using COCA. Simply explaining how to do an item that was already done for them was not enough. They had to actually use COCA with the teacher in order to use it by themselves.

**Format and Language: Format.** After the test trial, the format, or layout, of the test was neither efficient, nor had an intuitive use of space. The original versions (version 1.0 and 2.0)

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⁴ This is now given as an example item two in version 3.0
had the students write out their responses, as seen in figure 6. Therefore, the following changes were made resulting in version 3.0:

*Figure 7. Test Layout Version 3.0*

This improved version allows for more efficient and intuitive use of space through the use of a table. This also allows the numbering system, and the spacing be seen more clearly.

*Language.* Another improved factor from versions 1.0/2.0 to 3.0 was the through the particular use of language in the assessment. As seen from figures 6 and 7 above, “COCA Steps” was changed to “How did you solve this error?” This new language stemmed from the questions my students had about what to write in “COCA Steps”. As well as, since students were allowed to use other methods of intervention, the language “COCA Steps” seemed non-intuitive, as they were unsure if they had to write something if they did not use COCA. The new language evokes a greater understanding for what the students have to write in that section, as well as allows for other methods of intervention explanation besides COCA.
CHAPTER FIVE: DATA ANALYSIS

The revisions done on student’s writing were done solely by me. For lack of resources, no other lecturer intervened in the process, therefore, not all errors may have been found.

Mean words per error in each major assignment of students' drafts was calculated, which was the total number of words for every individual assignment divided by the total number of errors. Also, descriptive statistics and paired t-tests were conducted for every first draft (pre-feedback), as well as the final draft (post feedback) for every major assignment. A paired t-test was also done for the first major assignment draft one pre-feedback completed 2 weeks into the semester with the final major assignment draft one pre-feedback completed 12 weeks into the semester. Significance will be reported at alpha= .05.

The Impact of Indirect Error Correction for every first draft for the four assignments

Table 1. Indirect Error Correction over the course of 16 weeks

<table>
<thead>
<tr>
<th>Number of Participants</th>
<th>Assignment</th>
<th>Memo Draft 1</th>
<th>Summary Draft 1</th>
<th>C.A. Draft 1</th>
<th>Decision Essay Draft 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>100 Total Words</td>
<td>263.20</td>
<td>316.30</td>
<td>617.30</td>
<td>818.55</td>
</tr>
<tr>
<td></td>
<td>Mean WPE</td>
<td>18.02</td>
<td>31.63</td>
<td>19.29</td>
<td>20.46</td>
</tr>
<tr>
<td></td>
<td>Standard Deviation</td>
<td>8.68</td>
<td>46.97</td>
<td>13.18</td>
<td>8.13</td>
</tr>
<tr>
<td></td>
<td>Variance</td>
<td>75.29</td>
<td>2206.00</td>
<td>173.73</td>
<td>66.15</td>
</tr>
</tbody>
</table>

Paired One-Tail T-Test
Pre Feedback Major Assignment One
Major Assignment Four

alpha=.05

5 For every decision draft data, one participant was omitted since both drafts were plagiarized, normal student errors produced would be unable to be calculated.
The Impact of Indirect Error Correction within every draft for each major assignment

Table 2. Indirect Error Correction from Draft 1 to Final Draft

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Pre Feedback Total Words Per Error Draft 1</th>
<th>Post Feedback Total Words Per Error Final Draft</th>
<th>T-test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memo</td>
<td>18.02</td>
<td>62.10</td>
<td>0.00871*</td>
</tr>
<tr>
<td>Summary</td>
<td>31.63</td>
<td>25.96</td>
<td>0.21944</td>
</tr>
<tr>
<td>Critical Analysis</td>
<td>19.29</td>
<td>40.71</td>
<td>0.00343*</td>
</tr>
<tr>
<td>Decision Essay</td>
<td>20.46</td>
<td>22.42</td>
<td>0.16740</td>
</tr>
</tbody>
</table>

*sig at alpha = .05

Students did not receive indirect error correction for the final major assignment draft one

Most Commonly Committed Errors across First Draft Assignments

Table 3. Most Common ESL Grammar Errors

<table>
<thead>
<tr>
<th>Error</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Articles</td>
<td>23.11</td>
</tr>
<tr>
<td>Plurals</td>
<td>12.2</td>
</tr>
<tr>
<td>Word Form</td>
<td>10.58</td>
</tr>
<tr>
<td>Prepositions</td>
<td>8.21</td>
</tr>
<tr>
<td>Omit</td>
<td>6.91</td>
</tr>
<tr>
<td>Punctuation</td>
<td>6.47</td>
</tr>
<tr>
<td>Connectors</td>
<td>5.18</td>
</tr>
<tr>
<td>Subject Verb Disagreement</td>
<td>4.85</td>
</tr>
<tr>
<td>Sentence Meaning/Structure</td>
<td>4.85</td>
</tr>
<tr>
<td>Verb Tense</td>
<td>4.64</td>
</tr>
<tr>
<td>Informal Language</td>
<td>3.13</td>
</tr>
<tr>
<td>Verb Aspect</td>
<td>2.91</td>
</tr>
<tr>
<td>Verb General</td>
<td>2.91</td>
</tr>
<tr>
<td>General</td>
<td>2.48</td>
</tr>
<tr>
<td>Spelling</td>
<td>2.37</td>
</tr>
<tr>
<td>Uncertain pronoun ref</td>
<td>1.29</td>
</tr>
<tr>
<td>Pronoun Number shift</td>
<td>0.43</td>
</tr>
<tr>
<td>Pronoun Pershift</td>
<td>0.32</td>
</tr>
</tbody>
</table>
Percent Change in Error

Table 4. Percent change in grammar over 16 weeks

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spelling</td>
<td>90.9</td>
</tr>
<tr>
<td>Verb Tense</td>
<td>84.83</td>
</tr>
<tr>
<td>Punctuation</td>
<td>79.78</td>
</tr>
<tr>
<td>Verb Aspect</td>
<td>72.89</td>
</tr>
<tr>
<td>Omit</td>
<td>56.93</td>
</tr>
<tr>
<td>Connectors</td>
<td>54.04</td>
</tr>
<tr>
<td>Sentence Meaning/Structure</td>
<td>26.97</td>
</tr>
<tr>
<td>Plurals</td>
<td>25.36</td>
</tr>
<tr>
<td>Subject Verb Disagreement</td>
<td>-11.95</td>
</tr>
<tr>
<td>Word Form</td>
<td>-6.3</td>
</tr>
<tr>
<td>Prepositions</td>
<td>13.59</td>
</tr>
<tr>
<td>Articles</td>
<td>62.6</td>
</tr>
</tbody>
</table>

Results Analysis. This results section may answer the first half of research question two: Do students improve their ability to self-correct errors over time through the use of indirect feedback? From the above results, I saw no significant difference from the first major assignment pre-feedback mean total errors for draft one to the last major assignment pre-feedback mean total errors for draft one. While there was an increase in words per error, $p=0.38$, and $\alpha=0.05$, suggesting students have improved their ability to produce fewer errors over time, it is not significant. Further research or a more longitudinal study could be completed in order to see if learning occurs from the use of indirect feedback and corpora.

In regards to students improving their ability to self-correct errors over time through the use of indirect feedback, from the first memo assignment to the critical analysis assignment, a span of six weeks, I saw a significant reduction in error for both of those assignments, with a slightly more significant reduction for the critical analysis assignment, suggesting students did improve their ability to self-correct their errors.
While the final major assignment did not produce significant results from draft one to the final draft, in this assignment students received no indirect feedback from teacher except one. The students were told to give grammar feedback to each other, coding their partner’s essays. Therefore, error reduction from the first draft to the final draft was completed solely by the students themselves. In these two assignments, 3/9 students increased their errors, while 6/9 decreased their errors. From this result, over half of the students were able to increase their words per error and produce a better assignment grammatically without indirect feedback from the teacher.

From table 1, there is also an increase in fluency, as total words per error increased from the first assignment at 263.2 to the final assignment at 818.5. While all four assignments had no maximum word count, the first two assignments were to be no more than a page, while the last two were to be under three pages. From this, I still saw positive gains in fluency, and while accuracy did increase as well, it was not significant.

The four most commonly committed errors were, starting from the most commonly committed, articles, plurals, word forms and prepositions, reflected what O’Sullivan & Chambers (2006) found in their study of L2 French learners of English. The errors with the greatest amount of change over the course of the 16 weeks were: spelling, verb tense, punctuation and verb aspect, while there was an increase in article and preposition error. However this may be due to the fact that the assignments got increasingly more complicated and the total word count increased significantly,
Assessment Results

**Grammar Items.** This written analysis displays 1) the error type given to the participants, 2) their input into COCA, and 3) their results. It is a qualitative analysis about the reliability of their choice of input into COCA and their chosen result.

1. Some of the staff might (+verb) against this modification because of the feeling of uncertainty.

**Error type: Phrasal modal**

| COCA Input | “Might [v*]” |
| LIST function | “[v*] against” |
| “[v*] might” |

For the first input, top results yielded “be” at the most frequent answer. The second input yielded, “voted, leaned, leaning, is”. The last input yielded that a verb must follow “be”. All students who chose those input methods found the correct answer: “be”. One student used their own intuition as well as google, and put the answer, “fight against”. While grammatically correct, in the context of the sentence this is the wrong choice. Therefore, based on student method of input and correction choice, reliability is high for the use of phrasal modals in COCA.

2. To implement the modification the company need(sv) to make an extra investment of $2.8 million and this is nearly 10% of total project cost.

**Error type: Subject-verb**

| COCA Input | “the company need” |
| LIST function | “the company needs” |

Most students typed in “the company need vs. the company needs and assessed the results based on frequency. One student misunderstood the error and therefore used COCA incorrectly, and many students relied on self-intuition to correct this error. While, reliability for COCA to yield the correct answer is high, intuition for COCA use on this item is low. The change needed to this item is based on a 50% chance of correction, it can only be one of two options. Therefore, it is natural for many students to use their own knowledge. For this item, students must understand that COCA will only show them results where the subject-verb agree and therefore, based upon what COCA shows them, they need to make a decision from there. Therefore, while reliability is about 60%, the use of subject-verb agreement for this error type in COCA may not be entirely necessary.
3. This is [a both time(awk)] and money consuming issue.

Error type: Awkward syntax

<table>
<thead>
<tr>
<th>COCA Input</th>
<th>“a both [nn*]”</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST function</td>
<td>“both a time”</td>
</tr>
<tr>
<td></td>
<td>“a both time”</td>
</tr>
</tbody>
</table>

Students tried to type [nn*] or noun after “a both” into COCA, as well as “both a time” and “both a time” while assessing the frequency of results and the answers that COCA gave them. Many students found this error difficult to analyze, and it was brought up in the end of class as they wanted the instructor to show them how to answer the problem. As this error type is “awkward syntax”, students have to use COCA to confirm their initial guesses. Most syntax errors tend to be quite longer than this example, and therefore COCA may not be intuitive to use at first. However, once a student can have a couple different responses to input in COCA, they may use COCA to confirm their answer, based upon frequency of result and the responses that COCA gives. Therefore, reliability for awkward syntax is low, however COCA’s ability to produce the correct answer once initial guesses are made, is high.

4. This modification can contribute (+prep)(+art) objectives of Project C most since there is a possibility of increasing market share.

Error Types: Preposition and Article

<table>
<thead>
<tr>
<th>COCA Input</th>
<th>“contribute [i*]”</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST function</td>
<td>“[at*] objectives”</td>
</tr>
</tbody>
</table>

Students typed in “contribute[i*6]” for the first error and “[at*7]objectives” for the second error. COCA results for the first error are: “to”, “in”, “forward”. Students chose “to” as the correct answer. Some students did not ultimately use COCA for the second error which was an article error, as oftentimes they go with the most frequent article, or “the”. In this case, “the” is the correct answer. However, “the” may not always be the correct choice, and as determine by the COCA results, using COCA for common noun article errors can find the correct result. Therefore, reliability for prepositional and article errors is high, most notably for common nouns in regards to articles.

5. Without a doubt(p) all (+prep) (+art) modifications are important, however, there are pros and cons in each of these modifications.

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6 [i*] is the symbol for preposition in COCA
7 [at*] is the symbol for article in COCA
Error Types: *Punctuation, Preposition, and Article*

**COCA Input**

“without a doubt”

LIST function

“all [i*] [at*]”

[at*] modifications

For the two latter errors, the students used the above method in order to fix each error, resulting in the correct answer. For the first punctuation error, many students typed the error into COCA, using the results to see that “without a doubt” requires a comma after it. Many students did not find that COCA has punctuation in its POS list, as this would have helped in determining the correct response. Also, some students relied on knowledge and intuition in order to fix the punctuation error. As mentioned above, reliability for prepositional and article errors is high, as well as from this analysis, punctuation errors.

6. Some noise would be generated from the support stuff(sp) because this skills training could represent a speculation form(sp) the top management that they do not have enough ability to start the plant up smoothly.

**Error Type: Spelling**

**COCA Input**

“support st*”

LIST function

“speculation f*”

“[i*] the top”

Many students typed “support st*” and “speculation f*” as well as one tried “[i*] the top” in order to solve the spelling errors. In COCA, if you put an asterisk after a word with only half or some of it’s spelling, it will give possible spelling results. One issue with using COCA for spelling errors is that the students must first have an awareness of what word they are looking for, and context may help this. Another student used google to fix this error, and others relied on intuition. Reliability for this item is moderate, however COCA will find the correct spelling, and students may choose the correct response if context is understood. Therefore, COCA may be used for spelling errors.

7. This modification can grow workers with higher skills to solve problem(pl).

**Error Type: Plural**

**COCA Input**

“solve [nn*]”

LIST function

“solve problem”

“solve problems”

Many students typed in “solve [nn*]”, or solve problem vs. solve problems assessing frequency and the results. For the students that used these two methods, they achieved the proper results. Many other students relied on intuition as this error has a 50% chance of
being right or wrong, therefore, the correct answer must be the plural form of the incorrect non-plural form. Reliability for this error type is moderate, however COCA yields correct results. Therefore, COCA may be used for incorrect plural forms.

8. For the above reasons, it is difficult to adopt this modification at this stage, because modifications should be adopt(vt) quickly to improve the(oart) Project C.

Error Types: Verb Tense and Article Omission

<table>
<thead>
<tr>
<th>COCA Input</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>COLLOCATE</td>
<td>“adopted 0,1”</td>
</tr>
<tr>
<td>function</td>
<td>“adopt 0,1”</td>
</tr>
<tr>
<td>LIST function</td>
<td>“be adopt”</td>
</tr>
<tr>
<td></td>
<td>“be adopted”</td>
</tr>
<tr>
<td></td>
<td>“be ado*”</td>
</tr>
</tbody>
</table>

Students used numerous different aspects of COCA for the verb tense error. One students typed in “adopted 0, 1 in COLLOCATES” and “adopt 0, 1 in COLLOCATES”, other students typed “be adopt” vs. “be adopted” assessing frequency, and one student typed “be ado*”, while the students who did not use COCA relied on intuition. All the above methods yielded the correct response. While those students who used prior knowledge only to solve the error got the correct response, those who first used intuition and tested their intuition also got the correct response, however with higher reliability, as COCA served as a checking mechanism for their knowledge. Reliability for verb tense errors is high. Therefore, there are numerous ways in COCA in order to assess verb tense errors.

Many students were unsure on how to use COCA for the article omission error. As well as my own analysis of this error type has been unable to use COCA for proper noun article errors. However, the symbol “oart” means omit error, and therefore finding the correct answer is possible. Therefore, the use of COCA for infrequent proper noun article errors is still being determined.

9. If GE delays the introduction of PermaTuf C, they have to take the risk that competitors might introduce new products first and then gain considerable market share ahead of GE, consequently, the potential loss of announcing the new product late may exterminate the cost saving.(rodiv)

Error Type: Division of a run-on sentence

<table>
<thead>
<tr>
<th>COCA Input</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST function</td>
<td>NA</td>
</tr>
</tbody>
</table>

No student was able to use COCA to fix this error. As this is a run-on sentence, one of the ways to use COCA would be to attempt to divide this sentence in multiple sentences.
and input phrases that seem ungrammatical. Reliability for this error is low. Therefore, use of COCA for run-on sentences is undetermined.

10. Although environmental improvement costs 1.5 million, which is far less than 10% of the total budget to implement, the union will give pressure to push other plants to install similar modifications, which will lead to a high(pos) cost in Louisville.

Error Type: Part of Speech

| COCA Input | “lead to [j*]” |
| LIST function |
| COLLOCATE | “cost” 0,1 [j*]” |

Few students used COCA for this error. Some typed in “lead to [j*]” or typed in “cost” in WORD(S) & type in “[j*] 1, 0 in COLLATES”. Many students found frequent usage of “high cost” leading them to believe that this was not an error. However, contextually a comparative form is needed in this sentence. Reliability for this part of speech error is low. However, use of COCA for part of speech errors is undetermined.

11. Hence, this modification is very important and it is the action (+conn) must be taken as soon as possible since this is a long term plan that can be conducted.

Error Type: Connector

| COCA Input | “action” 0,1 |
| COLLOCATE | “[conj. ALL]” |

Some students typed “action” into collocates, then [conj.ALL] from the POS list, and action [c*]” which resulted in “action and” and “action that”. Students who used COCA for this error found the correct response. While many other students relied on their intuition fixing the error with either “that” or “which”. From this, reliability is low for this connector error; however it may be due to the fact students were unsure of how to use COCA to fix this error, since those who did, managed to find the correct answer. Therefore, COCA may facilitate finding connector issues, but more assessment is needed.

**Free-Response Questions.** Two free-response questions were asked to the students: 1). Do you think COCA is useful for ALL of the above errors? If not, which errors do you think COCA is NOT useful for? Please explain., and 2). Do you think you will use COCA in the future
1). Do you think COCA is useful for ALL of the above errors? If not, which errors do you think COCA is NOT useful for? Please explain.

For the first question, many students replied that it is difficult to use COCA with “spelling, run-on sentences, omit article, too specific errors, sentence structure, proper nouns and sentence meaning” However, COCA is good for article errors. Ultimately, some students replied that it needs a person’s ultimate diagnosis, and mostly you first need an initial analysis of the error.

2). Do you think you will use COCA in the future after this course? Why or why not?

For the second question, students found the following errors facilitated by COCA, “preposition, article, and word choice”, and that for the future they may use COCA for these errors. Some students also stated that COCA provides many examples to sound “American”, COCA is useful to check an initial analysis of a grammar item, but that it has a difficult interface, it is time consuming, and complicated.

Test Data. This section displays the data in a quantitative form from the test. First I show which error types were revised correctly using any intervention method, then I show results for error types that were revised correctly using COCA only, then I demonstrate significance using a t-test to display if using COCA and getting the correct response is significant to using another form of intervention. For the t-test, in order to show significance, alpha = .05. Dichotomous scoring was used in that a corrected error resulted in one point, and an incorrect revision resulted in zero points awarded. Correct responses are counted if the individual correctly revised the error and kept the original intent of the sentence. If the individual revises a sentence with proper grammar, however the intent has been changed, this will result in having achieved the wrong result. The following is how the below percentages were calculated: For an error type, such as “word choice” students were given one point for a correct revision. For example, if out of 12 students, if nine revised the sentence correctly, 9/12 got the correct answer or 75%. For the
results using COCA, only the participants who chose to use COCA were calculated, resulting in a different N or number or students for every error type. The percentage is calculated based on those who used COCA and whether or not they correctly revised the sentence. Therefore, for an error type if six students used COCA and five correctly revised the sentence, 83.3% got the question correct. In order to calculate the weighted average, I multiplied the percentage correct by the number of attempts for each respective item. I did this for all items and added the result. Thus number was then divided by the total number of attempts. This method allowed me to get a clearer picture on the overall performance of the assessment since items with more attempts would have more value attached.

Table 5

<table>
<thead>
<tr>
<th>Error Type</th>
<th># of Students using COCA</th>
<th>COCA Success Rate</th>
<th># of Students using Other</th>
<th>Other Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word Choice</td>
<td>10</td>
<td>100%</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Phrasal Modal</td>
<td>8</td>
<td>100%</td>
<td>4</td>
<td>75%</td>
</tr>
<tr>
<td>Subject-Verb</td>
<td>7</td>
<td>100%</td>
<td>3</td>
<td>66.7%</td>
</tr>
<tr>
<td>Preposition “to”</td>
<td>10</td>
<td>100%</td>
<td>2</td>
<td>100%</td>
</tr>
<tr>
<td>Art. w/ Common Noun</td>
<td>7</td>
<td>100%</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Punctuation</td>
<td>8</td>
<td>87.5%</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Preposition “of”</td>
<td>7</td>
<td>85.7%</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>Art w/ Common Noun</td>
<td>6</td>
<td>100%</td>
<td>6</td>
<td>100%</td>
</tr>
<tr>
<td>Spelling</td>
<td>6</td>
<td>100%</td>
<td>6</td>
<td>83.3%</td>
</tr>
<tr>
<td>Spelling</td>
<td>4</td>
<td>100%</td>
<td>8</td>
<td>87.5%</td>
</tr>
<tr>
<td>Plural</td>
<td>8</td>
<td>100%</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Verb Tense</td>
<td>8</td>
<td>100%</td>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>Article Omission</td>
<td>1</td>
<td>0%</td>
<td>10</td>
<td>100%</td>
</tr>
<tr>
<td>Run-on</td>
<td>1</td>
<td>0%</td>
<td>11</td>
<td>90.9%</td>
</tr>
<tr>
<td>Part of Speech</td>
<td>5</td>
<td>80%</td>
<td>7</td>
<td>57.1%</td>
</tr>
<tr>
<td>Connector</td>
<td>4</td>
<td>75%</td>
<td>8</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

“Awkward syntax” was omitted from the results because it was went over as a class.
Table 6
Statistics for COCA Success Rate and Other Success Rate

<table>
<thead>
<tr>
<th></th>
<th>COCA Success rate</th>
<th>Other Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weighted Average</td>
<td>93.99%</td>
<td>87.49%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>0.35</td>
<td>0.14</td>
</tr>
<tr>
<td>Variance</td>
<td>0.12</td>
<td>0.02</td>
</tr>
<tr>
<td>T-test Unequal Variance</td>
<td>0.12</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Item Analysis. While the results from the t-test above indicate no significance between COCA success rate and other success rate, however the raw data from the individual cell of the weighted average for COCA success rate is towards the hypothesized trend that COCA aids users in correctly fixing grammar errors. However, the participants may have also been likely to get the answer correct using any intervention method.

From this data, if an established COCA procedure is followed, the outcome will be right (Menand, 2001). Therefore, in order to achieve correct outcomes, one must be properly trained in COCA and understand the procedure of obtaining results. While misusing COCA or finding it complicated is likely, after a thorough understanding of COCA, the correct result may be obtained.

Free-Response Analysis. From the free-response section, ultimately students perceived similar positive uses for COCA as my results analysis showed. Errors such as: “article, prepositional, and word choice”, are facilitated by COCA. From our most commonly committed errors, I saw that these error types are three out of the four most commonly committed. If students are able to properly use COCA, the most commonly made ESL errors may be able to be reduced. However, errors such as “sentence structure, omitting articles, parts of speech, sentence meaning and run-on sentences” are difficult to use in COCA. While many students reported spelling errors were difficult to use, this may be because of unfamiliarity on how to use COCA.
for spelling errors. However, once students were taught the correct method, they were able to employ it, as seen from their assessments.

**Grammar Revision Analysis: Student Self-Correction.** Based upon the results from the COCA assessment, as well as a “Common ESL Errors” assessment given to the students earlier in the semester, students are able to fix the following common ESL errors with or without intervention: “preposition, subject-verb, verb tense, phrasal modal, punctuation, part of speech and spelling errors” However, errors such as: “article, sentence structure, sentence meaning, connectors and combing sentences”, students are more than likely to find difficulty fixing them and may be unable to fix it without intervention. However, with intervention from COCA, students may be able to fix one of the most commonly made ESL error—the article error, as well as the errors found in Table 2. They may also use it to provide positive results for initial self-analyses. As COCA is not a tool for giving students the correct answer, but rather a hypothesis checking interface by means of which students must have preliminary grammar knowledge of errors in order to find the correct result. This may also be partly facilitated by the error-symbols, as well as a student’s own grammar-knowledge base.

**Student’s Reports.** Students were given a final questionnaire as well as a final interview. First the results of the questionnaire will be displayed. See Appendix F for the full version of the questionnaire.

**Questionnaire.** Most students rated their ability in English grammar with a six on a 1-10 scale and reported little to no change from the beginning of the semester to the end of the semester. When the students were asked how they fixed their grammar errors, from the options, COCA, myself, friends, other teachers, a dictionary, google or other, students reported to have used COCA, google, the dictionary and themselves. All students reported that they liked getting
grammar feedback on their assignments, but would have preferred direct feedback, rather than the error symbols. Half reported they have been learning from their grammar mistakes. In terms of which errors they have improved on the most, students reported phrasal verbs, prepositions and verb tense errors, while the errors they still needed to work on were article error, idioms, prepositions and verbs. Students reported an average of six when replying to continuing to use the error symbols on their own assignments or when helping another student. Concerning COCA, for the questions regarding search techniques in COCA, the basics of COCA, finding results and knowing what to type into COCA all students reported under an eight in terms of facility on a 10 point scale. Students did report that COCA is not more useful than google for correcting grammar mistakes, and also that COCA was only somewhat easier to learn after learning the error symbols. Students reported that COCA is useful for learning the use of vocabulary and learning proper English phrases. Finally, many students reported COCA is difficult to use based on the time spent analyzing the data and only half of the students would continue to use COCA in the future.

**Interview Analysis.** The interviews help to answer research questions two and three, but also shed some light on research question one.

**Research Question 2.** Do ESL students find the Corpus of Contemporary American English, (COCA) useful in L2 writing and L2 writing courses and if so, how? In particular, if certain components of the COCA interface are confusing, can direct instruction (about those components) mitigate the problem? From the interviews, most students reported finding COCA useful, however the majority of the participants reported never to rarely using COCA at home. In regards to what components of COCA are confusing, students reported that the many “columns” that COCA displayed were confusing. Also, they reported that when COCA displays its search
results, there is too much information to understand it clearly and choose an answer. However, they enjoyed the information provided by COCA, and if the information was displayed in a more functional manner, or simplified it would be better. Simply stated, COCA has some design flaws that make the interface difficult to use and daunting to any new person using COCA. Participants also reported sudden error on the COCA interface, having often to refresh the browser. Students also did not like that COCA could not fix input errors, such as when Google asks, “Did you mean…?” Participants reported enjoying that function of Google that COCA did not have. However, participants did report that once COCA had been used many times, and through direct classroom instruction the interface became less complicated and the participants became more comfortable using and understanding. They mentioned that the COCA assessment, along with additional training on using COCA with the error-symbols helped to better understand COCA. Therefore, direct instruction may help to mitigate the issues of COCA.

Participants demonstrated a desire for more COCA instruction in the classroom. Students explained that during the course of the semester, they would “forget” about COCA, and only remember it when I would bring it up. Therefore, more consistently integrated lesson materials that use COCA in the classroom would also further promote COCA use by students and reduce confusion brought on by the interface (Kennedy & Miceli, 2001).

Research Question 3. What are student’s overall evaluation of using the corpus in L2 writing and using the strategies on self-correcting student’s errors? In regards to the strategies of self-correcting errors, or the error symbols, students reported that the error symbols were easy to understand and once an error was found for them it was easy to fix since they were told what type of error it was. In the beginning, students did not like the symbols, having to check what the symbols meant. Although, after two times using the symbols with the drafts, they remembered
the symbol meaning. Students mentioned they would not use the symbols in correcting their own assignments, but would maybe use the errors when helping another student wanting to correct their writing. Students also reported not solely relying on the symbols as their only source of error, but mentioned that they would find other similar errors and attempt to fix those as well. Therefore, while there is a steep learning curve for the error-symbols, from the data produced by this study and the student reports, indirect feedback through use of error-symbols is useful in L2 writing.

The students' evaluation of COCA was mostly neutral to negative because of its confusing interface. Students did not use COCA when correcting their writing, and often turned to online dictionaries and Google more than COCA. However, as seen from the COCA assessment and after direct instruction of COCA to the participants, students reported greater understanding of COCA and more positive feelings when it was used more in the classroom. Therefore, while initial feelings of COCA are negative, after classroom instruction, use and follow through, COCA has a greater reception by the participants. Students reported that if the interface was far simpler, they would continue to use COCA.
CHAPTER SIX: DISCUSSION AND CONCLUSION

While the interface for COCA is complicated and non-intuitive, and ample instruction is necessary in order to navigate and use COCA correctly, COCA may be used to correct one of the most commonly made ESL errors—the article error. Not only may COCA fix the article error, but prepositional and word form errors may be facilitated by COCA as well. Additionally, I also saw positive attitudes from the students concerning using COCA to fix those errors. However, further research is needed about using COCA for article errors containing proper and common nouns, as well as null article errors. In general, with some understanding of COCA, and motivation to use a computer-interface, students may be able to use COCA as an intervention method in order to check initial grammar hypotheses. In addition, both the use of error-symbols and COCA give students a higher likelihood of fixing their grammar errors. However, further research must be done on the use of COCA with an indirect feedback approach. Also, whether or not using both COCA and the error-symbols together produces learning affects is still unsure.

Students reported finding google more appropriate to fix grammatical errors, and found the overall COCA interface, search technique, and results analysis difficult to understand. This research only further fuels the need for an ESL friendly corpora interface. In addition, students displayed positivity towards more integrated COCA lessons in the classroom, as well as more COCA instruction. They explained that if they were able to utilize COCA more effectively, their use would increase. These positive attitudes suggest that COCA has data and examples the students would like to use and access, however without more integrated COCA instruction, they are unable to use or interpret such data.

In regards to learning effects, for the final major assignment 1/10 students received indirect feedback for their first draft. Those students who did not receive indirect feedback from
the instructor increased their words per error from the first draft to the final draft. The student who received indirect feedback significantly increased their words per error, further suggesting that indirect feedback does reduce student grammar errors in the process draft writing approach. The results would suggest some learning by the students; however from the small sample size it is still inconclusive if the students have learnt from the study.

Also, in this study it cannot be told if increase in words per error over time was a product of the process writing approach, the use of indirect feedback and COCA or students simply improving over time. Since students were able to use any method to correct their errors, I cannot tell how they are directly improving. Also, while over the course of the semester for every first draft of each major assignment words per error increased, this can be it cannot be confirmed if this is a result of indirect feedback and COCA or the students naturally improving over the course of the semester since this study had no control group.

However, since all students completed at least two drafts of every assignment, the first draft without assistance can be considered a control group since each first draft was produced by the students themselves. Based upon the data, from the beginning of the semester to the end, students improved in accuracy, although not significantly. However, after interviews with the students, many admitted putting medium to full effort into the first draft of the final assignment, and they also admitted that their level of effort was determined by their workload. From this, it would be difficult to determine what were actual errors in these assignments, versus what were mistakes from lack of effort or revision done by the students for their first drafts. However, since only three interviews were conducted in this study, it is difficult to generalize this interpretation for the entire class population.
In terms of specific errors committed by the students, I saw a reduction in plurals, verb tense, spelling punctuation, connectors and verb aspect most importantly. While prepositions and article errors increased, this may be due to a general rise in complexity in the writing assignments given to the students, as well as the students own writing ability becoming increasingly more complex over the course of the semester. For one student, a measure was conducted in order to see the percent change in the correct use of articles from the first draft of the first assignment to the first draft of the final assignment. There was a 215.29% increase in the correct use of articles, while there was a 47.5% increase in the incorrect use of articles. This further supports that the use of the article increased in each sequential assignment. Therefore, the increasing article errors were correlated with an increased use. Further studies done on article errors may focus on the correct usage of articles.

After interviewing the students, their reports indicated that their grammar-revision process relied heavily on individual guesses, and the use of an online dictionary and Google. Therefore, it is no surprise to see the greatest positive change in the reduction of errors for spelling, verb tense and aspect, punctuation and omit—since those errors are the most intuitive to correct using self-generated hypotheses about grammar, or using online methods such as Google, or a dictionary. Further research should focus on these two commonly made errors and using COCA. Specifically, a study could focus on identifying these errors in students’ writing and their success at eliminating these errors using COCA.

Future research may be able to better understand the use of COCA together with indirect feedback. Future research should be directed at clearly understanding COCA users between non-COCA users. A study could be done in which a group is taught how to use COCA, and a similar test as the one used in this study is administered between COCA users and non-COCA users who
identify their intervention method. From this, one may be able to get a better understanding of COCA’s rate of success in helping students find a grammar correction. A longer test with more grammar errors from different categories would able help us determine those errors which COCA is unable to provide answers, or for which errors COCA is unintuitive to use. Another study could also be done between those students who are taught COCA and error symbols, and students who are only taught COCA to provide the answer if error-symbols aid in the use and understanding of COCA.

Additional research could be done which focuses on common noun article usage in COCA from spoken speech and written text. As native speakers of a language, oftentimes it is easy to misspeak, and mispronounce something, or have un-clear or jumbled syntax. It would be interesting to discover the instances of proper and improper common noun article usage in spoken speech from COCA, as well as from written texts.

Lastly, it is important to note that it may be difficult to truly answer the question if students are improving in accuracy over time from error correction if errors are not identified as both mistakes and errors. A study which attempts to find mistakes vs. errors in students’ writing over the course of time would be able to better answer the question if students’ accuracy is improving.
PEDAGOGICAL IMPLICATIONS

From this data analyses, teachers instructing intermediate-to-advanced learners of English may employ the use of COCA in their classrooms for common noun article errors, and prepositional errors, as COCA may provide interpretable results to aid in the revision process. From this, students may be taught minimally to use the COCA interface only to achieve these means. Not to mention, studies have shown that greater learning does occur when students are focusing on less linguistic features since it helps to those particular features more noticeable and relevant (Han, 2002; Nicholas, Lightbown, & Spada, 2001). It is noted above that it is suggested to use COCA for article and preposition errors with intermediate-to-advanced learners. This is suggested for two reasons: 1) as the many studies have shown, COCA used has found the most positive results from more proficient learners, and 2) more proficient learners would no longer be struggling with as many content errors in their L2 writing. It would not be advised for lower proficiency learners to focus on correcting items that do not carry meaning in a sentence, as their writing primarily for content, rather than grammar at a low level. However, more advanced learners tend to be past this stage in their writing, now focusing on the more minute linguistic aspects of the language. In addition, COCA should be used in conjunction with indirect error feedback in order to produce positive results. Therefore, a teacher wanting to employ the use of COCA in the classroom must also use a form of indirect feedback that would correspond with COCA in order to facilitate the error correction process.

This process must be understood by both the teacher and the student. The teacher must form a “grammar relationship” with the students by explaining to them in the beginning of the year or semester how their papers will be edited by the teacher and what is expected of them. This can be done by first showing the students the error symbol list (Appendix H), in addition a
sample student essay with the errors coded in red so as to show the students how their papers may be returned to them. This will help the students understand what to expect and what will be expected of them. Then, the teacher must focus their use of COCA with a goal in mind—that is, fixing students’ coded errors. From their coded errors, students are aware of 1) what type of error they have made and 2) where the error has been made, such as an article, preposition, plural error, etc. After this, the teacher should give a 20 minute COCA tutorial on how to use COCA by fixing article and preposition errors. This will help students to understand the basic functions of COCA, as well as guide their usage and help to avoid the other possibly confusing processes COCA performs. By showing these two basic error forms to the students and their use in COCA on how to fix ungrammatical English sentences, they may be able to use COCA themselves and with the other error-symbols. An example of this type of basic tutorial may be found on YouTube, entitled “COCA Tutorial” (Jagusztyn, 2014).

In order to promote use and understanding of COCA in the ESL classroom, COCA must be incorporated throughout the curriculum. That is—the teacher must consistently use COCA in the classroom in order to alleviate any issues students may be having with COCA, in addition further explaining how to fix student errors using COCA. The teacher may also employ a COCA test (See Appendix B for sample test), which will further promote COCA use in the classroom, as well as help the teacher to identify what error types students are able to fix using COCA successfully, and what errors they either cannot use with COCA or cannot fix. This test should be made using only the errors committed by the students in the teacher’s own current classroom so as to maintain test validity and reliability.

Establishing this sort of relationship and use of the error-symbols with the process approach can induce a heavy workload on teachers. Teachers may find themselves unable to
keep up with the indirect feedback given on every draft, as well providing the students with ample COCA practice. It is advisable that a teacher minimizes as a much as possible the work which would be done instead by the students. That being said, a teacher should not focus on every grammar error in a student’s essay, but only focus on certain features. As mentioned above, this can both help the student and teacher. Secondly, in order to carefully gauge learning, a teacher does not have to provide feedback on every sequential draft, but may put this responsibility on the students, asking them to find errors in their final draft and completing a comparison between their draft-one errors and their final draft errors. It should be left to the teacher to decide what work may be solely completed by the teacher, and what can be left for the students’ responsibility.

Limitations

There are limitations to what this study shows. First, this study did not look at what students would do if they received no feedback; therefore I am unable to tell if effects are produced by the process writing approach, indirect feedback or the use of COCA. This study may also be limited due to human error, as the editor (myself) may not have found every error, or may have counted an error where none was present. Also due to the fact that error coded was based on my own native speaker judgment, an error type that has been coded by me may not be the same error type coded by another. Therefore, in particular article and plural errors for “generic references”, such as when students are making a generalization about all the nouns in a particular group, I chose to either make the error fixable by adding a plural or an article. From this, it is difficult to generalize the “article” data in the research as solely being article errors, or possible plural errors as well. In addition, due to the low sample size, the effects of this study are more greatly skewed than with a larger sample size.
More limitations of this study include that it is ideal for a COCA-user to have an intermediate to an advanced knowledge of English grammar. In this class of 12, only two students had an advanced knowledge of English grammar, therefore this could have caused difficulties for many students wanting to interpret their COCA results.

Lastly, since the student interviews conducted only gathered information from three students, the qualitative data gathered from that portion of the study should be interpreted lightly. However, these interviews can form a basis for future hypotheses in studies done on using corpora, or specifically COCA in the ESL classroom.
REFERENCES


APPENDIX A: COCA TEST SPECIFICATIONS

Stage 1: Test Specifications

Purpose of Test
The purpose of this test is to determine the amount of knowledge students have about the Corpus of Contemporary American English (COCA) in regards to using COCA to find corrections to commonly made ESL grammar errors. This test will also help us determine, what parts of COCA may be particularly difficult, and if students are able to use some parts of COCA, however what parts they do not understand. As well as, if students are unable to use COCA for certain areas, we will know what errors are difficult to input into COCA and what other forms of intervention they are using.

Description of Test Takers

Personal Characteristics
Test takers will be international students in an ESL classroom that focuses on writing or grammar. The age range may vary, depending on the level of the ESL classroom, however it is recommended to use COCA with intermediate to intermediate-high ESL learners. Ultimately, this test could be given to upper-level students in a secondary school or at the beginning university level. ESL students will extremely high proficiency may be taught COCA, but may not find COCA necessary to use as their grammar may be too advanced. Knowledge of computers is recommended, however not required. Although, the use of a computer is necessary in order to use COCA. This may be done with a personal computer or through a school’s computer.

Topical Knowledge
The content of this test will vary, as the content will be determined by an individual teacher using their student’s particular grammar errors. Teachers should only use this sample test as a guide for the creation of their own test. Therefore, since each test will reflect the errors made on student’s individual assignments through the course of a semester, students will be familiar with the coding symbols used on the test. As well as, teachers should introduce coding symbols and COCA to the students in the beginning of the semester, in conjunction with the process writing approach so as to familiarize the students with the two intervention methods.
**General Level and Profile of Language Ability**

English language ability may vary greatly depending on the level of the ESL classroom. As well as, proficiency may vary within an ESL class. However, as mentioned above, it is recommended to use both the coding symbols and COCA with intermediate-to-intermediate high proficiency learners. ESL learners with advanced or near-native writing abilities may not have a need for COCA.

**Possible Affective Responses for Taking Test**

This test should be given towards the end of the semester to assess students’ knowledge of both the coding symbols and COCA. Students should be aware that if they are unable to use COCA to fix the error, they may use another method of intervention. As well as, teachers should make it clear that if students are unable to fix the error, to leave it blank and a short response explaining why. Therefore, students should feel little to no anxiety to take this test. This test may be given in the classroom, or as a take-home test. Additionally, this test can be given to individuals or to pairs of students. However, since testing demographic may vary, affective response to the test may vary as well.

**Definition of Construct to be measured**

The construct to be measured on this exam is students’ knowledge of the interface of COCA and their ability to find and fix errors. It will tell us what steps students are going through in order to fix errors, and where they may get stuck.

**Test Instructions:**

**Purpose:** The purpose of this assessment is for you to understand your level of knowledge of COCA. This test will determine: 1). Your ability to use COCA to find possible error corrections, 2). Your ability to choose the proper correction.

**Directions:** All of these sentences have one (or more) error. The error has been found for you using the coding symbols, and in red. First, you need to go to [http://corpus.byu.edu/coca/](http://corpus.byu.edu/coca/), and then type in the error in COCA, as well as surrounding words, in one of the four displays (LIST, CHART, KWIK, COMPARE). Try to fix the error and explain what steps you took to find the correction.

**If you do not use COCA, please say what you used or did and explain the steps you took.**
Example: The first one has been done for you:

Ex:0. Providing skills training in technical problem solving would contribute a lot to the success to(wrongprep) Project C because initial support from employees might hugely affect the future of the project.

Justifications for Test Instructions:

1. Explanation of Purpose:
The directions must explicitly explain to students what the purpose of this test is. That way, students may be aware what this test is for. Students may or may not be told of this test prior to being given the test.

2. Explicit Directions:
The directions of this exam should be read aloud as well as written directly on the exam. This allows the students to both hear and see the instructions in order to get a better understanding of what to do. They may also refer back to the directions throughout the exam.

3. Example Item:
Teachers should offer at least one example item to show to students how their process should look. The teacher should walk the students through the explanation of this item on both the exam and using COCA.

4. Process Item
While the above example item will already be done prior to the administration of the exam, and shown to the students. Another item should be allotted in order to perform together in the class. This way, students may see COCA working together with the teacher. This group item may eliminate any initial issues with COCA.

5. Group or Individual Work:
This test may be given as a group test or as an individual one. If done as a group, all names should be written on the test so the teacher knows who took part in each group. If the teacher chooses a group test, additional questions may need to be added to get a better understanding of individual COCA use.
Considerations of Some Qualities of Usefulness

Authenticity
The authenticity of this test is high in that it reflects: a). Representative Common ESL errors from student’s papers, b). The use of coding symbols, and c). The use of COCA. Authenticity may only be promoted if teachers introduce coding symbols to students in the beginning of the semester and continue to them on student’s draft in the process writing approach.

Impact
From this test, we hope to see what parts of COCA are particularly easy or difficult for learners to fix common grammar errors. This may give us a better understanding of parts of COCA that may or may not be intuitive to students. From this, teachers can better teach COCA to their students, using grammar errors. In addition, changes could be reflected on COCA’s interface to become more user-friendly to ESL learners.

Inventory of Available uses and plan for their allocation
Tests of this type should be made and administered by the teacher of their own ESL course. This is to ensure authenticity of errors used and understanding of the students. This test should be given towards the end of a year in a semester long course, or at the middle and end of a year-long course. Students should be given a key to the exam, and asked to revisit their test, fixing what errors they could not initially find. Therefore, teachers should only use this test for purposes of understanding student’s use of COCA, however these results are for teacher’s use only. Students should use the key to find and fix their own problems with COCA so as to get a better understanding of their COCA use.

Trial Test
The second iteration of this test, ver 2.0, was trialed out in my own ESL classroom. From this trial, a third iteration was made, ver 3.0, (see Appendix B). Based upon difficulties my students had with this exam, as well as my own formatting knowledge, I will discuss the changes:
1. Additional POS explanation and new graphics

In the second iteration, I briefly explained how to use both the error symbols and COCA together by implementing the use of the POS list in COCA. However, student’s still needed further instruction on how to use the list, even after oral instruction. I added the following graphic:

![Figure 1: POS Graphic](image1)

As well as new instructions: 1. Click on prep (as seen in the picture); 2. COCA will add the symbol for you in the text box. The symbol in COCA for prep is [i*]; 3. Then, COCA will add the symbol for you: [i*]; 4. In the text box type after the symbol: the table.

And a second graphic:

![Figure 2: Search String Graphic](image2)

As I administered this test, students were asking me similar questions about using COCA and the POS list. From these two new graphics and explanation, I hope to mitigate the issues the students were having in using the POS list in COCA.

2. Test Format:

After the test was trialed out, it became clear that the space used for students to write in on the test was not efficient or intuitive. The new version format is as below:

<table>
<thead>
<tr>
<th>Number 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error:</strong></td>
</tr>
<tr>
<td><strong>How did you solve this Error?</strong></td>
</tr>
<tr>
<td><strong>Corrected Version:</strong></td>
</tr>
</tbody>
</table>

![Figure 3: New Table Test Format](image3)
This new table format allows for more efficient use of space and more intuitive writing areas. From this, students should be able to see clearly in what areas to input their answers.

3. New Test Language
Version 2.0 asked students “COCA Steps” in order for them to show their work in COCA on how they solved the error. Version 3.0 has altered the testing language to reflect more correction intervention methods than COCA. As seen in the above figure 3, the new language states, “How did you solve this error?” This new language is also more intuitive for the students to understand what to put into the test, as it clearly asked them an answerable question. I chose this language change since many students were asking what to put in “COCA Steps”. The old language lest left room for confusion and this new language should alleviate that confusion. As well as, this new language can help students understand what to write since it does not only say “COCA”.

4. Shortening Effect
Version 3.0 has a reduced page count by two pages. This results in a four-page test as opposed to version 2.0, a 6-page test. This may have a psychological effect on students as page length can be a contributive factor in test anxiety. However, while this factor is only perceived by the students, it has no real performance loss (Jensen, Barry, & Kummer, 2013).

**Stage 2: Operalization**

**Setting**
This test should be administered in the ESL classroom, or as take home exam. However, in either instance, teachers should complete reading the purpose, directions and sample items to the students before they start the test. Students should be given at least 80 minutes to complete this exam, however test time may vary according to the classroom. The teacher should gauge their own student’s progress through the course of the administration of this test and pick a time that allows students to complete the exam.

**Administration and Scoring Procedure**
As mentioned above, time for the administration of this test may vary, and it should be determined by each individual teacher allowing students enough time to finish the exam.

All tasks are scored objectively by a single instructor. However, the results of the exam should not be released to the students, but students should be given the key and find their own mistakes. Teachers should only explain to the students, which items are wrong, but not how they are wrong.
Input
Input for this exam is in the TL (English). Input will be in the form of both written and oral, given by the administrator of this test.

Expected Response
The responses for this test are to be written as step-by-step instructions on the test itself, as well as, a line for the final corrected version of the error is available for students to write in their response.

Relationship between input and response
The relationship between input and response is non-reciprocal and may vary in scope. Since the participants are allowed to use either COCA, or another intervention method, the step-by-step process in which they show their work may vary. Additionally, responses using COCA may vary as there may be multiple paths to finding the correct answer. There is ample room and guiding language for the students to formulate their response.

Example Test Task

Stage 3: Administration

Guiding Languages for Items

A typical item will look like the following:
1. It does not have a critical affect(wc) on Project C.

   Error:

   COCA Steps:

   Corrected Version:

All items must come from each teacher’s own student’s writing. By doing this, the teacher can assure the assessment is using common errors made by the individual class, and note errors they may be unfamiliar with. Teachers should scan through student’s coded essays and find sentences that contain errors. Those sentences should now be the basis for every assessment item. The teacher should maintain red coloring on the error so that it stands out on the paper.
Guiding Language for Responses

**Typical Response:**

| Error: | Providing skills training in technical problem solving would contribute a lot to the success _to_(wrongprep) Project C because initial support from employees might hugely affect the future of the project. |
| How did you solve this Error? | 1. LIST: |
|  | 2. Type in “success [i*]” |
|  | 3. Results: |
|  | 1. success of _noun/noun phrase_ |
|  | 2. success in _noun/noun phrase_ |
|  | 3. success with _noun/noun phrase_ |

| Corrected Version: | Providing skills training in technical problem solving would contribute a lot to the success _of_ Project C because initial support from employees might hugely affect the future of the project. |

The student should first have to identify the error “**Error**”. Next, students will see “How did you solve this error”, and here is where space is allotted for them to “show their work”. They must explicitly write down what they did in COCA, or by what other method they found the answer. Lastly, the students must write the corrected version of the error, including the entire sentence.

Guiding Language for Explanation

**Typical Explanation:**

**Explanation:** Based on the interpretation by the teacher, this could be a word choice error or a spelling error. More commonly this is a word choice error as students are unaware if it is effect or affect. Students at an intermediate to advanced level of English should be aware of this distinction and realize that effect is the right choice.

Explanations are to be made by the teacher either for every item, or for when a particular item error or answer may be ambiguous. This may be when the teacher is unsure of an error, because the error could represent multiple grammar errors, or if there are multiple paths in COCA in which one can find the corrected response. By adding an explanation, the teacher may give rise to any confusion about the error, or the response. The explanations may be for both the student and the teacher.
APPENDIX B: COCA TEST

Purpose: The purpose of this assessment is for you to understand your level of knowledge of COCA. This test will determine: 1). Your ability to use COCA to find possible error corrections, 2). Your ability to choose the proper correction.

Directions: All of these sentences have one or more errors. The errors have been found for you using the coding symbols, and are in red.

1. First, you need to go to http://corpus.byu.edu/coca/, and then type the error in COCA with the error symbol, as well as the surrounding words in one of the four displays (LIST, CHART, KWIK, COMPARE).
2. Explain what steps you took to find the correction, and
3. Lastly, put the corrected version of the sentence on the worksheet.

*TIP: Use the error symbols I give you and use the corresponding POS List in COCA:

For example: If you see an error: “The student left the book (+prep) the table.”

Use the POS list to find the correct part of speech that you're looking for. Click on POS:

1. Click on prep (as seen in the picture).
2. COCA will add the symbol for you in the text box. The symbol in COCA for prep is [i*]
3. Then, COCA will add the symbol for you: [i*]
4. In the text box type after the symbol: the table.

It will look like this:
If you do not use COCA, please say what you used or did and explain the steps you took.

Example: The first one has been done for you:

**Ex: 0.5**

| Error: | Providing skills training in technical problem solving would contribute a lot to the success to(wrongprep) Project C because initial support from employees might hugely affect the future of the project. |

| How did you solve this Error? | 1. LIST:  
2. Type in “success [i*]”  
3. Results:  
4. success of noun/noun phrase  
5. success in noun/noun phrase  
6. success with noun/noun phrase |

| Corrected Version: | Providing skills training in technical problem solving would contribute a lot to the success of Project C because initial support from employees might hugely affect the future of the project. |

(The first one is to be done as a class):

**Number 0:**

| Error: | It does not have a critical affect(wc) on Project C. |

| How did you solve this Error? |

| Corrected Version: |
THE ASSESSMENT BEGINS BELOW

<table>
<thead>
<tr>
<th>Number 1:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error:</strong></td>
<td>Some of the staff might (+verb) against this modification because of the feeling of uncertainty.</td>
</tr>
<tr>
<td><strong>How did you solve this Error?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Corrected Version:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number 2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error:</strong></td>
<td>To implement the modification the company need(sv) to make an extra investment of $2.8 million and this is nearly 10% of total project cost.</td>
</tr>
<tr>
<td><strong>How did you solve this Error?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Corrected Version:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number 3:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error:</strong></td>
<td>This is [a both time(awk)] and money consuming issue.</td>
</tr>
<tr>
<td><strong>How did you solve this Error?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Corrected Version:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number 4:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error:</strong></td>
<td>This modification can contribute (+prep)(+art) objectives of Project C most since there is a possibility of increasing market share.</td>
</tr>
<tr>
<td><strong>How did you solve this Error?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Corrected Version:</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number 5:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Error:</strong></td>
<td>Without a doubt(p) all (+prep) (+art) modifications are important, however, there are pros and cons in each of these modifications.</td>
</tr>
<tr>
<td><strong>How did you solve this Error?</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Corrected Version:</strong></td>
<td></td>
</tr>
<tr>
<td>Number 6:</td>
<td>Error: Some noise would be generated from the support stuff(sp) because this skills training could represent a speculation form(sp) the top management that they do not have enough ability to start the plant up smoothly.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Number 7:</td>
<td>Error: This modification can grow workers with higher skills to solve problem(pl).</td>
</tr>
<tr>
<td>Number 8:</td>
<td>Error: For the above reasons, it is difficult to adopt this modification at this stage, because modifications should be adopt(vt) quickly to improve the(oart) Project C.</td>
</tr>
<tr>
<td>Number 9:</td>
<td>Error: If GE delays the introduction of PermaTuf C, they have to take the risk that competitors might introduce new products first and then gain considerable market share ahead of GE, consequently, the potential loss of announcing the new product late may exterminate the cost saving.(rodiv)</td>
</tr>
<tr>
<td>Number 10:</td>
<td>Error: Although environmental improvement costs 1.5 million, which is far less than 10% of the total budget to implement, the union will give pressure to push other</td>
</tr>
</tbody>
</table>
plants to install similar modifications, which will lead to a high(pos) cost in Louisville.

**How did you solve this Error?**

**Corrected Version:**

**Number 11:**

**Error:** Hence, this modification is very important and it is the action (+conn) must be taken as soon as possible since this is a long term plan that can be conducted.

**How did you solve this Error?**

**Corrected Version:**

12. Do you think COCA is useful for ALL of the above errors? If not, which errors do you think COCA is NOT useful for? Please explain.

13. Do you think you will use COCA in the future after this course? Why or why not?
APPENDIX C: COCA TEST KEY

1. It does not have a critical affect(wc) on Project C.

**Error:** critical affect(wc)

**COCA Steps:**

**LIST:**
1. Type in ‘critical affect’
2. Results: 1 result → Click on result. See result says.. ”Critical affect variable”
3. Affect is an adjective in this sentence. We want a noun.
4. Type on ‘critical effect’
5. Results indicate any instances of “have a critical effect”

**Corrected Version:** It does not have a critical effect on Project C.

*Explanation:* Based on the interpretation by the teacher, this could be a word choice error or a spelling error. More commonly this is a word choice error as students are unaware if it is effect or affect. Students at an intermediate to advanced level of English should be aware of this distinction and realize that effect is the right choice.

2. Some of the staff might (+verb) against this modification because of the feeling of uncertainty.

**Error:** might (+verb)

**COCA Steps:**

1. **LIST:**
2. Type in ‘might’
3. **Results:**
   1. ‘might’ be + verb/ noun/ prep
   2. ‘might’ actually + verb

**Corrected Version:** Some of the staff might be against this modification because of the feeling of uncertainty.

3. To implement the modification the company need(sv) to make an extra investment of $2.8 million and this is nearly 10% of total project cost.

**Error:** company need(sv)
**Coca Steps:**

**List:**
1. Type in ‘the company need’
2. Results: No results
3. Type in the company needs
4. Results: 2 results

**Corrected Version:** To implement the modification the company needs to make an extra investment of $2.8 million and this is nearly 10% of total project cost.

**Explanation:** The student should be aware that ‘sv’ is a subject-verb agreement, in that need does not agree with company. While company represents many people, it is a collective noun and therefore, singular. Such as in the word ‘family’.

4. This is [a both time(awk)] and money consuming issue.

**Error:** [a both time(awk)]

**Coca Steps:**

**List:**
1. Type in “a both time”
2. No Results
3. Understand that this is a syntax error, therefore the sentence must be moved around.
4. Try “both a time”
5. 1 Result ➔ Click on result: “…both a time and money consuming issue.”

**Corrected Version:** This is both a time and money consuming issue.

5. This modification can contribute (+prep)(+art) objectives of Project C most since there is a possibility of increasing market share.

**Error:**

**Coca Steps:**

**List:**
1. Type in ‘contribute [*] [at*]’ From the POS list, ‘prep’ and ‘article’
2. Results:
   1. contribute to the
   2. contribute to a
   3. contribute to an
New search
LIST
1. Type in ‘contribute [i*] [at*] noun PL from the POS list, ‘prep’, ‘article’, ‘nounPL’
2 Results:
   1. Contribute to the NOUNPL

Corrected Version: This modification can contribute to the objectives of Project C most since there is a possibility of increasing market share.

6. Without a doubt(p) all (+prep) (+art) modifications are important, however, there are pros and cons in each of these modifications.
   Error 1: Without doubt(p)

COCA Steps:

LIST:
1. Type in ‘without a doubt’
2. Select “ignore spoken”
3. Many results indicate comma usage, especially when at the beginning of the phrase.

--OR--
LIST:
1. Type in ‘without a doubt [y*] from POS list ‘PUNC’
2. Results:
   1. Without a doubt,

Corrected Version: Without a doubt, all...

Error 2: all (+prep) (+art) modifications

COCA Steps:

LIST:
1. Type in ‘all [i*] [at*]
2. Results:
   1. All of the
   2. All over the
   3. All in the

Corrected Version: all of the modifications
7. Some noise would be generated from the support stuff(sp) because this skills training could represent a speculation form(sp) the top management that they do not have enough ability to start the plant up smoothly.

Error 1: stuff(sp)

**COCA Steps:**
**LIST:**
1. Type in support st*
2. Results:
   1. Support staff
   2. support structure

**Corrected Version:** Some noise would be generated from the support staff because …

**Explanation:** I used the collocation ‘support’ so that COCA had something to find the misspelling with. If I had just typed in st*, many different words would come up, not leading me to the correct answer. I also used * because this indicates to COCA that I am unsure of the rest of the spelling of the word. You always want to write as much of the word as possible before the asterisk.

Error 2: form(sp) the top management

**COCA Steps:**
**LIST:**
1. f* the top management
2. Results:
   1. from the top management
   2. for the top management

**Corrected Version:** from the top management

8. This modification can grow workers with higher skills to solve problem(pl).

Error: solve problem(pl).

**COCA Steps:**
**LIST:**
1. Type in ‘solve problem’
Results: 12 results-- mostly from speaking
2. New search in LIST
3. Choose “ACADEMIC”
4. Results: 6 results→ CLICK on results
5. We see that if you say “solve problem” a number must come after it, such as “solve problem 4” or a noun, such as “solve problem sets”
**Corrected Version:** This modification can grow workers with higher skills to solve problems.  
*Explanation:* Although COCA is not necessary to fix this error, by typing in the original error in COCA, we can see why our original error is incorrect.

9. For the above reasons, it is difficult to adopt this modification at this stage, because modifications should be **adopt(vt)** quickly to improve **the(oart)** Project C.

**Error 1:** should be **adopt(vt)**

**COCA Steps:**
**LIST:**
1. Type in ‘should be adopt’
2. Results:
   1. should be adopted
   2. should be adopting

**Corrected Version:** should be **adopted**

**Error 2:** to improve **the(oart)** Project C.

**COCA Steps:**
**No Coca Steps**
*Explanation:* Student should know that ‘oart’ means remove article

**Corrected Version:** to improve Project C.

10. If GE delays the introduction of PermaTuf C, they have to take the risk that competitors might introduce new products first and then gain considerable market share ahead of GE, consequently, the potential loss of announcing the new product late may exterminate the cost saving. (**rodiv**)

**Error:**

**COCA Steps:**

**Corrected Version:**

11. Although environmental improvement costs 1.5 million, which is far less than 10% of the total budget to implement, the union will give pressure to push other plants to install similar modifications, which will lead to a **high(pos)** cost in Louisville.

**Error:** lead to a **high(pos)** cost
**COCA Steps:**
LIST:
1. Type in ‘lead to a [j*]’ From POS list adjective
2. Results indicate adjectives with /-er/ endings

**Corrected Version:** lead to a higher cost

12. Hence, this modification is very important and it is the action (+conn) must be taken as soon as possible since this is a long term plan that can be conducted.

**Error:** action (+conn) must

**COCA Steps:**
LIST:
1. Type in ‘[nn*] [c*] must be’ From NOUN ALL and Conj ALL
3. Results:
   1. Noun that must be
   2. Noun that must be
   3. Noun that must be

**Corrected Version:** Hence, this modification is very important and it is the action that must be taken as soon as possible since this is a long term plan that can be conducted.
1. Introduction to Corpus Concordancing & Its Pedagogical Applications

A computer corpus is a large set of electronically stored written texts or transcriptions of speech on different topics (Conrad & Rautenhaus, 1994). A concordancer is a tool to conveniently search through and analyze the computer corpus. It is often used in order to study the patterns of use of words and phrases and their syntactic structures. Corpus concordancing has had a great influence not only on linguistic research but also on second language learning and teaching. Especially, it has revolutionized the study of word frequency, word meanings in context, collocational (co-occurrence) patterns of words, and lexico-grammatical patterns. Its beneficial effects have been shown through several studies. Todd (2001), for example, showed that college students have improved the ability to self-correct their lexical or lexico-grammatical errors in their essays by consulting web-based corpus (Chang & Sun, 2009). Also, Chambers and O’Sullivan (2004) reported that native language interference in advanced learners’ writing in a foreign language was significantly reduced as a result of corpus consultation. In addition to improving students’ performance in writing, corpus consultation also has a positive influence on students’ learning processes. By attempting to discover underlying language patterns on their own, students become more autonomous in their learning (Chang & Sun, 2009). There are already bulks of various corpora being studied, updated, and applied to teaching vocabulary and grammar every day.

2. What is Corpus of Contemporary American English (COCA)?

The Corpus of Contemporary American English (COCA) is the largest and most up-to-date freely-available online corpus which was created by Mark Davies of Brigham Young University in 2008 and contains more than 425 million words from more than 170,000 texts of various genres -- spoken, fiction, popular magazines, newspapers, and academic. It includes 20 million words each year from 1990-2011 and is updated once or twice a year (the most recent texts are from March 2011). The web concordancer of this corpus allows people to search for exact words or phrases, wildcards, lemmas, part of speech, or any combination of these. It is also possible to search for up to 10 surrounding words (collocates) of a given word. The corpus also allows users to easily limit searches by frequency and compare the frequency of words, phrases, and grammatical constructions. The frequency counts can again be sorted by the genre and recorded time of the text. It can also provide the frequency and distribution of synonyms for nearly 60,000 words in different genres (Davies, 2011).
3. Getting Started

Go to COCA website (http://www.americancorpus.org)--> click enter and register for free. If you have an account on this website, you can also access http://www.wordandphrase.info/ (a new interface). The second interface is more useful for word choice errors.

4. Basic Functions

A. Display Options

1) LIST: Show a list of word(s) or combination of words (words with collocates—words that go next to other words). This function is useful when you want to decide if certain string of words is (frequently) used. Such as, ‘full moon’, ‘post office’ or ‘water tank’.

In Figure 1, for example, the search result of LIST shows that *Spring break* is not only a possible phrase, but is also very frequently used (736 total count). However, if a phrase is simply “made up/incorrect” by combining words that normally do not collocate, such as *Spring rest*, COCA will not show any result or show very low frequency count as shown in Figure 2.

Figure D.1: LIST Search Command & Result of "Spring Break"
2) **CHART**: Shows a chart comparing frequencies of a word in a different genre or time. This function is useful for determining the register where a certain word is frequently used. This is useful for you if you want to know if a word is used in academic writing, or if it is spoken more. This is helpful for when writing Academic essays.

In **Figure 3**, for example, the search result of CHART shows that *cool* is rarely used in academic register, but that its usage has steadily increased over the time.

However, in **Figure 4**, if we use *suffrage* for CHART search word, on the other hand, the result shows that it is very mostly used in academic register. We can also see that its usage has steadily decreased over the course of time, meaning it is not used as often.

Figure D.3: CHART Search Command & Result of "Cool"
TIP* If you click on the blue bars, it will become red, as seen above. Once you do this, you will see below the graph all of the contexts where the word you have searched is used. You can use this to see examples of how the words are used in writing and speaking.

4) **KWIC (Key Words In Context):** Show the key word(s), i.e. search word(s), in contexts (in actual written and spoken language). This function is useful when you are interested in examining what kinds of parts of speech should follow certain phrase or what kinds of prepositions or articles are frequently used with certain phrases (e.g. whether one should use the preposition on, at, or in after the phrase look down as this is often confusing for ESL learners).

**Figure D.5: KWIC Search Command of "Look forward to"**

In the above figure, we can see all of the collocates that go with “look forward to”. You can see what comes after before and after.

5) **COMPARE:** Compare two words according to their frequencies (general frequency or frequency of the search words with a certain collocate). This function is useful if you already have two possible word choices in mind but cannot decide which one to use in the given context. (Certainly, “frequency” is not the only criteria for judging a better collocate. Larger, discourse context should also be considered. Nonetheless,
frequency often indicates a natural collocation.) Suppose you are debating which of the two adjectives, hot and heated, should be used in a sentence like “There has been a __________ debate over the issue.” As shown in figure 6, the frequency of hot with debate is only 48, while that of heated with debate is 319. Certainly, heated is a more natural collocate with debate. If you are still in doubt, he/she can check the context by clicking on the numbers and make a more informed decision.

Figure D.6: COMPARE Search Command of "hot" vs. "heated" with the collocate "debate"

Figure D.7: COMPARE Search Result of "hot" vs. "heated" with the collocate "debate"

TIP* To understand this function, look at the “score”. You can see that heated has scored a 70.3 in usage, while hot has scored 0.0.

B. Types of Queries (Search String)
1) WORD: a search word or phrase
   By default, you can just type in the search word to mean you want the exact word from to be searched (COCA is also case-sensitive!). You can modify the format of the search word (search syntax) in many different ways for different purposes:
   - **Lemma word search**: If you are interested in displaying all forms of a word, put the word in brackets. For example, [take] means you are searching for all kinds of verb forms of the word take such as taking, took, taken, takes, not just exactly take. Also, if
you want to limit your search to the verb take only, not the noun take, you can use "[take].[v*]".

→ Now, in COCA, in LIST type in [take] and click search.

- **Synonym word search**: If you are interested in displaying a synonym of a given word, you can use [=word] option. For example, search command [=integrate] will give you its various synonyms such as add, mix, participate, combine, incorporate, etc.
  → Now, in COCA, in LIST type in [=integrate] and click search.

- **Wildcard word search**: If you don’t know the exact word (or a collocate of the word) you are looking for but you know which part of speech (noun, verb, adjective, etc.) you want, you can simply put part of speech symbols with *, such as [v*](verb), [j*] (adjective), [n*] (noun), in the WORD box.

  **You do not have to memorize these symbols as they can be displayed by activating POS LIST menu (For detailed instructions, read the instructions on POS LIST below).**

  **Also, if you remember only a spelling of a word only partially, but cannot recall the full spelling, you can type in parts of the known spelling with * (e.g. type in “souv*” to find the full spelling “souvenir”). If you don’t remember only one letter, you can use ? instead of *.

*Note: There are other more advanced search commands available in COCA. Please consult the information on “Query Syntax” available in the Help (on “Searches”) section of the website.*

2) **COLLOCATES**: a word (NOT a phrase) that occurs within up to 10 words before / after the search word(s) You can choose the collocation range by clicking two little boxes next to the COLLOCATE box as shown in Figure 8.
Figure D.8: LIST Search Command with Word(s) and its Collocates—This shows you how to input the words.

3) POS LIST: List of search commands for “parts of speech”

POS LIST shows appropriate search command for wildcard search word with certain part of speech. The dropdown menu can be activated or de-activated simply by clicking the word POS LIST. Once this is activated and the cursor is placed either in the Word box or in the Collocate box, one can choose the part of speech of the wildcard search word.
For example: Suppose you don’t know which preposition to use in a sentence like “I am going to New York ___ Spring Break”, he/she may try typing either “[*] Spring Break” in the Word box (See Figure 11) or “Spring Break” in the Word box with “[*]” in the Collocate box (See Figure 12).

Figure D.11: Wildcard Search Command & Result for Prepositions Used with Spring break

Figure D.12: Wildcard Search Command & Result for Prepositions Collocating with “Spring break”

TIP** The second option (Figure 12) is more useful when the collocating word does not immediately occur right before or after the search word. For example, in case of “[verb] + [noun]” collocations, such as “pick up + phone” or “take + shower”, the collocating word does not always occur right next to the search word because a determiner (the, a, an) and/or an adjective are frequently inserted between the verb and the noun (the object of the verb) as in “pick up the phone”, “take a very long shower”, etc. Therefore, using “pick up phone”, “take shower” as search string would not show many search results (or no result!) even though they are very common collocates in English. (This is in fact the most common mistake students make.)
5. **Tips for More Successful Use of COCA as a Reference Tool in Writing**

1) For setting up a good search string, choose the right search key word (an anchor word) carefully. Not all adjacent words are relevant for a search (or interpretation of the search). E.g.) if you are looking for a content word that goes into the blank in *I hope to ___?____ the goal*, you should use the *goal* as an anchor word (the key word for search) because it determines the kind of the verb you should use in the blank. You should not use *hope to* as an anchor word.

2) Use a search (word) string that is an appropriate size.

   If the search string is too short (only one or two words), it is difficult to get a reliable answer quickly. (e.g. using only "implications" as a search word to find the preposition for "implications ___ teaching ESL")

   If the search string is too long (too specific), it is difficult to find many matching texts. (e.g. using "implications for teaching ESL")

3) For interpreting the results, Go for MORE FREQUENTLY used phrases.

   "Hot debate" and "Heated debate" are both possible collocates in English, but "heated debate" is much more commonly used.

4) Always check the CONTEXT and GENRE.

   It is often dangerous to look at only the frequency count and decide which one to use. Having a higher frequency count does not always mean both words are possible in a given context. For example, "totally" and "fully" are considered synonyms, but only one of them is desirable in academic English. Also, "received the phone call" and "answer the phone" are both possible/frequent in English, but only one of them would work in a given context.

5) If there is no or few result showing, it happened for one of the following reasons:

   - One of the words could be spelled wrong, or an ungrammatical word.
   - The word combination is impossible or rare.

6) If COCA is ever NOT working, always refresh. In fact, whenever you are searching something new, simply refresh COCA and it will keep it working properly.

6. **How to use the Error Symbols and COCA**

   1) When you receive your papers back from the researcher, you will see the error correction symbols. This is how you want guide your use of COCA. Use the error symbols to guide you on which POS (part of speech) to use and what to look for.
For example: If you receive your paper back with edits from the teacher. One sentence may look like this:

In my life there are a lot (**prep**) memorial**(wc)** days with my family.

1. For **a lot (**prep**)** → Go to COCA in LIST and type in a lot [*i*] days. Your search result will find you “a lot of days”. You will see that ‘of’ goes with days.

2. For **memorial (wc) days**, you know it is a word choice problem from the error symbols list. In COCA, in LIST type in “memorial days”, you will see that there are no search results. Word choice errors will be the hardest, since there are a number of different words you can choose from. From here, you will have to make a decision from COCA based upon your own judgment to find the right word. From that, you know that this collocation does not exist. Now, you have to decide what type of word search error it is: thinking about various aspects of vocabulary (part of speech, register, spelling, collocation, meaning in context, frequency, and synonymy). For “memorial days” this can be one of two things: 1. Either a spelling error, or 2. A part of speech error. From that you have to decide which search string to use. Then, in COCA, you will want to partial wildcard search. If it is a part of speech error, normally in English, this is decided by the word ending. So, in COCA you will have to use the new interface [http://www.wordandphrase.info/frequencyList.asp](http://www.wordandphrase.info/frequencyList.asp). This interface is easier for word choice errors. Type in “**memor***”→ this treats the error as if you do not know the spelling. You will get a list that looks like this:

**Figure D.13: Partial Wildcard search for “memor***”**

<table>
<thead>
<tr>
<th>RANK #</th>
<th>PoS</th>
<th>WORD</th>
<th>TOTAL</th>
<th>SPOKEN</th>
<th>FICTION</th>
<th>MAGAZINE</th>
<th>NEWSPAPER</th>
<th>ACADEMIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N</td>
<td>MEMORY</td>
<td>47001</td>
<td>5887</td>
<td>13035</td>
<td>10724</td>
<td>6890</td>
<td>10465</td>
</tr>
<tr>
<td>2</td>
<td>N</td>
<td>(MEMORIAL)</td>
<td>10826</td>
<td>1423</td>
<td>1015</td>
<td>2044</td>
<td>4686</td>
<td>1658</td>
</tr>
<tr>
<td>3</td>
<td>J</td>
<td>MEMORABLE</td>
<td>3881</td>
<td>539</td>
<td>318</td>
<td>1257</td>
<td>1727</td>
<td>502</td>
</tr>
<tr>
<td>4</td>
<td>V</td>
<td>MEMORIZE</td>
<td>2294</td>
<td>222</td>
<td>859</td>
<td>437</td>
<td>262</td>
<td>473</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>MEMORABILIA</td>
<td>1428</td>
<td>234</td>
<td>132</td>
<td>395</td>
<td>609</td>
<td>58</td>
</tr>
<tr>
<td>6</td>
<td>N</td>
<td>MEMORANDUM</td>
<td>1007</td>
<td>181</td>
<td>196</td>
<td>247</td>
<td>398</td>
<td>885</td>
</tr>
<tr>
<td>7</td>
<td>V</td>
<td>MEMORALIZE</td>
<td>536</td>
<td>84</td>
<td>50</td>
<td>151</td>
<td>107</td>
<td>144</td>
</tr>
<tr>
<td>8</td>
<td>N</td>
<td>MEMORIZATION</td>
<td>372</td>
<td>20</td>
<td>26</td>
<td>53</td>
<td>36</td>
<td>237</td>
</tr>
<tr>
<td>9</td>
<td>R</td>
<td>MEMORABLY</td>
<td>239</td>
<td>18</td>
<td>10</td>
<td>93</td>
<td>61</td>
<td>57</td>
</tr>
</tbody>
</table>
Now, you know you need an adjective, since you used the wrong part of speech. Go to the first adjective you see above and [[ ]]] and click on it. You should get the figure 14 below.

**Figure D.14 Word in context: Memorable**

<table>
<thead>
<tr>
<th>GENRE</th>
<th>SORT</th>
<th>WORD</th>
<th>MEANING</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPOK</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAC</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACAD</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPOK</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAG</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEWS</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAG</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAG</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPOK</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPOK</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAG</td>
<td>11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAG</td>
<td>12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NEWS</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACAD</td>
<td>14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Start to read the sentences and also notice what genre they are used in (e.g. spok, mag, acad, news, etc). From this word, you can see that this is the correct word you want to use. If this is not the right word, try to click on another word to see it in context.

**COCA (CORPUS OF CONTEMPORARY AMERICAN ENGLISH) SIMPLE EXERCISES**

**Step 1:** Look at the example sentence below. Answer questions a) - c). Then, circle the word that you should use in your paper.

*I am **fully / totally** aware of the problem.*

- a) In which genre is “totally” most frequently used?
- b) In which genre is “fully” most frequently used?
- c) So, which word would you use in your paper?

**HINT** You should use CHART display option.

**Step 2:** Using COCA, find a better (more frequently used) collocate for the word “technology” in the sentence below.

*I’m studying **utilization / application** of modern **technology** in classes.*

**HINT** You should use COMPARE display option with COLLOCATE search string.
Step 3: Look at the two sets of sentences. Which one is correct? Use KWIC option in COCA to find out the answer.

1) In this digital age, there is no limit to explore information.
2) In this digital age, there is no limit to information we can explore.

HINT) You should use KWIC display option.

Step 4: Look at the example sentences below. The underlined word in each sentence is an awkward collocate of the word in bold. Using COCA, find better collocates and revise the sentences. (You should keep the original meaning of each sentence) Decide which function you should use on your own. If you can’t think of which one to use, look at the hint below.)

1) I hope to succeed the goal.
2) There has been a hot debate over the issue.
3) He firmly recommended this place.

HINT) You should use LIST display option with a wildcard (v*, adj*, adv*) COLLOCATE or a synonym COLLOCATE search string.

COCA (CORPUS OF CONTEMPORARY AMERICAN ENGLISH) SIMPLE EXERCISES (KEY)

I. How to solve problems in Step 1

1) Try CHART inquiry (The result is displayed on the right) of “totally” as below.

① Select CHART
② Type in the word
③ Click!

④ Result: “totally” is most frequently used in speaking!

2) Do the same thing for the word “fully”. You will find in the result that it is most frequently used in an academic genre. (Note that next to the “genre” chart, there also is a “time” chart, which some people might be interested to look at.)
II. How to solve problems in Step 2

I’m studying *utilization / application* of modern *technology* in classes.

1) Try COMPARE inquiry following steps below.

   ① Select COMPARE

   ② Type words to compare (one word only for each box!)

   ③ Type in the collocating word

   ④ Click!

2) You will see the result as below.

   The word “utilization”(W1) was used only 21 times while “application”(W2) was used 120 times. So, “application” is a better choice.

   *Note:* For some reason, you cannot click the numbers to see context (although it says so at the top. Weird, huh?) So, if you want the context of each case, you may try the KIWIC search of each word separately. Also, don’t be too concerned with other functions like W1/W2 or SCORE for now.
III. How to solve problems in Step 3

1) Try KWIC inquiry following steps below.

1. Show me the word(s) below in context...
2. Type in the word(s)
3. Click search!

2) You will see the result as below. From the result, you can see what kinds of words follow the given phrase. Here, “to” is used as a preposition since it is followed by nouns (noun phrases). Notice that words of the same part of speech are marked with the same color.

ose about a stock : believing that there is no limit to how much it can go. Sidebar CONFID
Since water does not wear out, there is no limit to how long it can be used, as long as
Since water does not wear out, there is no limit to how long it can be used, as long as
ion would not be tax deductible ; there is no limit to how much he could invest, and here
: exceed the maximum ! Because there is no limit to how much propellant you can pour d
Participation and action , though there is no limit to the amount of encouragement a task
on an Aging Society suggests that there is no limit to the amount of taxes American societ
regulates their consumption is that there is no limit to the amount of ideas one can use . C
or case to binding arbitration . " " There is no limit to the amount they can get (in arbitrat
hest shore you can never reach , There is no limit to the challenges awaiting men and wom
IV. How to solve problems in Step 4

1) I hope to succeed the goal.

1) Try Wildcard collocate LIST inquiry, following steps below

   ① Select LIST

   ② Select the part of speech you are looking for. If you select one, its acronym will automatically appear in the collocates box above.

   ③ Click!

   ④ This means the collocate should occur within 4 words (four word slots) before the search word(s).

2) Look at the search result. Can you find which word you want to use from the list?

   Aha! This word is what I'm looking for!

   Click the word if you want to see the context.
3) Still not satisfied? Do you want to see ONLY the synonymous verbs? Then, try a synonym inquiry as below.

**Synonym Collocate LIST inquiry**

- Select LIST
- This means synonyms of “succeed” that collocates with the word
- Click!

<table>
<thead>
<tr>
<th></th>
<th>CONTEXT</th>
<th>TOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ACHIEVE [1]</td>
<td>765</td>
</tr>
<tr>
<td>2</td>
<td>ACCOMPLISH [3]</td>
<td>236</td>
</tr>
<tr>
<td>3</td>
<td>WORK [S]</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>WIN [S]</td>
<td>42</td>
</tr>
<tr>
<td>5</td>
<td>SUCCEED [S]</td>
<td>13</td>
</tr>
</tbody>
</table>

**Example 2), 3)** can all be solved in the same way.
Common ESL Errors: Handout
Most of the errors in the following sentences are underlined. If it is not underlined, try your best to figure out the error.

Step 1: First, correct the error in each example sentence below. Then write what type of error it is using the error symbols (the list is provided for you).
If you cannot find/fix the error, put an X mark in the check box □.

(Tip: Read each sentence aloud to see if something sounds strange.)
Be sure to read the Error Types to see what type of error you should be looking for.

For Example: The first one has been done for you.
□ 1. After that, the ruling regime fell down and the new government cannot could not recover.
   Error Symbol: __va________

□ 2. It is better to stop than let the situation going out of control.
   Error Symbol: ______awk______

□ 3. My homework are difficult
   Error Symbol: ______sv______

□ 4. Oil consumption is hardly reaches its peak.
   Error Symbol: ______vt______

□ 5. It is unfair to treat someone badly just because they are suspected.
   Error Symbol: ______ps______

□ 6. A student has to study hard to pass their courses.
   Error Symbol: ______ns______

□ 7. I am from different universe.
   Error Symbol: ___conf__wc_& art______

□ 8. Internet offers many options for photo storage and organization.
   Error Symbol: ________wc____

□ 9. I received the good treatment from Dr. Smith.
   Error Symbol: _____art________

□ 10. We need to analysis this problem.
   Error Symbol: _____pos________
11. I received a lot of positive feedbacks.
Error Symbol: _______nopl_______

12. I like to buy shoe.
Error Symbol: _______pl_______

13. I like swimming running and biking.
Error Symbol: _______p____

14. Teenagers are too young to take the surgery. Due to they have not shape their body already yet.
Error Symbol: _______ro_______

15. Technology cannot behave as powerful as the traditional teaching method all the time, combining both could make our teaching-and-learning system much more effective.
Error Symbol: _______rodiv_______

16. One notion is that chocolate is bad for your health. Which is not true.
Error Symbol: _______cb_______

17. John studied, he passed the test.
Error Symbol: _______conn____

18. Jerry is at home. John is at home.
Error Symbol: _______cb_______

19. John came home early, and although he still wanted to work.
Error Symbol: _______oprep_______

20. Cloning is an awesome technology.
Error Symbol: _______wc________

21. I will go school.
Error Symbol: _______+prep_______

22. I stayed to home last night.
Error Symbol: _______oprep_______

23. What did you use to help you figure out these errors. Check all that apply:

- I figured them out myself
- I used google
- I used another website for help, what website?

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Step 2: Read the following paragraph written by an ESL student. Each sentence may have more than one type of grammar error. First, identify the error and put the correct error symbol next to it in parentheses (). Then, fix the error next to the word.

Additionally, is omitted age of the teen is always a big problem of cosmetic surgery. According to reading reading passage, the nose only can be reshape until the face is fully grown. In fact, for example, a boy who is only 10 years old already had done a cosmetic surgery on their nose to make it bigger. When he grows up and his nose grows bigger and bigger.

How big will nose be! Furthermore we cannot totally determine that the surgical procedure of a young teen. Will cause a lot of issues.

Note: This example paragraph has been adapted from an essay written by an ESL 115 student.
APPENDIX F: QUESTIONNAIRE

(Converted to Microsoft Word from Google Drive)

* Required

1. How would you rate your English grammar BEFORE ESL 505 *

Mark only one oval.
1 2 3 4 5 6 7 8 9 10
Poor Excellent

2. How would you rate your English grammar AFTER ESL 505?

Mark only one oval.
1 2 3 4 5 6 7 8 9 10
Poor Excellent

3. Where do you still need the most improvement?

4. How did you fix the grammar for your assignments?

Check ALL that apply
Check all that apply.
COCA
Myself
Friends
Other teachers
Dictionary
Google
Other:

5. Do you like getting grammar feedback on your writing assignments from the instructor?

Mark only one oval.
Yes
No

6. Do you like the error symbols used in this class?

Mark only one oval.
Yes
No

7. Would you prefer the instructor to change the error to the correct form for you?

Mark only one oval.
Yes
No

8. Do you think you have been learning from your grammar mistakes in this semester?

Mark only one oval.
Yes
No

9. What grammar errors do you think you have improved on the most?

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10. What grammar errors do you think you still need help on? *

11. Which error symbols were difficult to learn? *

12. I liked the error symbols. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    Not at all        Yes, very much

13. I will continue to use the error symbols when I write. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    No, I will not.    Yes, I will.

14. I would use the error-symbols if trying to help someone who needs help checking their grammar. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    No, I would not. Yes, I would.

15. It is easy to understand the basics of COCA *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    No        Yes

16. The searching technique in COCA was easy to learn. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    No        Yes

17. I know what to type in when I am searching in COCA. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    No        Yes

18. I feel confident in being able to find what I need in COCA. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    No        Yes

19. COCA never gives the response I am looking for. *
    *Mark only one oval.
    1 2 3 4 5 6 7 8 9 10
    Never    Always
20. COCA is more helpful than a dictionary for my English writing. *  
Mark only one oval.  
1 2 3 4 5 6 7 8 9 10  
No Yes  

21. COCA is more helpful than Google for my English writing *  
Mark only one oval.  
1 2 3 4 5 6 7 8 9 10  
No Yes  

22. COCA has improved my English writing ability. *  
Mark only one oval.  
1 2 3 4 5 6 7 8 9 10  
No Yes  

23. It was easier to use COCA after learning the error-correction symbols. *  
Mark only one oval.  
1 2 3 4 5 6 7 8 9 10  
No Yes  

24. The Error symbols helped me use COCA. *  
Mark only one oval.  
1 2 3 4 5 6 7 8 9 10  
No Yes  

25. I have some difficulty in using COCA due to time and effort spent on analyzing the data. *  
Mark only one oval.  
1 2 3 4 5 6 7 8 9 10  
No Yes  

26. In what ways is COCA useful? *  
Please check ALL that apply  
Check all that apply.  
Learning the meaning of vocabulary  
Learning the usage of vocabulary  
Learning Grammar  
Learning proper English phrases  

27. I will continue to use COCA. *  
Mark only one oval.  
Yes  
No  

28. If you answered yes to the question above, in what ways will you use COCA? *  
29. Any final improvement suggestions for the error symbols?  
30. Any final improvement suggestions for COCA?
APPENDIX G: INTERVIEW QUESTIONS

1. How would you rate your English grammar ability in the beginning of ESL 505?
2. How would you rate it at the end of ESL 505?
3. How will you now continue to improve your grammar?
4. How did you feel about the error-symbols used in class?
5. Was it hard to fix the error once you were given the symbol?
6. How do you normally fix the grammar in your assignments?
7. Do you think that if you have to write more words in English, that you will have more chance for error?
8. What was the most difficult assignment to write in class?
9. What was the easiest?
10. Why do you think you have errors?
    a. Time Pressure
    b. Unsure
    c. Assignment Type
    d. Not your Native Language
    e. Many factors
11. Did you try to get rid of all your errors for the final draft?
12. How did you fix the errors for:
    a. Memo
    b. Summary
    c. Critical Analysis
    d. Decision Essay
13. What type of effort did you put in for:
    a. Memo
    b. Summary
    c. Critical Analysis
    d. Decision Essay
14. What is the most difficult grammatical aspect of English for you? The easiest?
15. What did you use COCA for?
16. What do you like about COCA?
17. What do you not like about COCA?
18. Do you have any suggestions to improve COCA?
19. If COCA was simplified, would you want to use it more?
### APPENDIX H: ERROR-SYMBOL TYPES

<table>
<thead>
<tr>
<th>Error Category</th>
<th>Error Symbol</th>
<th>Explanation and Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Verb</strong></td>
<td>sv</td>
<td>subject-verb disagreement (My homework are difficult.)</td>
</tr>
<tr>
<td></td>
<td>vt</td>
<td>incorrect verb tense (I was lived in Hawaii for two years.)</td>
</tr>
<tr>
<td></td>
<td>va</td>
<td>incorrect verb form: the aspect of the verb is wrong (I am liking the new novel by John Updike.)</td>
</tr>
<tr>
<td></td>
<td>+verb</td>
<td>a verb was left out (John and Mary x to school.)</td>
</tr>
<tr>
<td></td>
<td>+mod</td>
<td>a modal verb was left out (Maureen is sleepy. She <em>should</em> have gone to bed earlier.)</td>
</tr>
<tr>
<td><strong>2. Pronoun</strong></td>
<td>ps</td>
<td>person shift: change in point of view (If students work hard, you will succeed.)</td>
</tr>
<tr>
<td></td>
<td>pref</td>
<td>the coreferent of the pronoun is not clear (Jane and Sue walked up the hill, but <em>she</em> never came down.)</td>
</tr>
<tr>
<td></td>
<td>ns</td>
<td>number shift; change between number of nouns and pronouns (A student has to study hard to pass <em>their</em> courses.)</td>
</tr>
<tr>
<td></td>
<td>+pro</td>
<td>a pronoun was left out (The people took <em>x</em> complaint to the President.)</td>
</tr>
<tr>
<td></td>
<td>opro</td>
<td>omit a pronoun (That's the city that I left <em>it.</em>)</td>
</tr>
<tr>
<td></td>
<td>wpro</td>
<td>wrong pronoun</td>
</tr>
<tr>
<td><strong>3. Preposition</strong></td>
<td>+prep</td>
<td>a preposition was left out (I will go <em>x</em> school.)</td>
</tr>
<tr>
<td></td>
<td>oprep</td>
<td>omit a preposition (Let's go to <em>home.</em>)</td>
</tr>
<tr>
<td></td>
<td>wprep</td>
<td>wrong preposition</td>
</tr>
<tr>
<td><strong>4. Sentence Structure</strong></td>
<td>ro</td>
<td>run-on sentence (The boys were playing at the gate all</td>
</tr>
<tr>
<td>5. Sentence Meaning</td>
<td>wc</td>
<td>word choice. (So one must learn how to supervise dreams and nightmares.) (\rightarrow) interpret</td>
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<td>----------------------</td>
<td>----</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>awk</td>
<td>awk</td>
<td>awkward expression; tangled syntax (Tony knows it is true many of the wounded will cause many of the inconvenient because of sick with them.)</td>
</tr>
<tr>
<td>re</td>
<td>re</td>
<td>redundant information: something was unnecessarily repeated (The tall giant is big.)</td>
</tr>
<tr>
<td>nr</td>
<td>nr</td>
<td>idea not relevant to the main idea or topic sentence</td>
</tr>
<tr>
<td>conf</td>
<td>conf</td>
<td>What do you mean? This sentence is confusing, needs to be reworded or changed (Teenagers are too young to take the surgery. Due to they have not shape their body already yet)</td>
</tr>
</tbody>
</table>

<p>| 6. Conjunctions/Connectors | oconn | omit a connector (John came home early, and although he still wanted to work.) |</p>
<table>
<thead>
<tr>
<th>Error Type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>+conn</td>
<td>a connecting word, or connector, was left out (John studied, he passed the test.)</td>
</tr>
<tr>
<td>cb</td>
<td>two or more sentences need to be combined (Jerry is at home. John is at home.)</td>
</tr>
<tr>
<td>7. Punctuation/Spelling</td>
<td>cap</td>
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<td></td>
<td>p</td>
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<td></td>
<td>nopl</td>
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<td></td>
<td>pl</td>
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<td></td>
<td>sp</td>
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<tr>
<td>8. Articles/General/Informal Language</td>
<td>+art</td>
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<tr>
<td></td>
<td>oart</td>
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<tr>
<td></td>
<td>omit</td>
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<tr>
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<td>+subj</td>
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<td></td>
<td>+nour</td>
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<tr>
<td></td>
<td>inf</td>
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<td></td>
<td>pos</td>
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</tbody>
</table>