Efficacy of concordance on the acquisition of polysemous words

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ABSTRACT

Acquisition of polysemous words is a prevalent and difficult process. This study aims to investigate the effectiveness of concordance on the acquisition of polysemous words, compared with the traditional teaching method. Participants were 127 Chinese EFL learners in senior high school. They were randomly assigned into Experimental Group (EG) to be treated with paper-based corpus and Comparison Group (CG) to be instructed with the traditional method. The test instrument and teaching material was developed based on Corpus Concordance English. Acceptability judgement was used to test learners' performance. Data was analyzed according to independent- and paired- sample t-test via SPSS (version 20.0). Results from independent sample t-test of posttest scores of both groups indicated that concordance and traditional teaching method was equally effective in terms of polysemous words learning. However, paired sample t-test of pre- and post-test scores of each group suggested when compared with the traditional method, concordance is more efficient to fulfil greater enhancement. Therefore, this study provides empirical evidence of the positive impact of concordance on the acquisition of polysemous words. Limitations and implications were discussed.

Introduction

Concordancer refers to a program that is beneficial for learners to observe and explore the different uses of a specific word according to multiple authentic contexts (Yavuz, 2014). It plays a tremendous significance in the field of corpus linguistics as well as second language learning. First of all, concordancer is widely used for genre analysis in literature or academic research, including the rhetorical structures and linguistic features of different genres (Zhang

et al., 2022; Deng & Liu, 2022), lexical bundles (Chen Yu & Paul, 2021; Ren, 2021) and collocation (Li, 2021). On top of that, researchers also capture the instructional value of concordancers for second language teaching and learning. In this vein, some studies have performed critical analysis on the strengths and weaknesses of corpus-aided language learning or engage in feasible tips or guidance on the employment of concordance in the aspect of language teaching (Huang, 2011; Yavuz, 2014). Other researchers have investigated the effectiveness of concordance on various skills of language learning, such as vocabulary (Li, 2015; Yılmaz & Soruç, 2015), academic words (Kaur & Hegelheimer, 2005; Lee et al., 2017), academic lecture comprehension (Zare & Aqajani Delavar, 2022), writing (Philip & Mark, 2022) and reading (Gablasova & Brezina, 2021). However, a dearth of studies has specifically focused on the influence of concordancer on the acquisition of polysemous words.

A polysemous word, as a spiny and intractable issue in language learning, acts as a troublemaker, bringing about numerous difficulty for English as Foreign Language (ELF) learners. Even advanced learners cannot flee from this complicated phenomenon indicated by a poor awareness of polysemy and unsatisfied knowledge of extended meanings of polysemous words (Alnamer, 2017). This difficulty, to a large degree, may be contributed to three factors: frequency of the word, dominance and the imageability of the individual meanings of the word (Sophie et al., 2022). In addition, when it comes to the diverse approaches to polysemous word teaching, a wealth of researchers resorts to cognitive methods, such as metaphor (Lu & Sun, 2017), metonymy (Sun & Zhao, 2015), image-schema (Nihal, 2020), with their participants mainly within the closure of college-level learners. Although Nihal's study was involved in data-driven learning, the study merely concentrated on vertical preposition. In other words, the effect of concordance on polysemous words learning still remains to be seen by encompassing wider categories of words and participants.

This paper, therefore, intends to examine the effectiveness of concordance on polysemous words teaching, and learning, with the purpose of shedding enlightenment on the matter of polysemous words instruction and acquisition for senior high school students and teachers.

Literature Review
Empirical Studies of Polysemy Instruction and Acquisition
Polysemy is a perplexed and complicated issue both in language teaching and learning. Many researchers/teachers have tried to dig out effective channels to felicitate the learning process via multiple trials. Lu and Sun (2017) found that cognitive linguistic method (metaphor) is of numerous benefit to the understanding of English polysemous phrasal verbs and possess the power to shorten learners' processing time. Whereas, Sun (2015) explored the efficacy of metonymy in polysemy learning. In research conducted by Liu et al. (2019), they spotted the equal positive effect of semantic-field theory and grammar translation method on polysemy acquisition, but participants in the experimental group (instructed by semantic-field theory) yielded greater progress and this approach contributes to long-term memory. Moreover, Mitsugi (2017) reported that participants in image-schema and core-meaning-based instruction (ISCBI) group significantly outperformed their counterparts in the translation-based instruction group and control group. Noticeably, students perceived the advantages and disadvantages of both methods and justified the necessity to utilize them separately contingent on concrete situations in the questionnaire instrument. Furthermore, Nihal (2020) proposed Principled Polysemy and Data-Driven Learning was significantly effective in the acquisition of vertical preposition (over/above, under/below) and the impact tended to be durable after two weeks of

the treatment. Conclusively, it is feasible to facilitate polysemy learning according to varieties of methods that have been proven efficient. However, many researchers mainly concentrate on cognitive approaches in the aspect of polysemous words learning, leaving a large room for investigation of the influence of concordance on the acquisition of polysemy. Though Nihal (2020) conducted a research from this perspective, the focusing point is merely vertical preposition (over/above, under/below), without consideration of content words.

Empirical Studies of Concordance in Vocabulary Acquisition
According to a myriad of studies, concordance appears to be a crucial tool when it comes to vocabulary teaching and learning. Yılmaz and Soruç (2015) investigated the effect of concordance on teaching and learning vocabulary in an EFL setting (Respondents were forty Turkish EFL students, aged from 14 to 16). As a result, participants in the concordance group where learners acquired vocabulary by means of electronic concordance program (data-driven learning) significantly outperformed their counterparts involved in traditional teaching in the control group via independent t-test analysis, which indicated that concordance did impose positive impact on vocabulary instruction and acquisition. What's more, the subsequent semi-structured interview further confirmed this result according to 5 students randomly selected from the participants. Additionally, Kaur and Hegelheimer (2005) explored the influence of a concordance program on the usage of academic words with different vocabulary task activities (a cloze activity, and a sentence-building task) and a writing task respectively with 18 international undergraduates as the participants. Findings suggested that participants in the experimental group (concordance program) performed better than those in control group (traditional method) both in the vocabulary task and the writing task, although they failed to yield statistically significant differences. Noticeably, students in the experimental group gained significant advancement in terms of the accuracy rate of academic vocabulary. It seems that the positive effect of concordance is detected on the acquisition of academic vocabulary.

Besides, Lee et al. (2017), also examined the impact of concordance lines on vocabulary learning with three conditions (two groups exposed to concordance lines and one control group) via meaning-recall vocabulary test. One of the concordance group was only shown concordance lines of a target lexical item and allowed to make inferences based on sentence reading, while the other was offered the additional definition of the target word after students' inference so that they have the chance to identify whether the product they generated is reliable or not. Results unveiled students in the second condition gained more than those in the first one and control group. Therefore, this study shed light on the usage of concordance that an additional definition of target words after reference to concordance lines is more conducive to vocabulary acquisition. In a word, agreement can be achieved that concordance turns out to be an effective tool regarding vocabulary instruction and acquisition. Unfortunately, according to my knowledge, few study has disclosed the relationship between concordance and polysemous words learning.

In sum, the positive effect of concordance on vocabulary acquisition has been observed. However, the scope of vocabulary fails to creep in polysemous words. That is, there is a lack of interaction between concordance and polysemous word learning. Therefore, the present study aims to explore the impact of concordance on the acquisition of polysemous words.

Method
The present study is quantitative research. It aims to examine the effectiveness of concordance on the acquisition of polysemous words. This study was designed with the guidance of the

following research question: Is concordance an effective way to learn polysemous words, compared with the traditional teaching method?

Participants

With convenience sample as the way to select target respondents, participants in the study were 127 eleventh graders (aged from 16-17). They came from two intact classes, 60 seated in the experimental group where learners were exposed to polysemous words via the tool of concordance and 67 in the comparison group where students learned polysemous words with the traditional teaching method. All of them were English learners in the Chinese senior high school context, engaged in soft science, characterized by politics, history and geography plus Chinese, math and English.

The Concordance Program

The concordance program utilized in the present study was Corpus Concordance English accessible online: https://lextutor.ca/conc/eng/. Keywords were modified in the "equals" way that means an equal number of words were demonstrated on the left and right side of the target words. The built-in corpus chosen in this program was BNC SP-v-WR* (2m). At first, the target words were input in the given box, click the "get concordance" button, the hits' number (see Table 1) and a pile of concordance lines would be presented (see Screenshot 1). Meanwhile, confirmation on the polysemous nature (multiple senses under one entry) of the target words could be gained by indexing the handy electronic dictionary inserted in this program (see Screenshot 2). During this process, the various senses of the target words were copied in an electronic "word file" for translation coding. Afterwards, the hits' number and fifteen or so concordances with different meanings of the target word from the enormous lines were noted down in the paper as sources of teaching materials and test contents. Hereafter, I named it the source file (SF). With all of the electronic (concordance lines for experimental group, the Chinese definition of polysemous words, and test sheets) version of materials needed completed, they underwent re-examination, re-evaluation and got printed for intended employment.

Screenshot 1
Concordance Lines of the Sample Word "Smart"

Screenshot 2
Electronic Dictionary Embedded in the Concordancer

Home > Concordancers > English Input > Output   (« Back keeps original settings)   Copiable extract-link to this data >> here
Concordance for **smart** in BNC_speak_write   ▮ Dictionary ▮ Eng_Eng ⌄ ▮ Speak keyword ▮ Eng-US ⌄ ▮

Extract checked **!** items: ☑All | Ø | any10 | 20 | 30 | 50 | Go >

MODIFY: equals ⌄ : smart   BNC Sp_v_Wr* (2m) ⌄ sort ⌄ key ⌄ +
25,000 ⌄ lines @ 100 ⌄ wide Go
44 hits   22 per million(hits/corpus size × 1,000,000)

BY MEMBER OR STEM   smart=44

Click any **KEYWORD** for more context
001.☐ give the dog . I'll do it now. Who's that being a SMART ... acking me! Shu
[BNC_speak]
002.☐ somebody'll be doing it up themselves. It'll be a SMART ... h innit? Er no
[BNC_speak]
003.☐ sts and beginners alike. The sets are supplied in SMART ... th a variety o
[BNC_write]
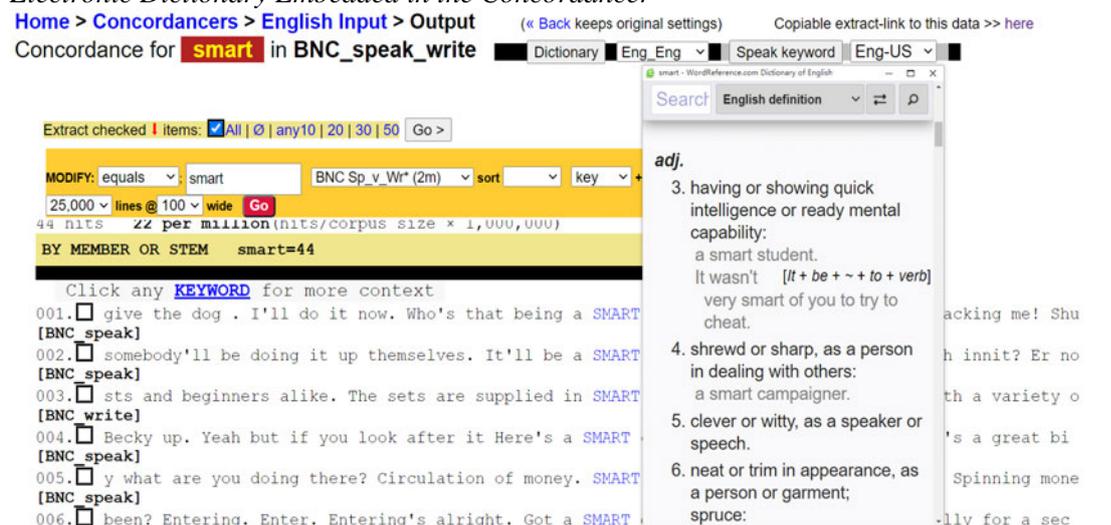004.☐ Becky up. Yeah but if you look after it Here's a SMART ... 's a great bi
[BNC_speak]
005.☐ y what are you doing there? Circulation of money. SMART ... Spinning mone
[BNC_speak]
006.☐ been? Entering. Enter. Entering's alright. Got a SMART ... lly for a sec

smart - WordReference.com Dictionary of English
Search English definition ⌄ ⇄ ρ

adj.
3. having or showing quick intelligence or ready mental capability:
   a smart student.
   It wasn't   [It + be + ~ + to + verb]
   very smart of you to try to cheat.
4. shrewd or sharp, as a person in dealing with others:
   a smart campaigner.
5. clever or witty, as a speaker or speech.
6. neat or trim in appearance, as a person or garment; spruce:

Table 1
Hits Number of the Target Words

Target word	Hits number	Target word	Hits number
get	4005	figure	260
head	520	break	176
state	505	develop	113
run	434	smart	44
present	369	promote	40

Materials

Ten target words of multiple senses (at least two different meanings) were selected and predetermined. Five of them were optioned from the Academic Vocabulary List in the Corpus of Contemporary American English (CCAE) available on the Internet: Corpus of Contemporary American English (COCA) (english-corpora.org) and five decided by the teacher researcher and her colleague who embraced a 10-year teaching experience based on their observation and evaluation of ordinary teaching.

Boulton (2010) argued that paper-based materials originated from corpora can be regarded as a feasible access to corpus instead of directly using corpus via a computer (cited in Huang, 2011). In this study, therefore, paper-based fliers of various concordances of the target lexis acted as learning materials. Six concordances (more than items for test) were provided for each target word in order to expose learners to ample receptive knowledge by enlarging the quantity of input. Furthermore, concordance phrases in the learning fliers were slightly different from those in the test sheet aimed to minimize exercise effect. Built on SF (various concordances of each word) and multiple definitions on the affiliated electronic dictionary in the concordance program --- Corpus Concordance English, six concordance phrases were derived or designed as the paper-based corpus used by the experimental group. Correspondingly, the Chinese meanings of these target words were also discussed and developed into teaching materials for comparison group with paper as carriers. With concordance lines and the-above-mentioned dictionary as vital reference tools, Chinese equivalents closest to the meanings conveyed in the paper-based corpus were offered and sufficient information (corresponding Chinese meaning) was embedded in the list of Chinese equivalents to support learners' interpretation. The list of concordance lines or Chinese equivalent meanings of the target words were ordered from higher frequency to lower ones, namely, according to the hits number of each target word in

the concordance program with BNC SP-v-WR* (2m) (see Appendix). After the electronic version of the materials designed for EG and CG examined and confirmed, they were printed for classroom teaching and learning.

The Instrument

Two forms of phrases Acceptability Judgement (e.g. Meral, 2018; Wang & Lee, 1999) was employed in the study to assess learners' improvement in polysemous words learning. The test sheet consisted of 40 concordance phrases of the ten target words underlined in each statement. Four phrases were illustrated per target word, with three acceptable (extracted from the SF) and one unacceptable coined by the teacher researcher and her knowledgeable colleague built on synonyms or Chinese speaking patterns. For example, the expression "a smart (intelligent is more appropriate) professor" is synonym-oriented and the pattern "the head goes hot" is literally Chinese-directed. The selection process of target phrases was quite akin to the paper-based corpus for experimental group, namely, derived from the SF. For the pretest, words were listed in line with the high-low proficiency arrangement; whereas both the overall and individual content organization of the target words in the posttest was reordered to minimize test effect. What's more, instructions were captioned on the top of the test sheet that if the following statement is acceptable, please signify A (the Capital letter of acceptable); if unacceptable, please note U (the first letter of unacceptable).

Procedure

This study went through a classical pretest, treatment and posttest procedure. The following part delineated the whole process in detail. A pretest was conducted at the outset of research. First of all, examples and directions were elucidated in written as well as verbal form. Then, test sheets were distributed and students were required to complete the test independently without discussion or reference. There was no time limits so that students were able to answer questions according to their own pace. To be general, students handed in the answer sheets within 40 minutes.

When the treatment session came to the stage, predetermined materials for two groups were distributed and learned. Totally students in EG group merely met once, that is, a 90-minute session with a 10-minute break. As for EG, participants were told to find out the different meanings of the target words in different contexts through retrieval of previous knowledge or reference to dictionary within 40 minutes. This operation was adopted with the guidance of Yavuz (2014) and Huang (2011). They put forward that concordance yields benefits for autonomous learning. Following this procedure, the teacher conducted a mini-lecture to have students get their answers confirmed. Hence, all the meanings of the items listed in the fliers were demonstrated by the instructor orally and students were directed to take notes in line with the teacher's instruction within 30 minutes. In this way, students still had a 10-minute review time to reflect on the lesson. At the end of this session, learning materials were collected. On the contrary, students in CG merely received the fliers developed for them, had a preview in one evening class and ran rote learning in the following morning sessions, 40 minutes per session. With the completion of the evening session, all the learning fliers were gathered and took away by the teacher and re-distributed to individual students with reference to their names in the morning session. That means all the participants formally remained the learning materials for an equal time-span of 80 minutes (equal time for formal learning, one way to improve face validity). Participants in the two classes were taught by the teacher researcher and they were not told to be tested.

To minimize the latest effect, posttest was carried out in an ordinary class in the same way that pretest was organized after two days of the one-session treatment. Differently, test contents in the posttest sheets were re-organized to lower test effect.

Data Analysis
This study intends to examine the impact of concordance on polysemous words learning, so the holistic scores of correct answers were regarded as dependent variables. The rating criterion was dichotomous (correct or incorrect), with one correct answer allocated one point. Therefore, the possible maximum scores were 40 points. Independent- and paired- sample t-test were performed to analyze the data. According to independent sample t-test, performances of EG and CG were compared to see if there was significant difference. Achievements of pretest and posttest gained by students in EG were contrasted to provide the possibility for corroboration by means of paired sample t-test. If there was a statistically significant difference in either/both of the test(s), the conclusion can be reached that concordance is an effective way for learners to acquire polysemous words.

Results
Based on descriptive data, skewness and kurtosis coefficient were acceptable for both group, which meant that scores of students both in EG and CG were normally distributed. Besides, independent sample t-test was run to set a baseline according to comparison of pretest (see Table 2.) The result unpacked that there was no significant difference between EG (*Mean* = 19.02, *SD* = 3.352) and CG (*Mean* = 20.00, *SD* = 3.947), indicated by t (125) = 1.504, p (.509) > .005. That is to say, students in both groups were comparable and homogeneous.

Independent sample-t-test was also conducted to compare the posttest scores of both groups. As can be seen in Table 3, a significant difference was failed to obtained between EG (*Mean* = 21.63, *SD* = 3.469) and CG (*Mean* = 21.09, *SD* = 3.558), t (125) = .870, p (.386) > .005. This finding suggested that concordance and traditional teaching were equally effective for polysemous words learning.

Table 2
Independent Sample t-test for Pretest

Group	Mean	SD	t	df	Sig.
EG	19.02	3.352	1.504	125	.509
CG	20.00	3.947			

Note. EG: Experimental Group; CG: Comparison Group

Table 3
Independent Sample t-test for Posttest

Group	Mean	SD	t	df	Sig.
EG	21.63	3.469	.870	125	.386
CG	21.09	3.558			

Note. EG: Experimental Group; CG: Comparison Group

To further explore the effectiveness of concordance on polysemous words learning, paired sample t-test was performed. According to Table 4, it was found that the posttest scores of students in EG (*Mean* = 21.63, *SD* = 3.469) significantly outperformed those in the pretest (*Mean* = 19.02, *SD* = 3.352), indicated by t (59) = 4.246, p (.000) < .005, d = 0.765. However, as for students in CG (see Table 5), no significant difference was presented between pretest (*Mean* = 20.00, *SD* = 3.947) and posttest scores (*Mean* = 21.09, *SD* = 3.558), t (66) = 1.797, p (.077) > .005. These findings demonstrated that concordance is more effective for polysemous

words learning, compared with the traditional teaching method. This argument was further supported by the relatively higher effect size ($d = 0.765$) earned by students in EG.

Table 4
Paired Sample t-test for the Experimental Group

Test	Mean	SD	t	df	Sig	d
Pretest	19.02	3.352	4.246	59	.000	0.765
Posttest	21.63	3.469				

Table 5
Paired Sample t-test for the Comparison Group

Test	Mean	SD	t	df	Sig.
Pretest	20.00	3.947	1.797	66	.077
Posttest	21.09	3.558			

Discussion

This study aims to explore the effectiveness of concordance on polysemous words learning. Results from independent sample t-test showed that concordance and traditional method had equal influence on the acquisition of polysemous words. This finding was contradictory with results reported in previous studies (Kaur & Hegelheimer, 2005; Lee et al., 2017; Yılmaz & Soruç, 2015). The following reasons may account for this phenomenon: the duration of the treatment session, linguistic proficiency of learners, task types and numbers of target words. First, this study only proceeded with a one-shot intervention (80 minutes). By contrast, Yılmaz and Soruç (2015) designed their study as an 8-class-hour instruction, with the participants in two studies sharing similar ages and linguistic proficiency now that they were all senior-high-school students. Seen from this perspective, it can be assumed that with concordance as a scaffolding, a much longer treatment session of polysemy learning is more likely to yield significant effect on students' acquisition in that more exposure to the subject learning provides students with the opportunity to familiarize and consolidate what they have experienced. Second, participants in studies of Kaur and Hegelheimer (2005) and Lee et al. (2017) were college-level learners, which may be of great help for them to obtain the positive influence. College students, to a large degree, embrace higher language proficiency, sufficient prior knowledge and multiple learning strategies, which without doubt lay a solid foundation for their further learning. However, students in the present study only had limited knowledge with regard to English subject and narrower strategies for language learning. Thus, when it comes to concordance-aided polysemous word learning, it is necessary to take into account the linguistic proficiency of the target learners. As illustrated, significant impact can be detected when the participants are advanced learners. Finally, the task type in the present study was dichotomous acceptability judgement, increasing the possibility to conduct guessing for both groups and then generating similar performance. In contrast, a range of tasks (a cloze activity, a sentence-making task and a writing task) were used in the study of Kaur and Hegelheimer (2005) and meaning-recall vocabulary test in the research of Lee et al. (2017). Judging from the divergent consequences obtained from the present study and the previous ones, it seems that tasks employed in previous researches present higher possibilities to yield significant results, compared to dichotomous Acceptability Judgement. Researches in the future can conduct further studies to examine the validity and reliability of various methods for vocabulary and/or polysemy acquisition. Moreover, the number of items in the test may act as an important factor that influences the results of studies. The present study only has 10 target words. This quantity may not be sufficient to elicit the significant impact of concordance on polysemous words learning. On the contrary, there were 23 target words in studies

implemented by Kaur and Hegelheimer (2005) and Yılmaz and Soruç (2015). In the research conducted by Lee et al. (2017), they included even more words, 30 target words in total. Taking this element into consideration, a moderate amount of words in the test may be reasonable and rigorous to produce reliable and referable results. In all, the above-mentioned factors seem to be possible reasons for the failure of detection of a significant effect of concordance on the acquisition of polysemous words.

However, paired sample t-test unveiled the significant improvement of EG, whereas this did not occur for CG. This finding unveiled the significant influence of concordance on students' polysemous words learning after a one-shot intervention. Comparatively, the traditional method failed to present this significant impact. Judging from this angle, concordance is a more effective way for students to learn polysemous words when compared with the traditional teaching method. This argument was consistent with the results described by previous researchers (Kaur & Hegelheimer, 2005; Lee et al., 2017; Yılmaz & Soruç, 2015). All of them have found the positive effect of concordance on vocabulary acquisition. The positive influence can be accounted for by the potential benefits brought about by concordance (lines), namely, the target words and the expressions surrounding the word. In this vein, the target words are positioned in different contexts, which is beneficial for students to observe, explore and conclude the usage of the assigned polysemous words. However, what students in the control group are exposed to is the decontextualized words. Learners under this circumstance need to carry out multiple and repeated rote learning for better mastery, which consumes more time and energy when compared with vocabulary learning in different contexts. In other words, vocabulary learning with contexts shows superiority to that without contexts. These findings reaffirmed the benefit of concordance and further mirrored the property of concordance claimed by Yavuz (2014) that concordance is a kind of program useful for the observation, exploration and conclusion of the various usage of a specific word on the basis of a wide range of authentic contexts.

Noticeably, the positive effect of concordance on learners in EG, to some extent, can be contributed to the teacher's lecture. In the lecture, the teacher performed a detailed talk about the different but related meanings of each target word within diverse contexts. During this process, the teacher may consciously or unconsciously place emphasis on or show connection among the different meanings of the target words in different contexts. This was conducive to learners' confirmation of their inferences made in the learning session and further strengthen their memory of the various inter-connected senses of the target words. As a result, students obtained the opportunity to transfer the knowledge acquired in the class to the final test. Seen from this standpoint, this study reconfirmed the findings yielded by Lee et al. (2017). They maintained that concordances accompanied with the definition of a target lexical item after learners' consulting the concordance lines brought about higher vocabulary gains than those without explanation of the target words.

Not to be neglected, another factor that may contribute to the significant enhancement of EG was the lower mean scores in the pretest (*Mean*=19.02), compared with that (*Mean*=20.00) gained by learners in CG. In terms of achievements in the posttest, students in EG (*Mean*=21.63) outperformed their counterparts (*Mean*=21.09). Due to this fact, the larger gap 2.61 (with 19.02 subtracted by 21.63) between the pre- and post-test earned by EG may lead to a significant difference, rather than the gap 1.09 (with 20.00 subtracted by 21.09) secured by CG.

Conclusions

This study examined the effectiveness of concordance on the acquisition of polysemous words. The results showed that compared with the traditional teaching method, it was a more efficient approach to polysemous words learning. However, there were some limitations. First of all, this study only included small-scale numbers of target words. This was possible to impair the successful attainment of the significant impact of concordance. Further study can enlarge the number of target words. Besides, task type in this study was sole and guessing-oriented, which tended to impede the accuracy of the authentic situation. Studies in the future can embed more types of task to compare the results obtained from different task types. Finally, there was only one adjective in this study (Adjective nature was identified dependent on its high frequency in different contexts). Further studies can encapsulate more parts of speech and design them with an even distribution, so that the effect that concordance presents on polysemous words of different parts of speech can be explored and compared. In addition, there were several other implications for research implementation. For example, researchers need to consider the consistency between linguistic proficiency of participants and task type to actualize a good match and/or combination of them. Moreover, when designing a research concerning vocabulary, it is necessary to think about the balance of part of speech and the number of words in the tests. Conclusively, concordance appears to be an effective method for vocabulary acquisition. Thus, the present study also shed light on the instruction of polysemous words. First of all, practitioners should take full advantage of concordance/concordancing program in ordinary classes to provide sufficient contexts and then yield ideal instructional effects. Additionally, teachers should pay attention to the effect of different activities on students' acquisition of polysemous words and accordingly the influence of divergent tests/tasks on learners' performance. Moreover, instructors should attach great importance to the balance of part of speech and present adequate exposure of the target words to students.

References

Alnamer, S. A. (2017). On the Awareness of English Polysemous Words by Arabic-Speaking EFL Learners. *Advances in Language and Literary Studies*, 8(2), 112. https://doi.org/10.7575/aiac.alls.v.8n.2p.112

Boulton, A. (2010). 'Data-driven learning: taking the computer out of the Equation'. *Language Learning*, 60 (3), 534–572.

Chen Yu, H., & Paul, B. (2021). Lexical bundles in L1 AND L2 Academic writing. *Language Learning & Technology*. http://llt.msu.edu/vol14num2/chenbaker.pdf

Deng, L. M., & Liu, J. (2022). Move–Bundle Connection in Conclusion Sections of Research Articles Across Disciplines. *Applied Linguistics*, amac040. https://doi.org/10.1093/applin/amac040

Gablasova, D., & Brezina, V. (2021). Words that matter in L2 research and pedagogy: A Corpus-linguistics Perspective. *Studies in Second Language Acquisition, 43*(5), 958-961. https://doi.org/10.1017/S027226312100070X

Huang, L. S. (2011). Corpus-aided language learning. *ELT Journal, 65*(4), 481-484. https://doi.org/10.1093/elt/ccr031

Kaur, J., & Hegelheimer, V. (2005). ESL students' use of concordance in the transfer of academic word knowledge: An exploratory study. *Computer Assisted Language Learning, 18*(4), 287-310. https://doi.org/10.1080/09588220500280412

Li, K. Z. (2015). The Use of Concordance Programs in English Lexical Teaching in High School. *Higher Education of Social Science, 8*(1), 60-65. http://dx.doi.org/10.3968/6267

Lee, H., Warschauer, M., & Lee, J. H. (2017). The effects of concordance-based electronic glosses on L2 vocabulary learning. *Language Learning & Technology, 21*(2), 32-51. http://llt.msu.edu/issues/june2017/leewarschauerlee.pdf

Li, X. (2021). Characteristics of Pronoun "Who and Its Concordance" in Chinese College Students' English Narrative Writing from the Perspective of Corpus-Based Method. *English Language Teaching, 14*(4), 55. https://doi.org/10.5539/elt.v14n4p55

Liu, H. Y., Kuo, C. C., & Chou, Y. H. (2019). Teaching English Polysemy through Semantic Fields. *PAROLE: Journal of Linguistics and Education, 9*(1). https://doi.org/10.14710/parole.v9i1.1-14

Lu, Z., & Sun, J. (2017). Presenting English polysemous phrasal verbs with two metaphor-based cognitive methods to Chinese EFL learners. *System, 69*, 153-161. https://doi.org/10.1016/j.system.2017.07.016

Meral, O. (2018). Acquisition of Noun Polysemy in English as a Foreign Language. *Journal of Foreign Language Education and Technology*, 3 (1), 1-36.

Mitsugi, M. (2017). Schema-based instruction on the acquisition of English polysemous words: Effects of instruction and learners' perceptions on the instruction. *Journal of Pan-Pacific Association of Applied Linguistics*, 21(1), 21-43.

Nihal, B. (2020). The Effect of Data-driven Learning & Image-schema-based Polysemy Networks Instruction on Learning Spatial Prepositions of Verticality: The Case of Moroccan EFL Learners. *Jurnal Arbitrer, 7*(1). http://arbitrer.fib.unand.ac.id

Philip, D., & Mark, B. (2022). Development of Noun Phrase Complexity Across Genres in Children's Writing. *Applied Linguistics*, amac032. https://doi.org/10.1093/applin/amac032

Ren, J. (2021). Variability and functions of lexical bundles in research articles of applied linguistics and pharmaceutical sciences. *Journal of English for Academic Purposes, 50*, 100968. https://doi.org/10.1016/j.jeap.2021.100968

Sophie, A. B., Elizabeth, W., Alex, H., Sandra, M., & Victoria, A. M. (2022). Children's Knowledge of Multiple Word Meanings: Which Factors Count and For Whom? *Applied Linguistics, 43*(2), 293-315. https://doi.org/10.1093/applin/amab028

Sun, B. Q. (2015). Cognitive Interpretation of Polysemy. *Foreign Language Department Beijing Institute of Graphic Communication Beijing, China.*

Sun, B. Q., & Zhao, H. F. (2015). Cognitive Teaching of English Polyseme Metonymic Interpretation of lexical sense extension. *International Conference on Arts, Design and Contemporary Education (ICADCE).*

Wang, C.M., & Lee, T.H. (1999). L2 Acquisition of Conflation Classes of Prenominal Adjectival Participles. *Language Learning*, 49(1), 1–36. doi_10.1111_1467-9922.00069

Yavuz, F. (2014). The Use of Concordancing Programs in ELT. *Procedia - Social and Behavioral Sciences, 116*, 2312-2315. https://doi.org/10.1016/j.sbspro.2014.01.565

Yılmaz, E., & Soruç, A. (2015). The use of Concordance for Teaching Vocabulary: A Data-driven Learning Approach. *Procedia - Social and Behavioral Sciences, 191*, 2626-2630. https://doi.org/10.1016/j.sbspro.2015.04.400

Zare, J., & Aqajani D. K. (2022). A Data-driven Learning Focus on Form Approach to Academic English Lecture Comprehension. *Applied Linguistics*, amac021. https://doi.org/10.1093/applin/amac021

Zhang, X. P., Lu, X. F., & Li, W. W. (2022). Beyond Differences: Assessing Effects of Shared Linguistic Features on L2 Writing Quality of Two Genres. *Applied Linguistics, 43*(1), 168-195. https://doi.org/10.1093/applin/amab007

Ethics Declarations

Competing Interests

No, there are no conflicting interests.

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