

# Corpus-based *Voyant Tools* for Teaching IELTS Writing: Design and Implementation

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## ABSTRACT

This conceptual paper aims to present practical guidelines for integrating *Voyant Tools* into the design of IELTS writing classes, particularly in the English as a Foreign Language (EFL) context. The paper adopts a tool-application demonstration approach to propose instructional steps, drawing on a synthesis of literature in corpus linguistics in EFL teaching, *Voyant Tools* for writing, and *Voyant Tools* for teaching IELTS writing, which becomes the theoretical foundation of the practice. The method involves introducing *Voyant Tools*' interface and key functions, fetching data, selecting keywords, and applying the tool in classroom instruction. The proposed procedure highlights how *Voyant Tools* can serve as a valuable solution to expose learners to authentic language patterns and enhance their awareness of academic writing style, thereby contributing to their improved writing performance. This approach has implications for EFL instructors to seek more accessible, corpus-based teaching methods and for researchers exploring digital tools in language education. It is recommended that more educators, as well as students, incorporate similar tools in other areas of language skills. The limitation of this paper is acknowledged regarding the absence of empirical classroom testing across more varied learner backgrounds.

**Keywords:** *corpus linguistics, corpus-based teaching, IELTS writing instruction, technology-enhanced language learning, Voyant Tools*

## Introduction

Cheng & Warren, 2007 The use of corpus linguistics in research has gained popularity among practitioners and academics for instructional purposes, especially in the context of language education. This growing interest was primarily led by a group of researchers who examined the relationship between authentic language use, as reflected in corpus-based data, and the content presented in widely used educational textbooks. Most research produced astonishing results, highlighting a considerable gap between the language patterns found in corpora and those constructed by textbook authors (Cheng & Warren, 2007; Harwood, 2005; Romer, 2004). Numerous scholars believe that drawing on corpus linguistics will have a significant and meaningful impact on language learners' effectiveness in real-world situations. As a result, they recommend the integration of corpus-based resources in language instruction, rather than relying solely on intuition-driven models, which occasionally fail to replicate genuine language usage. One of the primary advantages of corpus data lies in its empirical performance, which enables more naturalistic and objective language analysis (MacEnery & Wilson, 1997). With its emphasis on linguistic

performance rather than competence, corpus linguistics provides language educators with quantitative insights from real language use, with the goal of teaching students how to apply specific language forms in actual contexts.

*Voyant Tools*, as the developers claimed, is a "web-based reading and analysis environment for digital texts." (Sinclair & Rockwell, 2020). This is an open-source toolkit that offers over 20 interactive features for extracting data, analyzing text, and identifying patterns or trends. It can instantly analyze texts across multiple genres, modes, and topics from multiple formats (PDF, Ms Word, HTML, RTF, and Ms Excel). The relevance of the use of *Voyant Tools* in writing classes, therefore, is due to three main reasons. First, *Voyant Tools* help teachers develop materials based on lexical choices, word use patterns, sentence length, and vocabulary density (Wright, 2020). Second, *Voyant Tools* has an interactive nature that supports autonomous learning, fostering students' critical thinking skills through interpretation and visualizations (Wright, 2020). Third, *Voyant Tools* promotes deeper engagement with texts by allowing students to learn and explore thematic trends, thereby enhancing their reading skills (Boulton, 2017).

While several studies have highlighted

the pedagogical benefits of corpus-based tools in language education, very few have explored how Voyant Tools can be applied to the context of IELTS writing. This paper, therefore, will contribute to filling the gap by proposing a structured teaching method that connects Voyant Tools to IELTS essay writing, offering both novelty and practical significance.

Based on the justifications above, the purpose of this paper is to give significant insights into the usefulness of corpus-based Voyant Tools in language instruction, with a particular emphasis on teaching IELTS essay writing. The paper begins with an overview of the literature on corpus linguistics and an introduction to Voyant Tools in general, especially in connection with pedagogical practice and how it can enhance language learning outcomes. Then, it will present Voyant Tools' features and provide step-by-step instructions on how the tools can be utilized effectively for IELTS writing classes. Finally, a conclusion will be reached based on the study, and suggestions for prospective future studies will be provided, with the aim of further exploring the potential of corpus tools in language education.

A corpus is a collection of naturally occurring language evaluated by a computer processing reader and organized according to criteria as instances of language usage (Sinclair, as quoted in Sinclair, 2004). Many scholars propose using corpus-based examples to produce content resources for L2 education (Barbieri & Eckhardt, 2007; Conrad, 1999; Flowerdew, 2015; Harwood, 2005; Römer, 2011; Sealey & Thompson, 2007). Corpus linguistics techniques are a significant assistant for material authors in evaluating the presentation of covered aspects in textbooks. As a result, they will know which traits should be emphasized based on the demands of the learners. It is acceptable to claim that the models and conversations offered in scripted textbooks are unrealistic and unbalanced since they cannot depict natural scenarios that occur regularly in real life (Khojasteh & Shokrpour, 2014). Corpus-based analysis is becoming increasingly important in communicative language instruction because it provides more comprehensive and authentic sources of information on vocabulary, grammatical structures, idiomatic expressions, and discourse competence that better aligns language instruction with learners' real-world communicative needs.

Numerous electronic resources are available to support the use of corpora in

language research and instruction, e.g. the British Academic Spoken English (BASE), the British Academic Written English (BAWE), the International Corpus of Learner English (ICLE), the British National Corpus (BNC), and the Japanese EFL Learner Corpus (JEFL). Each data source is employed in line with the study's goal and different major areas of focus. JEFL, for example, is designed for younger learners and features essays produced by Japanese school children instead of native speakers. Its goal is to highlight lexical and grammatical faults that may be useful for instructors and linguistic scholars. One of the most important elements in corpus linguistics is information on the frequency of occurrence of certain characteristics of language. Frequency is the essential key to patterns of words or phrases in real-world language, assisting in determining what should be included in training materials (Römer, 2004). Analyzing corpora, for example, can reveal how progressive verbs are used in authentic contexts. This enables teachers to prioritize which functions to emphasize in their teaching according to learners' achievement level, using corpora to identify essential vocabulary for generating more modest academic writing through word choice. Corpus-based language education may also be useful in speaking classes, such as when learning colloquial idioms. Teachers can determine which natural phrases to teach students to respond to idioms that are difficult to understand through literal translations.

Prior studies have explored the pedagogical potential of Voyant Tools for language learning. For instance, Buzarna-Tihenea (2020) examined its effectiveness in developing English lexical choice, particularly within the context of English for Economic Department students. Similarly, Wachyudi (2022) demonstrated that the integration of Voyant Tools could significantly enhance vocabulary acquisition in both reading and writing activities. Further confirming these foundations, (Miguel, 2022) has also designed a model on how Voyant Tools can be of use to facilitate students' reflection on their writing. He emphasized how text analysis helps students find lexical density, structural patterns, and repetitive language use in their own works, therefore promoting critical self-assessment and informed revision techniques. Later on, Lisboa and Fromm (2024) created a framework for integrating Voyant Tools into classroom-based research writing, focusing on how digital text analysis can help students find research keywords, thematic patterns, and discourse

structures essential to academic writing standards.

Moreover, Wachyudi (2022) has revealed that students usually have positive perceptions on the use of *Voyant* Tools in the language class. The study claims that students said the tool enabled them to obtain and examine real language samples, therefore increasing their knowledge of contextually suitable frequently used vocabulary. Samples from authentic exposure, where students actively interact with linguistic input to modify and make linguistic decisions, supports vocabulary enrichment as well as learner autonomy. This aligns with the principles of data-driven learning, where learners become active participants in their language development process. As a result, tools like *Voyant* not only improve language awareness for their writing but also promote critical thinking and analytical skills in academic settings.

The IELTS exam has lately gained significant popularity, reflecting a growing number of students aspiring to pursue higher education in English-speaking countries, most notably Australia, the United States, and the United Kingdom, which consistently attract the highest numbers of international students. With the four English key skills being assessed, top-tier institutions typically require an overall band score of at least 6.5, with no individual component falling below 5.0, although specific requirements may vary depending on the institution and field of study. Among these components, writing is often perceived as the most challenging task for applicants to complete, since they consistently fail at this component despite their overall accomplishment. Task 2 accounts for a larger amount of the assessment, since it evaluates the applicants' evaluative thoughts in terms of their ability to provide information and proof. As a result, the scope of this study is limited to how corpus linguistics provides an effective answer for teaching IELTS Task 2 writing.

A corpus-based study conducted by Divsar and Heydari (2017) identified word choice and verb form errors as the most frequent issues in IELTS essay writing among EFL learners. These findings underscore the importance of focusing on lexical selection and grammatical accuracy in IELTS preparation. As a result of this conclusion, I believe there is a necessity to teach IELTS applicants about a certain linguistic feature in some areas. The capacity to develop word choice and verb forms may be honed by providing students with input from real examples such as news, internet

passages, academic journals, magazines, and newspapers. Furthermore, the purpose of writing Task 2 is to assess applicants' prior knowledge and comprehension of certain fields (Moore & Morton, 2005). The above-mentioned materials can be used to provide learners with general knowledge and comprehension. In addition to teaching broad knowledge, such news reports and fiction provide samples of event sequencing, assisting students in narrating their essay arrangement. It is consistent with Conrad's (1999) study, which stated that teachers encourage students to analyse the sorts of connections prompted in academic reports and news so that they understand text organization.

In addition to challenges with word choice and verb forms, corpus-based analyses have identified other linguistic features that IELTS writing instructors can address to enhance learners' writing proficiency. The features include hedges, attitude markers, implications statements, noun signals, and linking devices (Flowerdew, 2015). For example, hedges (e.g. might, possibly) and attitude markers (e.g. unfortunately, surprisingly) are essential for conveying stance and nuance in academic writing. However, students often underuse these devices, which causes a lack of subtlety. Moreover, the organization of essays also significantly influences coherence and readability, making it easier to read and impacting applicants' ability to get high scores. The usage of connecting devices can indicate virtuous coherence since they demonstrate the relationship between concepts within the entire text. As a result, teachers must teach their pupils these linguistic strategies since they are critical components of the IELTS writing exam. The corpus-based method is an excellent source of data since corpora allow for divergences in practical fields (Harwood, 2005).

## Method

This study is a conceptual paper. A conceptual paper, or article, is a work that typically aims at "contributing new perspectives, a leap of imagination, useful theoretical frameworks, or helpful definitions and yielding quote-worthy material." (Reese, 2022). This type of paper has a slight similarity with reviews of literature in terms of that it may begin by summarizing a variety of theoretical foundations. However, a conceptual paper has more of a writer's explicit, personal arguments that eventually lead to promoting new designs or ideas as the final product, grounded on the theory discussed before.

In this study, following a synthesis of

literature on corpus linguistics in EFL teaching, Voyant Tools for writing, and its application in teaching IELTS writing, a proposed implementation model on the use of Voyant Tools is presented. The theoretical contribution of this paper lies in demonstrating how corpus-driven text analysis can be operationalized through Voyant Tools to scaffold IELTS writing instruction. The model links insights from corpus linguistics—such as frequency, collocation, and discourse patterns analysis—to the practical language classroom strategies for developing natural phrase use. To ensure the reliability and validity of the proposed teaching model, the text sources for the analysis sample were selected from widely recognized digital text sources, such as The Guardian, Forbes, EdTech Magazine, and peer-reviewed academic journal articles. The selection of those sources is also due to preserve an academic register of the writing so that any retrieved words, phrases, and expressions reflect the academic tone expected

in IELTS writing.

Regarding the paper structure, Reese (2022) argues that a conceptual article does not have any definitive or universally accepted structure to follow. However, he proposed that it should have at least these important components: (1) Introductory, which can contain general introduction, article purpose, and justification, and (2) Theoretical overview and literature synthesis, which can contain statement of the problem, developing the argument, and discussion-conclusion.

## Findings and Discussion

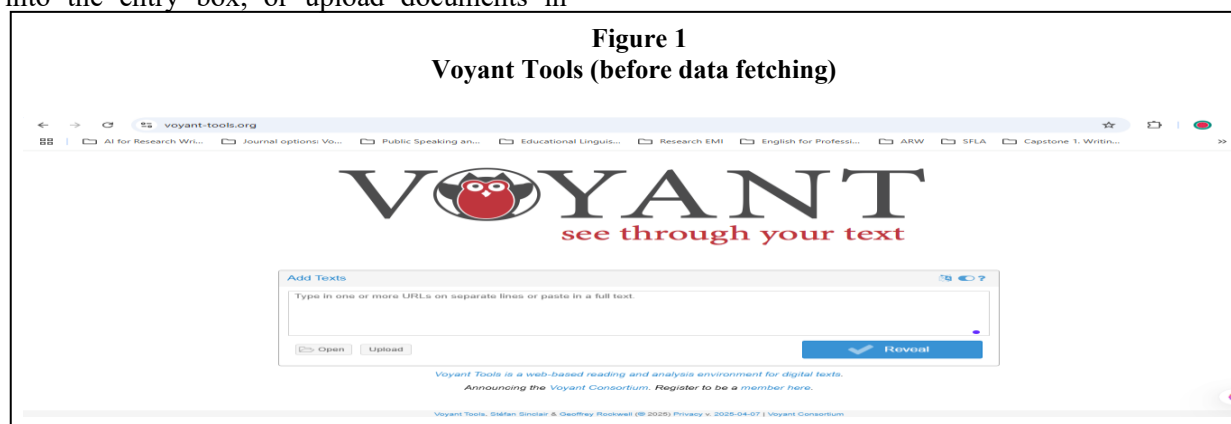
The pedagogical values of each Voyant Tools feature in the IELTS writing instruction are synthesized in the following table, along with some empirical and conceptual studies supporting how corpus-based approaches can enhance academic writing performance in EFL contexts.

**Table 1. Voyant Tools features and its Pedagogical Applications**

Feature	Function	Pedagogical Application in IELTS Writing	Supporting Literature
Word Frequency List	Generates frequency counts	Helps students identify high-frequency academic vocabulary	(Arndt, R., 2022; Lusta, A., Demirel, Ö., & Mohammadzadeh, B., 2023).
Keyword in Context	Shows words in context-based or textual environment	Helps learners observe collocations and natural phrase use for coherence	Hua, Y., Lu, X., & Guo, Q. (2024)
Phrase Length Adjustment	Shows various and multi-word expression	Helps learners recognize lexical and discourse patterns in varied phrase-length	Yunjung, K. (2025).
Context Window	Shows context before and after keywords	Helps learners enhance precise language use from typically occurring expressions	Wang, Q., Anthony, L., & Arshad, N. I. (2023)

This is the interface when users enter Voyant Tools website (<https://voyant-tools.org/>). As presented in the picture below, it asks users to input text into the entry box. The entry box accommodates various methods of text submission: users can enter URLs (each on a separate line) to analyze multiple online sources concurrently, paste plain text directly into the entry box, or upload documents in

formats like Ms Word, PDF, RTF, or HTML. Once the desired texts are entered, clicking the ‘Reveal’ button underneath the entry box will run the corpus analysis. Voyant Tools then processes the input and displays its analytical visualizations immediately after, therefore enabling users to examine patterns and trends of their textual data.



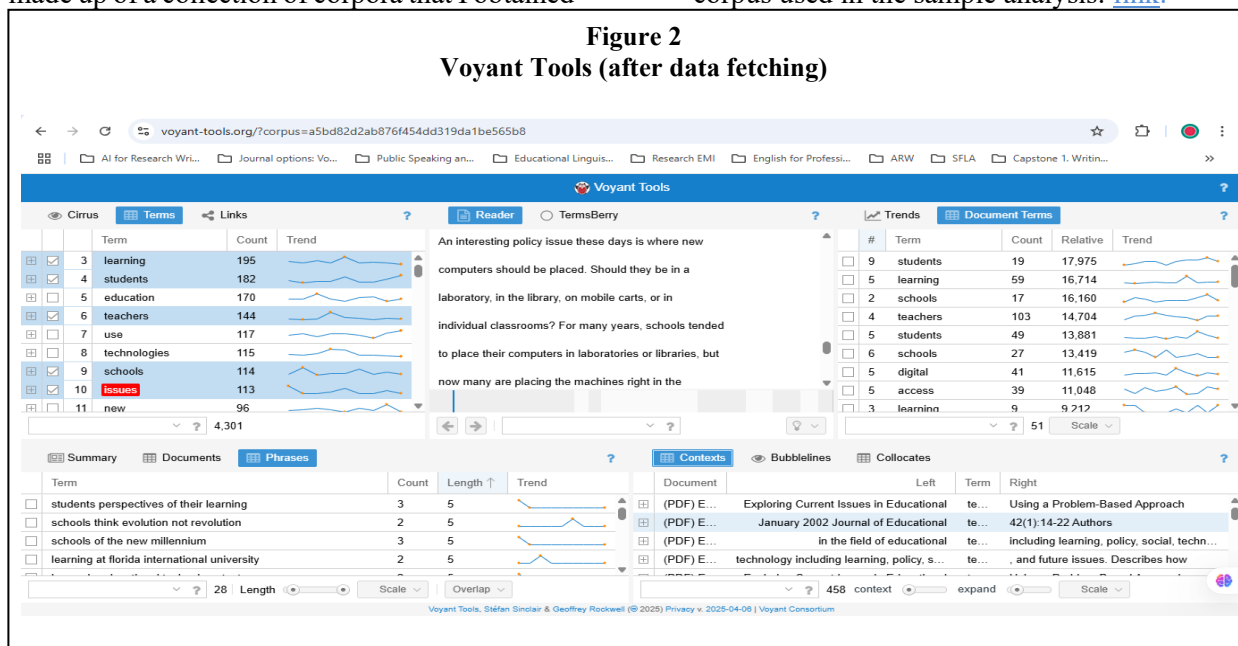
This section aims to demonstrate

Voyant Tools’ potential in helping IELTS

writing instructors with the development of effective teaching materials. The focus will be on Task 2, which requires test-takers to produce a well-organized essay of 250 words in response to a given prompt. For this demonstration, I attempted to identify some lexical terms that may be covered by the subject “issues in educational technology” at the word or phrase level. Rather than merely coming up with random ideas based on personal intuition, I was able to collect a large number of web texts from Google as my core corpus. The document was made up of a collection of corpora that I obtained

by selecting news or articles from the top ten links that appeared when I searched for “issues in educational technology” as keywords. The excerpts obtained are mainly collected from notable news agencies and educational institutions' official websites, and they were written within the previous five years to ensure their timeliness. After retrieving the document, Voyant Tools will evaluate it and offer useful information on the frequency of terms and phrases. For this demonstration, access the following link for the compilation of the media corpus used in the sample analysis: [link](#).

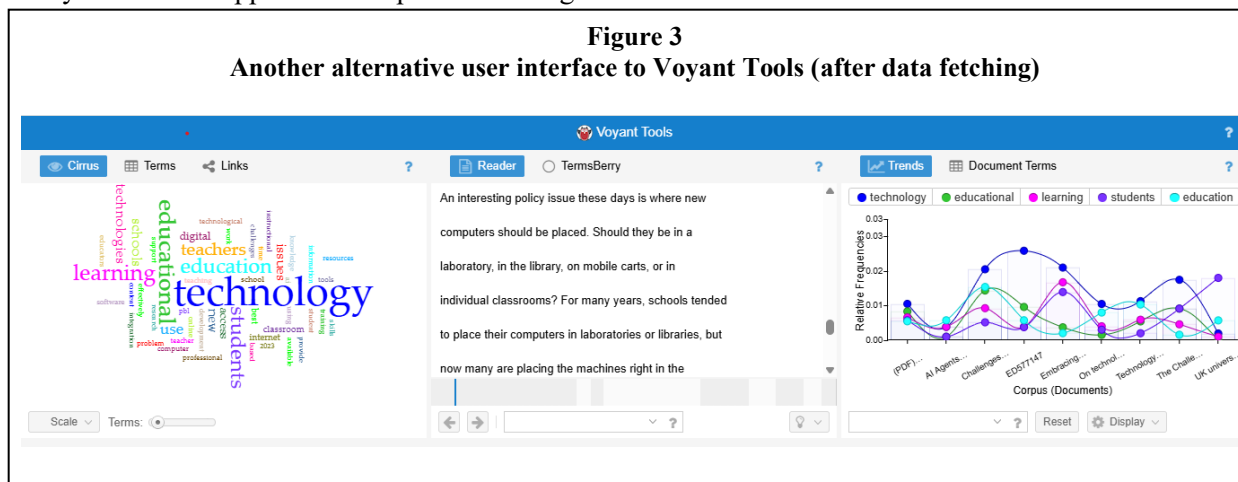
**Figure 2**  
**Voyant Tools (after data fetching)**



As illustrated in Figure 2, a selection of high-frequency words was made, irrespective of their suffix variations. These words are systematically arranged based on their frequency of occurrence within the compiled dataset. This structured presentation enables educators or IELTS writing instructors to identify and prioritize the most prevalent vocabulary items, or words which are most likely needed that appear at the top list according

to the counts: *learning* (195), *students* (182), *education* (170), *teachers* (144), *use* (117), *technologies* (115), *schools* (114), *issues* (113), *new* (96), etc. Using these authentic corpus data can facilitate educators to align the learners' needs to targeted instruction. It can lead to the focused construction of verb phrases, noun phrases, and adjective phrases that frequently occur in a specific theme. This approach enables learners to observe and internalize common

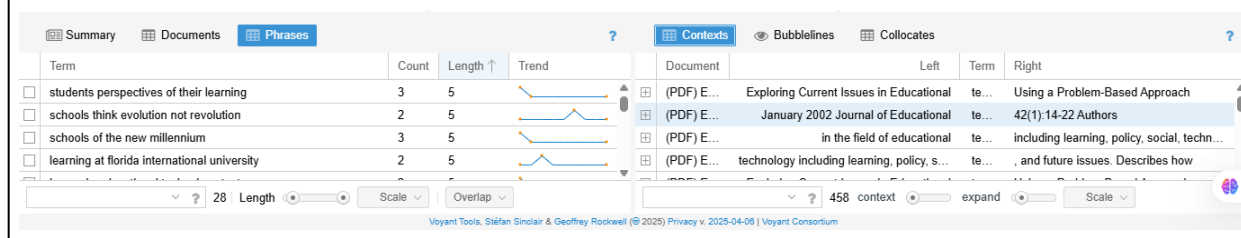
**Figure 3**  
**Another alternative user interface to Voyant Tools (after data fetching)**



collocational patterns, too. This specific method can eventually result in skill improvement to produce natural and contextually appropriate language. On the bottom left section of the Voyant Tools interface as presented in Figure 4, users will find an option to adjust the phrase

located at the bottom right displays the surrounding words that appear both before and after a selected search vocabulary. For instance, when analyzing the word ‘*technology*’, the tool reveals phrases that come immediately before the word (on the left side) and those that follow

**Figure 4**  
A column that displays the modifiable phrase length after data fetching

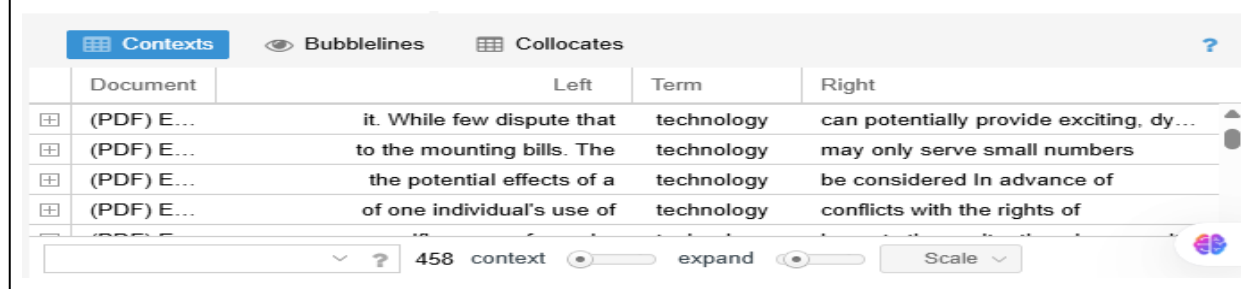


length they wish to analyze within a given text. In this particular case, I set the phrase length to a maximum of five words in order to help students identify and examine useful multi-word expressions that frequently appear in academic texts. This instructional method enables learners to observe how certain words function together within extended phrases, which provides insight into natural language use and helps them recognize patterns of academic discourse. This approach is particularly beneficial for developing writing skills in context-specific academic topics, where phrase construction and coherence are crucial. For example, frequently occurring phrases such as ‘*students' perspective of their learning*’, ‘*schools think evolution not revolution*’, ‘*schools of the new millennium*’, or ‘*learning at Florida International University*’ could serve as rich discussion material when writing essays about educational inequality.

Additionally, the ‘Contexts’ section

the word (on the right side). This feature offers valuable insight into common usage patterns and linguistic environments in which the word ‘*technology*’ typically appears. This allows instructors to guide students toward using more precise and thematically relevant languages, such as narrowing down the discussion of the broader term ‘*technology*’ to more specific academic themes like ‘*educational technology*’ or exploring related subtopics. In addition, this feature also helps students become familiar with natural phrasing and collocations surrounding it, such as ‘*...can potentially provide exciting...*’, ‘*...may only serve small numbers...*’, ‘*...be considered in advance of...*’, ‘*...conflicts with the rights of...*’ or any other phrases that are embedded within meaningful contexts. By observing these patterns, learners are exposed to natural English collocations, which can significantly help produce more contextually appropriate writing.

**Figure 5**  
A column that displays the context surrounding a single word after data fetching



There are various benefits to utilizing Voyant Tools to do corpus analysis while developing instructional materials for academic writing. First, it allows teachers to focus on improving topic-based vocabulary items. Second, it assists teachers in developing some possibilities of word phrases that might be used around a given terminology. Third, the corpora were derived from recent

significant publications, resulting in more current writing outputs. Alternatively, a collection of corpora based on scientific journal articles would be an excellent way to meet the demands of more advanced pupils. In addition to the benefits, this tool consumes the limits that restrict the application. It is solely meant to read documents; users must contribute their own corpus data for



analysis by the gadget. As a result, users cannot directly access existing corpora given by corpus contributors, such as British Academic Spoken English (BASE), the British Academic Written English (BAWE), the International Corpus of Learner English (ICLE), the British National Corpus (BNC), and the Japanese EFL Learner Corpus (JEFLC).

The features offered in Voyant Tools support what Lawson (2001) claims to be the four language components that corpus linguistics covers in order to engage learners' critical insights. These components include: (1) data on the frequency of linguistic characteristics in naturally occurring occurrences, (2) data on register variation, (3) data on the breadth of specific features and their reliability, and (4) data on the discourse qualities of specific linguistic elements. By providing functionalities such as word frequency counts, collocation analysis, and contextual exploration, Voyant Tools enables EFL learners to engage directly with authentic language data. It means that learners will reach a deeper understanding of their language use. In contrast, textbook examples are usually manufactured and idealized. This misalignment becomes problematic when learners are unable to apply their knowledge effectively in real-world situations due to broad language misrepresentations (Khojasteh & Shokrpour, 2014). Therefore, integrating corpus-based tools like Voyant Tools into EFL writing instruction can bridge the gap between theoretical knowledge and practical application.

With many benefits that educators get from using Voyant Tools in analyzing texts and generating patterns for academic purposes, there are also drawbacks. First, in terms of practicality, users cannot modify inputs once the platform finishes reading the data, and the web page is closed (Alhudithi, 2021). As a consequence, users must check carefully that their entries have been correct, and no necessary data is left out. Second, in terms of data protection, Voyant Tools cannot provide protection towards inputted data; therefore, users should be cautious not to provide sensitive personal information into their system to avoid it being recorded and unethically used.

## Conclusion

This paper has raised valid concerns about the notion of applying corpus linguistics in language education, concentrating on how reliable it is to employ corpora in producing teaching materials for IELTS essays. The study leads to three broad conclusions. First, corpus linguistics is a valuable approach for developing language resources for classroom use. Second,

there are significant advantages to using corpora as authentic discourse representations; the supplied example will be more natural because it is based on existing emergent conversation. This will allow learners to apply their knowledge in real-world settings. Third, Voyant Tools serves as an accessible platform for language instructors. Extracting and visualizing frequently used lexical items in available academic texts it enables instructors to identify which vocabulary and phrases are essential for mastering IELTS Task 2 writing. This approach supports more targeted instruction by highlighting specific linguistic features that learners may struggle with.

However, since this paper is limited to a conceptual model and the writing section of Task 2, further research is recommended to be conducted to 1) empirically test this approach and 2) explore how similar corpus-based tools can be applied to other exam components, e.g. the speaking task, where lexical demands may significantly differ. By doing so, this study has broader significance in advancing future corpus-based pedagogy that connects authentic language data with practical classroom applications.

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