

Empowering EAL students through DDL and AI: exploring self- correction in writing errors

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EAL: Grammar in writing

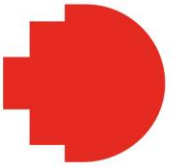


What are common grammar errors seen in EAL student writing (any level)?

How do EAL teachers identify and correct grammar errors in writing?

Have you used concordancers or generative AI for error correction?

Outline



1. Corpus-based data-driven learning - DDL (Johns, 1990)

- Using corpora data for language learning (Johns, 1990) where every student [is] a “Sherlock Holmes” (Johns, 1997, p.101)

2. Concordancers for error correction

- A study of 10 Upper Intermediate Brazilian students and their use of prepositions in writing

3. Generative AI: ChatGPT

- How well does it work for EAL error correction?

12 *From printout to handout: Grammar and vocabulary teaching in the context of Data-driven Learning*

Tim Johns

In this chapter I shall describe and illustrate on-going work that attempts to synthesise two approaches to language teaching – one basically traditional, and the other more innovative. The setting for the work is the in-session programme of classes offered by the English for Overseas Students Unit at the University of Birmingham to overseas postgraduate students following courses and undertaking research in a wide range of subjects, from Production Engineering to Special Education and from Accountancy to Theology. Students who need help and encouragement can choose from a programme of classes, some of which are defined in terms of language *form* (e.g., Remedial Grammar, Pronunciation) and others in terms of language *function* (e.g., Academic Writing, Social Interaction). The form/function distinction is, however, not adhered to rigidly, and in all classes it is the form/function relationship that is the ultimate object of study in terms of the rules that determine the *interpretation* of form and those that govern the *realisation* of function.

Two examples may help to demonstrate the implications of Figure 1:

1. In the functionally defined academic writing class we emphasise the importance of indicating to the reader the extent to which the writer allies himself/herself with previous writers on the same topic, and in that context we look at the formal devices (e.g., syntactic choice of tense and lexical choice of reporting verb) by which that functional choice is realised.

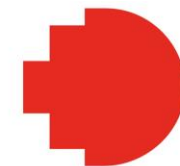
2. In the formally defined remedial grammar course, the passive recurs as a formal structure at various points in the materials dealing with transitivity and complementation, but the work does not end with the manipulation of form (‘Change these sentences into the passive’): Attention is paid also to the choice between active and passive, a choice which involves decisions of ‘appropriacy’ rather than ‘correctness’ (‘Decide in these contexts whether the marked sentences should be active or passive’).

This is a revised version of a paper which first appeared under the same title in the *CALLAustria Newsletter* (July 1990, pp. 14–34), and was reprinted in the *University of Birmingham English Language Research Journal 4* (Johns 1991b). I am very grateful to Julian Edge and Eugene Winter for their detailed comments on that earlier version: the remaining flaws and follies remain my responsibility.

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Johns, T. (1994). From printout to handout: Grammar and vocabulary teaching in the context of data-driven learning. In T. Odlin (Ed.), *Perspectives on pedagogical grammar* (pp.293–313). Cambridge: Cambridge University Press.



Web Concordance English v.9

» With sub-sort on *asterisked* corpora

French German Spanish English

Base Speed \cong 1/2 second per million words of corpus
Add more for associated words, family search, sub-corpus
count/sort, wildcard...

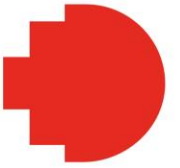
Keyword(s): equals Max Chars) In corpus: [« Corpus Info](#)

OPTION : With associated word(s) within words to side

and NONE of these words anywhere in the line

<https://www.lex Tutor.ca/conc/eng/>

Lextutor



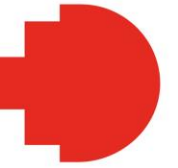
4 per million (hits/corp size×1,000,000)

tious hepatitis", he shouted heartily. She took a GOOD LOOK at herself in the mirror before she turn
is horse forward into the light, and Wilson had a GOOD LOOK at him. He was tall and dark-skinned, a
urn away from my writing in the hope of getting a GOOD LOOK at them but I never quite succeeded. A g
s"? "No, I never did see his face. I didn't get a GOOD LOOK at him at all, his back was to me, and I
oubtfully) Well&h... (Jocularly) Well, I'd have a GOOD LOOK at your coins for a start! GUIIL: (Retiri
rising behind them, Mr. Mendez said to me, "Take a GOOD LOOK at Russell. You will never see another o
ably at this period that Littlepage got his first GOOD LOOK at the ordinary Russian soldier. These i

lxtutor.ca/conc/eng/ | Input 'good look' | Searched Brown_BNC Writ. (2+m)

"facilitate[es] the study or the immediate context of the keyword and allowing patterns to become clearly visible"
(O'Sullivan & Chambers, 2006, p.50)

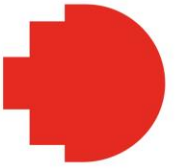
Research tool / reference tool
(Yoon, 2011)



Literature

- Learners' use of corpus consultation (Stevens, 1991)
- The use of corpora in learners' **written redrafts** (Gilmore, 2009)
- The use of **lexis** in writing (Wu, Witten & Franken, 2010)
- Grammatical and **lexico-grammatical features** (Boulton, 2009; Granath, 2009)
- The efficacy of using corpora and concordances to **correct learners' own grammar errors** (Gaskell & Cobb, 2004; Yoon & Jo 2014; Quinn, 2015)
- 'Great potential' of ChatGPT's text generation abilities in completing writing tasks (Stokel-Walker, 2022)

Literature: corpus-based DDL



Article Counts by Publication Date

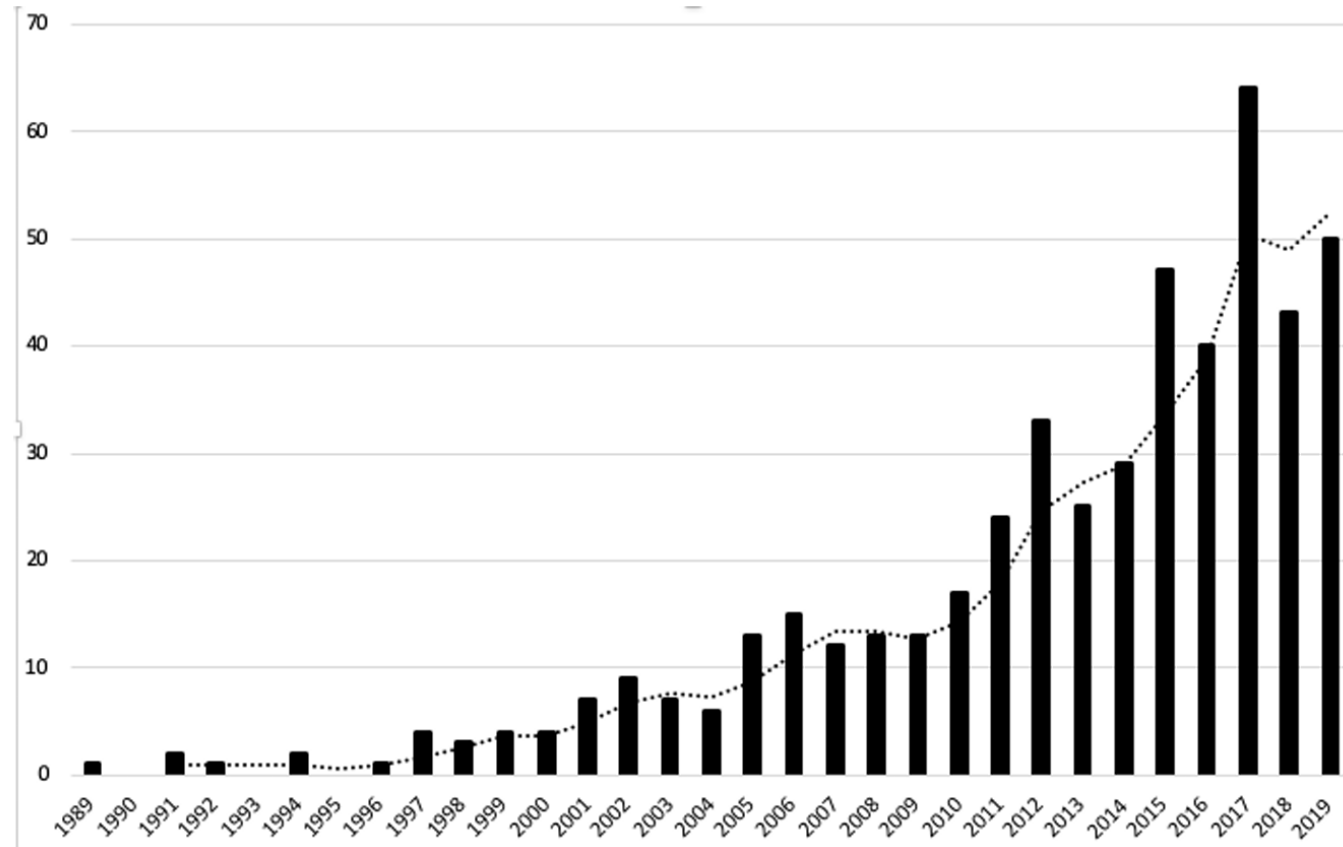
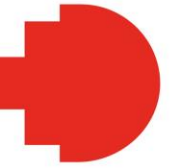


Figure 1: Article counts by publication date (Boulton & Vyatkina, 2021)

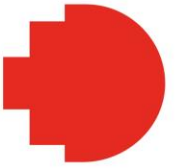


The 2015 study

- 10 Brazilian Upper Intermediate EAP learners (pathway to MA Engineering / Medicine)
- End of Course exam: 250 word discursive or argumentative essay
- Essay topics: health or tourism
- 24 practice essays collected
- Underlined 68 preposition errors
- Taught students how to use Lextutor
- Students self-corrected their errors

“... having to self-correct makes them actually do something with the feedback rather than just receive it; it engages them cognitively in the process” (O’Sullivan & Chambers, 2006, p.52).

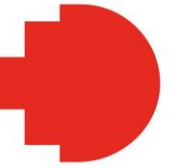
Why prepositions?



Prepositions identified as a target area due to multiple errors

- 'based in' rather than 'based on'
- 'depends of' rather than 'depends on'
- important to / important for / importance of
- at work / in their work
- benefit to / benefit from
- confidence to / confidence in





Results

- Each essay had between 1 and 5 preposition errors
- 68 preposition errors over 24 essays
- A total of 59 preposition errors were correctly changed
- 87% success rate

Student responses

How useful do you think using corpora is for correcting grammar errors?

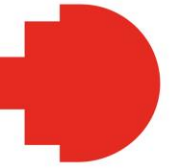
3 students – somewhat useful; 7 students – very useful

“I don’t need to spend much time looking for the correct way”

“people can learn with examples”

“don’t know the reason why some prepositions are wrong”

“people don’t know about the real grammar rules”

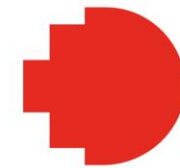


The 2023 'study'

- Same 68 preposition errors inputted to ChatGPT-3.5
- Prompt: *'Do grammatical error correction on all the following sentence I type in the conversation'* (Wu et.al, 2023)

Results

- Perfect grammatical accuracy
- In one case, ChatGPT-3.5 changed intended meaning (stating an untruth)
- It sometimes offered better word choices
- It rephrased awkward expressions



The 2023 'study': examples



meeting new people on their work or study field



Meeting new people in their work or study field.



if some treatment works in someone



If a treatment works in someone.



the reduction on the risk of side-effects



The reduction in the risk of side effects.



people prefer treat their illness by alternative medicine
instead modern medicine



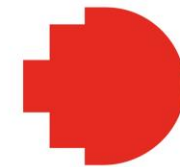
People prefer to treat their illnesses with alternative medicine
instead of modern medicine.



they are basing their opinion in three points



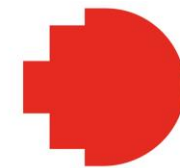
They are basing their opinion on three points.



Observations: Overcorrecting

Original student error	Student correction (Lextutor)	ChatGPT
<p>Diseases mostly related <u>with</u> our respiratory system...</p> <ul style="list-style-type: none">• <i>Student has used a reduced relative clause correctly</i>	<p>Diseases mostly related to our respiratory system...</p> <ul style="list-style-type: none">• <i>Student has correctly changed with → to</i>	<p>Diseases are mostly related to our respiratory system.</p> <ul style="list-style-type: none">• <i>Chat GPT has correctly changed with → to</i>• <i>Added 'are'</i>• <i>Changed the meaning</i>• <i>Reported an untruth</i>

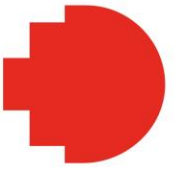




Observations: Changed vocabulary

Original student error	Student correction (Lextutor)	ChatGPT
<p>This medicine is more worried about at the whole person.</p> <ul style="list-style-type: none">• <i>Student used two prepositions</i>	<p>This medicine is more worried about the whole person.</p> <ul style="list-style-type: none">• <i>Student correctly omitted at</i>	<p>This medicine is more concerned with the whole person.</p> <ul style="list-style-type: none">• <i>changed worried about to concerned with</i>

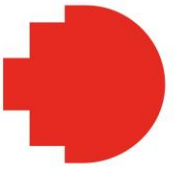





Observations: Rephrasing

Original student error	Student correction (Lextutor)	ChatGPT
<p>...provide immunity <u>without</u> <u>of</u> medicine help</p> <ul style="list-style-type: none">• <i>Student has used two prepositions</i>	<p>...provide immunity without medicine help</p> <ul style="list-style-type: none">• <i>Student has correctly omitted of</i>	<p>...provide immunity without the help of medicine</p> <ul style="list-style-type: none">• <i>Chat GPT has rephrased the sentence correctly</i>

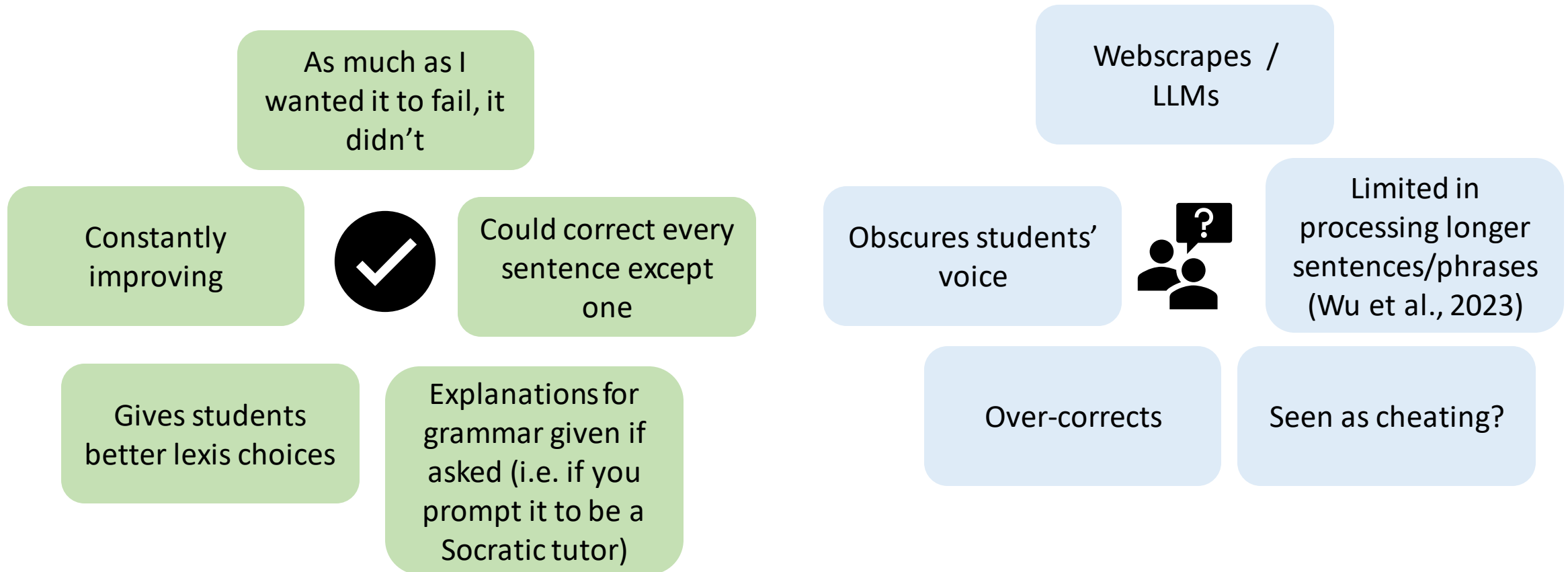
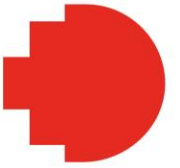




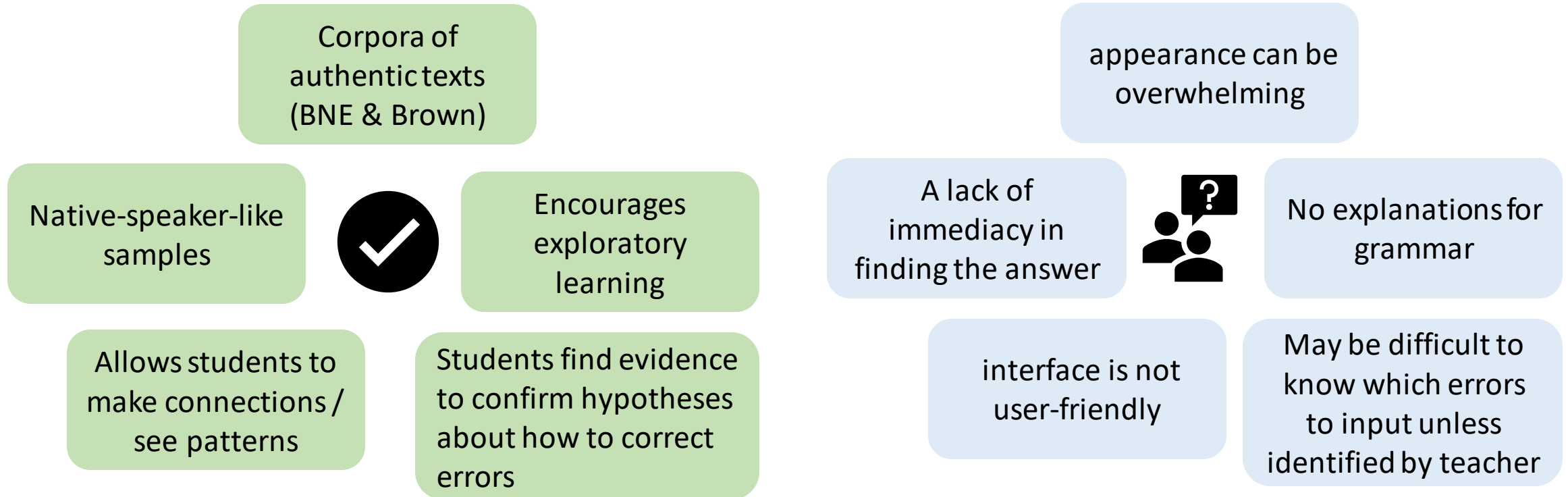
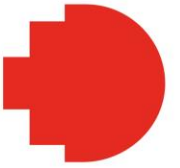
Observations: Cause and effect language

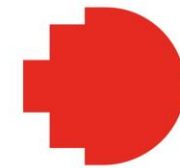
Original student error	Student correction (Lextutor)	ChatGPT
<p>... without the risk to cause some side-effects</p> <ul style="list-style-type: none">• Student has misused 'to cause'• Student has correctly tried to apply to + infinitive• Student may have inputted 'to cause' instead of 'risk to'	<p>...without the risk to caused some side effects</p> <ul style="list-style-type: none">• Student could not correct error satisfactorily• Student possibly guessed answer	<p>Without the risk of causing any side effects</p> <ul style="list-style-type: none">• Chat GPT correctly changed of + causing• Also changed some → any 

Summary – ChatGPT-3.5 for error correction



Summary – Lextutor for error correction





Finally...



You are an English grammatical error correction tool that can identify and correct grammatical errors in a text. Please identify and correct any grammatical errors in the following sentence while keeping the original sentence structure unchanged as much as possible



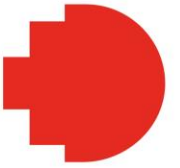
Of all the cars in the parking lot, hers is the most expensive one.



What are the benefits and limitations of using ChatGPT-3.5 for EAL error correction in writing?

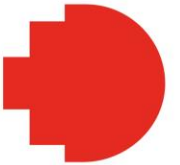


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