

# The Role of Corpus Linguistics in Grammar Instruction: A Review of Literature

Basim Alamri

English Language Institute, King Abdulaziz University

Saudi Arabia

E-mail: [bmalamri@kau.edu.sa](mailto:bmalamri@kau.edu.sa)

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## Abstract

The development of grammar instruction and research has begun in the past two decades (Conrad, 2000). Teaching English grammar has been delivered via a traditional method. The present study provides a literature review of how grammar instruction has been influenced by corpus linguistic (CL). The review points out the benefits of implementing corpus-based approach in grammar instruction and some difficulties encountered both teachers and students when applying CL tools. The perceptions of students and teachers towards using CL in grammar instruction was also highlighted. The results of the review showed that corpus-based approach enhanced students grammar knowledge, fostered learning autonomy, and improved students scores in grammar tasks. The review also reported some challenges, such as technical difficulties and glitches, issues in designing corpus-based materials and conducting corpus-centered activities, and increased teachers workload. Overall, the participants in the reviewed studies reported positive perceptions towards using corpus-based approach in grammar instruction. Implementing this approach helps teachers design suitable materials and students gain grammar knowledge. It is suggested that further studies are needed to investigate the effectiveness of corpus-based approach in specific grammatical aspects.

**Keywords:** Corpus linguistics, Corpora, Data-driven learning, Grammar instruction, Review of literature

## 1. Introduction

Teaching grammar in academic writing for English as Second or Foreign Language (ES/FL) students is considered a challenging task for English language teachers. Students encounter several problems when they write academic essays or research articles. Such problems

include the correct usages of tenses or the appropriateness of vocabulary/collocations choices. Students could attempt to solve these problems throughout consulting traditional grammar textbooks and dictionaries, or they could consult their teachers. The appropriateness of answers to grammar questions would vary depending on teachers' knowledge which is mostly based on traditional textbooks that they studied. Also, consulting the Internet is a good strategy, but it could cause other problems unless the consulted website has an authentic content. In recent years, there has been a growing interest to implement corpus linguistics (CL) in classrooms.

Corpus linguistics is defined as “the study of language based on examples of “real life” language use” (McEnery & Wilson, 1996). O’Keefe et al. (2007) defined corpus as “a collection of texts written or spoken, which is stored on a computer and can be analyzed qualitatively or quantitatively using analytical software” (p.1). Corpus linguistics tools have been developed and widely used to analyzing students writing and also different types of texts. These tools can be divided into two types: desktop (offline) and web-based (online) tools. AntConc (Anthony, 2019), WordSmith (Scott, 2013), and #LancsBox (Brezina et al., 2015) are common desktop tools, whereas Wmatrix (Rayson, 2008) and SketchEngine (Kilgarriff et al., 2014) are web-based online tools. These advanced tools have provided four characteristics for corpus-based analyses of language:

- It is empirical, analyzing the actual patterns of use in natural texts.
- It utilizes a large and principled collection of natural texts, known as a ‘corpus’, as the basis for analysis.
- It makes extensive use of computers for analysis, using both automatic and interactive techniques.
- It depends on both quantitative and qualitative analytical techniques (Biber et al., 1998, p. 4).

Grammar has been taught traditionally in several EFL and ESL classrooms. Teachers explain grammar rules (e.g., tenses) to students asking them to memorize these rules and structures. Teachers then provide various activities such as multiple choice questions. In such situation, students could perform better in the midterm or final exam, but it may not reflect to what extent students recognize the inner meaning or how to apply these grammar rules in written or oral communication (Xia, 2019). The lack of innovating new grammar teaching methods could be related to teachers preparation. Gordon (2005), for instance, pointed out that many teachers “avoid[ed] the need for grammatical content knowledge by approaching language teaching from a predominantly sociological, rather than linguistic perspective” (p. 50). There has been a call to include corpus linguistics into grammar teaching which could enhance students and teachers involvement in teaching grammar (Lin & Lee, 2015; Özer & Özbay, 2022; Park et al., 2019).

Corpus linguistics plays significant roles in the reform of grammar instruction (Xia, 2019). A corpus-based approach to grammar instruction could provide benefits for teachers and students (Pham, 2020). Corpora provide real authentic examples from frequent academic

English usage which allow teachers to create various activities based on students' needs (Folse, 2016). Recent research studies have encouraged teachers and students to employ corpora and concordance tools in learning process (Park et al., 2019). These studies reported that students' language proficiency levels have increased after applying corpora inside and outside the classroom. According to Conrad (2000), corpus linguistics studies would revolutionize the teaching of English grammar through three major changes in 21<sup>st</sup> century: "1) Monolithic descriptions of English grammar will be replaced by register-specific descriptions; 2) The teaching of grammar will become more integrated with the teaching of vocabulary; 3) Emphasis will shift from structural accuracy to the appropriate conditions of use for alternative grammatical constructions" (p. 549).

Despite the fact that corpora resource tools need specific training sessions to use them effectively, these tools play important roles in improving students' academic writing skills. This improvement can be seen throughout different aspects, such as vocabulary and collocations (Biber, 2009; Gaskell & Cobb, 2004; Gilmore, 2009) and grammar (Luo & Liao, 2015; Tseng & Liou, 2006). However, studies that investigated teaching English grammar by using corpora are relatively scarce. Therefore, the present literature review study addresses the following research questions:

1. How is corpus linguistics implemented in English grammar instruction?
2. How do teachers and students perceive this implementation to enhance academic writing skills?

## 2. Method

The present study involved a comprehensive and systematic review of literature to investigate the role of corpus linguistics in teaching English grammar. The study followed several procedures. First, a list of keywords were identified including, *corpus linguistics*, *corpora*, *grammar teaching/instruction*, *concordance/concordancer/ concordancing*, *Data-driven learning (DDL)*. These keywords then were searched for only peer-reviewed articles in different database, including Google Scholar, Scopus, and EBSCO. Given the fact that the topic of the present study is rather narrow, I included peer-review articles published from 2000 to 2022. The identified articles then were analyzed and reported in three themes: the benefits and obstacles of implementing corpus linguistics tools in grammar instruction and teachers and students' attitudes towards using corpora in developing academic writing and grammar instruction.

## 3. Results and Discussion

To answer the first research question, the following sections illustrate the benefits and hinderance of applying corpora in grammar instruction. Then the second question reports on teachers and students perceptions towards corpus linguistics and grammar instruction.

### 3.1 Benefits of Using Corpora in Grammar Instruction

The role of corpora in improving grammatical knowledge is a debatable issue since the results of different research studies have revealed a contradiction in approving the corpora

effects. Several research studies have investigated implementing corpora resources to develop academic writing skills in terms of grammar (Gaskell & Cobb, 2004; Tseng & Liou, 2006). However, certain studies focused mainly on the students' attitudes towards using corpora to teach grammar. Other researchers claim that corpora did not affect grammatical knowledge development (Lee et al., 2009).

Starting from the opposed belief, Yoon and Hirvela (2004) examined students' perceptions and uses of corpora and also the corpora strengths and weaknesses. Interestingly, even though students reported that corpora benefited them in enriching their vocabulary knowledge and usage, the mean of grammatical knowledge was low. The researchers could not explain the reasons behind this result. They, the researchers, placed the blame on students' perceptions since they had taught grammar for long time by using grammar teaching methods. Furthermore, Vannestal and Lindquist (2007) examined students' attitudes towards corpus when they learn English grammar through corpus tools. Two groups, controlled and experimental, were taught grammatical content, for example, subject-verb agreement, article usage and tense choices. The controlled group used traditional grammar textbooks and regular exercises, whereas the experimental group used corpora activities such as online activities after the students had taken a training course in how to deal with a corpus activity. The results showed that students have positive attitudes towards corpora, and they reported that corpora were more beneficial than regular textbook. Unfortunately, the study did not investigate the improvement of academic writing in terms of grammar knowledge. To investigate the reasons behind these findings, Lee et al. (2009) placed the blame of the failure of corpus in developing grammatical knowledge on three elements "training, different notions on learning grammar, and lack of knowledge on consultation skills" (p. 250).

On the other hand, several research studies have revealed the importance of corpora in improving grammatical knowledge and usages (Elsherbini & Ali, 2017; Gaskell & Cobb, 2004; Kilichevna, 2022; Lin & Lee, 2015; Pham, 2020; Rodríguez-Fuentes & Swatek, 2022; Tseng & Liou, 2006). Tseng and Liou (2006) carried out a study to investigate the effect of applying corpora in understanding the accuracy of conjunction in students' writing. Nineteen EFL students were trained and taught to use online corpora exercises for one month. The study found out that students showed development in the accuracy of using conjunctions, and they understood how to use connectors correctly. Also, students' writing quality noticeably improved. Further, students had positive attitudes towards using the online corpora activity.

An interesting study carried out by Gaskell and Cobb (2004) revealed unexpected findings. Students were asked to use concordancer program to reduce their grammatical errors after being given feedback on their writing. The results showed that students' ability to use and understand different grammar points was improved, and the concordancer helped them overcome the problem in forming sentences. When the researchers, however, attempted to find out the errors which were affected by using concordancer in the given pre-test, they found that grammatical errors did not decrease at all in the post-test.

In Lin and Lee's (2015) study, early-career teachers compiled their own data-driven learning materials to teach English grammar to EFL college students. The results revealed that DDL

was an innovative approach to teach English grammar. Likewise, the effectiveness of DDL-based grammar instruction was observed in Özer and Özbay's investigation (2022) in Turki. The authors conducted a 2 seven-week experimental study involving grammar instruction strengthened by DDL techniques, conducting pre-test and post-test and a focus group interview with the participants. A total of 19 grammar lessons were designed covering different topics in the curriculum. The analysis revealed an improvement in students achievement in the pre-and-post tests and grammar activities. The study also showed that using DDL in grammar instruction could foster teachers and learners autonomy.

In Egypt, Elsherbini and Ali (2017) investigated students perceptions towards using corpus-based activities and their effectiveness in developing student grammar knowledge. The study involved 104 freshmen students studying business English. By implementing a mixed-methods design, the authors collected different data, including a vocabulary test, a grammar test, a questionnaire, and semi-structured interviews. The study results showed that the experimental group who had corpus-based activities performed better than those who were taught grammar and vocabulary in a traditional way. Also, the participants reported positive perceptions towards using corpus linguistics in grammar and vocabulary classes.

In a recent study, Pham (2020) carried out an empirical study to investigate the effectiveness of corpus-based approach to grammar instruction in IELTS writing classrooms. The author implemented a concordance software program called AntConc (Anthony, 2019) to teach English grammar in IELTS writing classes. Four steps were followed to apply the experiment as follows: Step 1: Collect IELTS Essays Written by IELTS Experts, Step 2: Use AntConc to Examine Passive Constructions, Step 3: Train Students to Use AntConc, Step 4: Provide Students with Hands-on Experience with AntConc. The results showed that corpus linguistics enhanced teachers' knowledge of what and how syntactic structure should be taught in IELTS writing classrooms. The study also indicated the benefit of this approach in promoting students autonomy and critical thinking skills. In a classroom-based study conducted in Colombia, Rodríguez-Fuentes and Swatek (2022) investigated the effectiveness of individual study (i.e., homework) by implementing corpus informed (CI) and non-corpus informed (NCI) grammar textbooks on the learning of one grammatical construction (post-predicate *-ing* and infinitive clauses controlled by verbs) in a group of 89 EFL learners. The participants were grouped into CI and NCI groups. The results from pretest, post-test, and delayed test revealed that both groups gained significant knowledge regarding the grammar construction. However, the CI group had a larger effect than the NCI group, "providing evidence for the potential advantage of CI material use for homework as a supplement for instruction (p. 1).

Similarly, Kilichevna (2022) carried out an experimental study in Uzbekistan to explore the impact of corpus-based grammar activities on enhancing students' grammatical knowledge. The study involved an experimental group taught by corpus-based activities and task and a control group which was taught by traditional way. The data collection included tasks, questionnaires, and interviews. The author reported that the corpus-based grammar tasks were more effective than traditional grammar tasks. Students reported that they would use corpus sites to explore more about different usage of common grammar rules.

Overall, the call of Conrad (2000) has dramatically affected teaching grammar reform in both EFL and ESL contexts. Since then, there has been an increased number of studies investigating corpus-based grammar approach (Kilichevna, 2022; Park et al., 2019; Pham, 2020; Rodríguez-Fuentes & Swatek, 2022). From the presented research studies, it can be clearly seen that corpus resources have great impact on improving students' grammatical knowledge. Furthermore, corpus consultation reduces grammatical errors so that academic writing skills will differently improve. In addition, by consulting concordancer programs, students can become self-dependent in correcting their mistakes without the need for the teachers' help to correct every mistake.

In addition, by presenting the previous benefits of using corpora tools, there are several recommendations that have to be stated in order to effectively apply these tools to improve academic writing skills. First, teachers and students should take advantage of all these benefits in order to develop their writing skills. Moreover, teachers and students should take the initiative step to integrate corpora resource tools in their teaching academic writing lessons to develop their writing accuracy. Teachers also should not wait corpus linguistic researchers to conduct studies on their students. Second, many research studies are needed to investigate the influence of corpus linguistic in improving academic writing skills in term of accuracy, collocations and writing styles. Since teaching English language through collocations is a contemporary topic, researchers in the field of corpus linguistics have to place great effort in conducting studies related to the use of collocations in writing. Third, the universities' stakeholders have to encourage their faculty members to increase the awareness of corpora and concordance programs. This can be done through providing these programs for free at the universities. Moreover, the university administrators should provide training courses for faculty, staff and students in order to tackle the problems that might be arise during the learning process.

### *3.2 Hindrance of Implementing Corpora in Grammar Instruction*

The majority of research studies shared similar challenges when applying DDL in grammar instruction. For instance, Lin and Lee (2015) reported some challenges including technical difficulties and glitches, issues in designing DDL materials and conducting DDL-centered activities, and increased teachers workload. In addition, it has been widely argued by corpus linguistic researchers that applying corpora tools inside and outside the classroom needs not only a considerable experience in using computer but also training sessions and courses in how to use corpora tools (e.g., concordancers) to look for a lexical or grammatical usages of certain words or even certain sentences. This claim could be partially correct as the learners need training courses for using concordancers software especially novice users. However, since the era now is the technological revolution, the majority of today's students have the capability to use computer effectively. Therefore, the first part of the problem is probably solved.

As for the other part which is students' abilities in using concordancer program, it can be resolved by providing training courses in how to deal with these programs. Based on my experience, it only could take few hours for students to become familiar with some



easy-to-use and basic corpora programs and even novice computer users can handle these programs easily without any difficulties. A good example of the training course was done by Lee et al. (2009). In their study, the training course was held for in-service teachers for just two hours. The teachers had given clear instructions and explanations with various examples in how to use online programs such as Concord Writer 2 (CW2) – a type of concordancer – in order to improve their writing skills. Conroy (2010) also spent about one to four hours in his study to train the participants in how to use concordancers (i.e., Google search techniques) in their writing and the use of online dictionaries. Not far from these time periods, Gilmore (2009) found that after only a 90-minutes introductory session, students appeared to be able to use corpus resource tools effectively to improve the naturalness of their writing, and the vast majority of the students found the training course useful. So that, as the previous research showed, training students how to use corpora and concordancers does not take much time, and also students do not have to spend much time to master using the corpora resources.

### *3.3 Teachers and Students' Perceptions Towards Corpora*

As a bridge to find out the influence of corpora in developing academic writing, students and teachers' attitudes towards using corpora should be thoroughly explored. Several research studies have found that students and teachers have positive attitudes towards corpora (Conroy, 2010; Sun, 2007; Vannestål & Lindquist, 2007; Yoon & Hirvela, 2004). The teachers and students pointed out that corpora have helped them in improving their academic writing especially in terms of certain aspects such as vocabulary, collocations and grammar. Vannestål and Lindquist (2007) examined 23 ESL students from intermediate and advanced levels about their behaviors towards corpora in their writing. The results revealed that students believed that some corpora techniques helped them improve their writing abilities. In Yoon and Hirvela's (2004) study, they found that students had positive feelings towards corpus-based language learning techniques. The survey presented that these techniques improved students' writing abilities in two ways; the usage of vocabulary and phrases and learning the meaning of words. Sun's (2007) study emphasized the positive attitudes towards corpus along with another benefit by using web-based concordance. It helped students in "acquiring knowledge of the actual usage of individual words as well as phrases, and in reading comprehension" (Yoon & Hirvela, 2004, p. 262).

## **4. Conclusions and Suggestions for Further Studies**

The present literature review study has investigated the implementation of corpus linguistics in grammar instruction. The review indicated that corpus linguistics play significant roles in enhancing students' grammar knowledge which was reflected in their academic writing. Also, both teachers and students were able to develop their skills in how to use corpus linguistics tools to understand some grammar aspects. However, researchers are encourage to place effort in tackling issues that encountered teachers and students when they employ corpus-based approach. Furthermore, sufficient time should be spent to provide adequate and various training courses in how to use corpora.

With respect to different notions on learning grammar, this can be solved through increasing the teachers and students' awareness on how grammar knowledge is taught and learned.

Learners should change their views on learning grammar, and they have to keep updated with new teaching methods and approaches that deal with grammar. As long as students and teachers have strong positive attitudes towards corpus linguistics and they believe that it would help them improve their academic writing proficiency level, students and teachers should move forward in applying corpora resource tools in their teaching process.

Future studies could investigate in more depth the impact of various corpus linguistics tools on grammar knowledge. It would be interesting to study how data-driven learning techniques and activities improve specific grammatical aspects, such as relative clauses and sentence structure. More review studies are needed to identify the current status of implementing corpus-based approach in other language aspects or skills, including listening and speaking. By conducting further research studies, the role of corpora resource tools and their awareness will dramatically increase. Consequently, other benefits will be discovered.

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