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Research Article

**Lexical Cohesion in Academic Discourse:
A Comparative Analysis of Iraqi and Native English Writers' Published Articles**

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ABSTRACT

This present study intends to examine the occurrence and role of lexical cohesion markers in academic and scientific articles authored by Iraqi and native English speakers. Using wordlists, the study measures the prevalence of 'direct repetition' and 'related repetition' to map lexical patterns constructing cohesion across two corpora of academic



publications. We analyzed the frequency data through close textual examination in order to explore the selection of lexical cohesive links and their non-linear connections in both corpora. Besides, we recruited a corpus-based approach to uncover semantic connotations of specific words in across the texts in both corpora. The findings suggested that a high rate of lexical cohesion markers does not correlate with effective writing skills. Out text analyses demonstrated that Iraqi authors often excessively used cohesive devices while their texts still contained serious problems with regard to developing ideas and arguments. The corpus analysis highlights Iraqi writers often produced cohesively weak texts due to deviating from standard semantic contexts. The study concluded that the integration of textual and corpus-based approaches offers an exhaustive understanding of how non-native authors employ lexical cohesion in both semantically and syntactically well-formed structures.

Key words: Lexical cohesion; academic discourse; simple repetition; derived repetition; Iraqi English writers; native English writers



Introduction

The written discourse has long served as a fundamental tool for communication. Obtaining effective writing skills is imperative in an educational context, subsuming the acquisition of multiple complex skills. Linguistic competencies, including appropriate word selection and grammatically well-formed sentences, along with technical abilities like correct punctuation and capitalization, are essential for producing academically sound texts. Nevertheless, these skills demand academic writers go beyond mere grammatical accuracy and develop the ability to craft logically structured and coherent texts to effectively develop and present their ideas.

Academic literature on cohesion in academic writing abounds with studies comparing native and non-native English authors (Al-Ghazalli & Majili, 2019; Booth, 2010; Bentz, et.al, 2015; De Clercq, 2015; Bulte & Housen, 2014), suggests that quality of writing is primarily assessed based on coherence in content, structure, and style rather than the sheer presence of cohesive devices (Davoodi & Kosseim, 2017; Yoon, et.al., 2023; Witt & Faigley, 1981; Connor, 1984; Lindsay, 1984; Scarcella, 1984; Schneider, 1985). This insight has been at the bedrock of linguistic studies, moving away from focusing solely on sentence-level analysis and instead examine how language functions_in broader discourse (Binalet & Wilans, 2023; Michaelson, 2024; Vashegani Farahani & Ghane, 2022; Lopez Cartez & Jacobs, 2023; Jones, et.al., 2022; Huber & Carenini, 2022). In this context, concepts such as discourse and text have emerged as essential analytical frameworks that extend beyond individual sentence structures. Foundational contributions to the field of text linguistics have been made by scholars including Fries (1952), Harris (1952), Pike (1967), Longacre (1968), and van Dijk (1972, 1977), whose work has significantly shaped the study of linguistic coherence.

The effective articulation and expansion of scientific research through structured writing requires academic writers systematically evaluate the process of constructing and constructing text. Unlike assessing technical aspects such as grammar and punctuation, evaluating coherence often relies on subjective ratings. Insofar as holistic assessments provide a general impression of a text, they are less effective in pinpointing specific writing strengths and weaknesses (Walcott & Legg, 1998). A detailed examination of academic writing abilities is essential for educators and researchers, as it helps identify areas that need improvement. Unquestionably, this allows for tailored instructional strategies and methodologies to address these deficiencies (Rousseau, 1990). Therefore, to create targeted instructional approaches that enhance students' ability to produce coherent texts, it is crucial to analyze textual features contributing to coherence in texts.

This study focuses on lexical cohesion as a key indicator of coherence. The primary concerns is to



figure out how words and phrases are repeated or semantically linked within a text (Hoey, 1991b). Research by Scarcella (1984) shows that native English writers utilize a wider range of grammatical and pragmatic cohesion techniques, while non-native writers tend to rely excessively on direct repetition. McCarthy (1991) asserts that the reiteration of the same lexical items is not a prevalent feature of standard English writing, while sentence variation is more commonplace. Despite the challenges non-native writers face in utilizing lexical cohesion, it has remained widely under-researched area in English language instruction (Flowerdew, 2006).

Several studies have explored English writing of Arab authors with respect to using lexical cohesion, but they have basically focused on investigating frequency and form of cohesion devices rather than their functional roles in structuring and circulating meaning through text. Furthermore, research by Khalil (1989) and El-Gazzar (2006) lacks a corpus of native English writing for conducting a comparative analysis, limiting their ability to evaluate non-native usage against standard norms. No comprehensive comparative studies have systematically examined how Iraqi English writers employ lexical cohesive devices, its frequency, and its functional role in contrast to native English academic writing.

This study aims to bridge a significant gap in academic research by throwing light on the unique difficulties Iraqi scholars encounter in employing lexical cohesion when writing in English, particularly in comparison to native English-speaking authors. What's more, the findings may contribute to a deeper understanding of interlanguage cohesion within Iraqi academic writing.

Cohesion and Coherence: Their Relationship and Significance

Understanding the mechanisms of how cohesion and coherence interact in constructing and circulating meaning through text is necessary for examining clarity and unity in developing ideas. Cohesion is concerned with explicit linguistic connections between ideas (Widdowson, 1978), whereas coherence relates to the underlying communicative intent that structures discourse (Widdowson, 1978). Though they function differently, these two elements are interrelated. Cohesion operates at the surface level through grammatical and lexical links. This is while coherence concerns logical and meaningful progression in writing. Some scholars, however, such as Seidlhofer and Widdowson (1999), argue that texts can be coherent even without overt cohesive ties. Similarly, Brown and Yule (1983) and Enkvist (1978) maintain that cohesion alone does not necessarily guarantee a logically structured text.

De Beaugrande and Dressler (1981) developed seven textuality criteria to classify cohesion and coherence. They assert that cohesion maintains persistently through explicit linguistic elements, while coherence facilitates conceptual integration. Halliday and Hasan (1976) highlight that albeit cohesion is primarily text-based, coherence extends beyond the text, conflating contextual factors. In this connection,



Hasan (1984) puts forth the notion of ‘cohesive harmony,’ proposing that texts with higher levels of cohesive harmony tend to be more coherent. However, she also acknowledges that cohesion cannot be considered an absolute requirement for achieving coherence. Daneš (1974) underscores the role of lexical cohesion in fostering coherence through thematic development. This study aligns with the perspective that both cohesion and coherence are essential for effective communication. We shall emphasize that both cohesion and coherence function independently but complementarily (Tanskanen, 2006).

Lexical cohesion and text structure

Lexical cohesion serves as a text-structuring mechanism facilitating the linkage between ideas. The cohesive effect is achieved via employing word repetition or related expressions, helping to introduce and highlight new concepts while evaluating their relevance in context (Winter, 1979). This recurrence is referred to as “replacement” which often necessitates modifications or extensions, and plays a pivotal role in reinforcing previously mentioned information (Winter, 1979; Hoey, 1991b). Moreover, lexical cohesion emerges through recurring patterns of word co-occurrence, underlining the formulaic and structured nature of language (Stubbs, 2001). Despite its significance, mastering lexical cohesion is a complex process that is rarely a formal component of English language instruction (Cheng, 2009). However, it remains fundamental for finding out how various sections of a text interconnect and for strategically reintroducing information within discourse.

Significance of Comparing Native and Non-Native Speakers in Corpus-Based Research

Analyzing differences between English texts produced by native and non-native writers in corpus linguistics provides critical insights into variations in language usage between these groups. Hunston (2002) stresses that the primary function of learner corpora is for comparative purposes. Hunston (2002) adds that these corpora offer a means to examine how different categories of language users contrast with one another, including learners versus native or proficient speakers. The findings offered by studies such as Granger (2002) and Leech (1998) highlight that these comparisons can reveal distinctive features of non-native writing, including common linguistic errors and tendencies to overuse or underuse particular lexical items, structures, or phrases.

Leech (1998) points out that the evaluation of learner corpora along with the native speaker corpora enables researchers to identify features of ‘interlanguage,’ serving as a developmental phase where language learners integrate linguistic elements from both their first and second languages (Waelateh, 2016). While some scholars, including Widdowson (1997), argue that interlanguage should be studied as an independent phenomenon rather than through direct comparison, Granger (2002) maintains that examining the divergence between NS and NNS writing is imperative for assessing how learners develop their skills toward



native-like proficiency. This type of analysis is particularly valuable for Second Language Acquisition (SLA) studies and foreign language pedagogy (FLT), as it contributes to understanding how learners acquire language and informs strategies for improving language instruction (Granger, 2002).

This research seeks to analyze three distinct types of lexical cohesion in the corpora of academic articles authored by Iraqi and native English writers and scholars. By comparing these two corpora, the study aims to recognize and investigate the frequency of the selected lexical cohesion markers to determine what category is prevalently used in the writing of each group. Furthermore, it examines the paradigmatic-level operation of lexical cohesion within these texts. In addition, the present study intends to explore which corpus-based approaches can offer new insights with respect to the function of lexical cohesion in academic writing. To achieve these goals, the study will address the following research questions:

1. What are the respective frequencies of lexical cohesion devices in each corpus?
2. How many cases of simple repetition are found in each corpus?
3. How frequently does derived repetition appear in each corpus?

2. Literature Review

Lexical cohesion, as a fundamental aspect of textual coherence, has been extensively studied in linguistics and discourse analysis. Researchers have increasingly employed corpus-based methodologies to examine lexical cohesion patterns with an aim to provide empirical insights into cohesive devices, synonymy, and collocations. This review synthesizes recent scholarly work on lexical cohesion with a focus on the applicability of corpus-driven approaches.

One significant study by Keba (2024) explores the role of synonymy as a measure of lexical cohesion in academic writing among Algerian EFL learners. The study employs a corpus-driven mixed-methods approach to assess the effectiveness of thesaurus-assisted writing in enhancing students' lexical cohesion. Keba (2024) emphasizes that systematic exposure to synonymy and corpus-based exercises significantly improves lexical variety and textual cohesion. Likewise, Lobato (2024) investigates the use of synonymy in student-produced texts. Through a qualitative corpus approach, Lobato (2024) highlights how synonymy use contributes to textual cohesion and stylistic development. The findings support corpus-assisted learning as a practical tool for enhancing students' cohesive writing skills. In another study, Fernández (2024) analyzes textual cohesion mechanisms in Bolivian mining narratives. This research applies a lexicographic and textual corpus approach to examine the linguistic strategies employed for cohesion. The corpus-based analysis identifies dominant lexical patterns that reinforce coherence across texts, showcasing the utility of computational tools in cohesion studies.

In a more technical study, Ming and Jun (2024) present a computer-aided approach for annotating



lexical cohesive devices in parallel texts. This methodology facilitates corpus-based comparative linguistic analysis, particularly useful for translator and interpreter training. Ming and Jun (2024) maintain that how automated annotation boosts linguistic research through the provision of specific objectives.

A broader study by Weiß (2024) integrates corpus linguistics with linguistic complexity analysis in German. This research argues for cross-corpus validation of lexical cohesion measures, advocating for a holistic approach to studying cohesion mechanisms. The findings stress the importance of corpus-driven methodologies in advancing linguistic research. Flowerdew (2024) also investigates the application of corpus-based approaches in ESP (English for Specific Purposes) genre analysis and corpus-assisted discourse studies. In this work, Flowerdew (2024) provides insights into how lexical cohesion functions across specialized discourse genres, reinforcing the practical applications of corpus linguistics in academic and professional settings

In a different study, Chen (2024) employs a network-based corpus analysis of covarying lexical collexemes in Mandarin degree adverb constructions. The study demonstrates how corpus-based methodologies can uncover patterns of cohesion beyond traditional linguistic frameworks and offers new dimension to cohesion research. Finally, Gaillat et al. (2024) discuss linguistic interoperability in corpus-based quantitative linguistics. Their study underscores the growing importance of corpus architecture in ensuring cohesive linguistic analyses, bridging various linguistic datasets for more comprehensive investigations.

Methodology

Research Design

This study employs a comparative corpus-based research design to investigate the use of lexical cohesion markers in academic writing by Iraqi and native English writers. The research integrates both quantitative and qualitative methodologies to systematically examine patterns of simple and derived repetition in two distinct corpora.

Corpus of the Study

The study adopts a corpus-based methodology that involves the collection and analysis of two separate corpora. The first corpus comprises academic articles written by Iraqi English writers, while the second corpus consists of academic texts authored by native English speakers. To systematically analyze these texts, the study follows a computational linguistic approach, extracting wordlists and identifying lexical cohesion markers through computational modeling. The primary aim is to examine the frequency



and functional use of direct repetition and related repetition, mapping how lexical cohesion contributes to coherence within the texts.

For sampling and data collection, the study selects peer-reviewed academic articles to ensure credibility and standardization. Both corpora maintain equal sample sizes to allow for a fair comparison. Additionally, texts are selected from similar academic disciplines to minimize disciplinary bias, ensuring that variations in lexical cohesion stem from linguistic differences rather than subject-specific conventions. The inclusion of published texts further strengthens the reliability of the findings

Procedure

A quantitative analysis is conducted to measure the frequency of simple and derived repetition across both corpora. The study applies wordlist-based frequency measures and lexical repetition network modeling (LRNetM) to identify the most commonly used cohesive markers. Additionally, a statistical comparison is performed using t-tests to assess significant differences in the usage of lexical cohesion between the two groups. The quantitative approach provides a data-driven perspective, ensuring that any variations in repetition frequency are objectively measured.

Alongside the numerical analysis, the study incorporates a qualitative examination to provide deeper insights into how lexical cohesion operates within academic writing. The qualitative analysis involves a close textual reading of selected excerpts from both corpora. This step focuses on how Iraqi and native English writers use repetition to construct arguments, ensuring coherence and logical text progression. Particular attention is given to whether lexical cohesion contributes to effective communication or results in redundancy and incoherence.

The data analysis procedures follow a structured approach. First, the collected texts are formatted, cleaned, and prepared for computational corpus analysis. Wordlists are generated to assess lexical cohesion markers, while the LRNetM model is used to map lexical repetition networks. The study then applies a Shapiro-Wilk normality test to check for normal data distribution before performing independent-sample t-tests to evaluate statistical significance. In parallel, selected textual samples are examined qualitatively to highlight patterns in cohesion and coherence between the two groups.

Theoretical Model of the Study

Halliday & Hasan's (1976) Lexical Cohesion Framework

Halliday and Hasan (1976) present a systematic approach to analyzing textual cohesion through systematic classification of cohesive devices. They categorize cohesion into two main types: grammatical



and lexical. The grammatical cohesion encompasses reference, substitution, ellipsis, and conjunctions. This is while lexical cohesion is established through semantic relationships between words in a discourse

According to Halliday and Hasan (1976), lexical cohesion plays a cardinal role in shaping the overall ‘texture’ of a text. The notion of texture refers to a distinguishing feature that separates coherent discourse from a mere collection of unrelated sentences. They suggest that cohesion is established through lexical relations that unify a text, with these links referred to as ‘ties.’ These cohesive ties emerge when one lexical element within a sentence depends on another for its interpretation, thereby reinforcing textual unity.

The concept of cohesive ties offers a systematic approach to analyzing textual structure by identifying patterns of connectedness within a passage. Halliday and Hasan (1976) further classify these ties based on their proximity within a text, distinguishing between closely linked and more distantly related cohesive elements. They delineate lexical cohesion into two primary subcategories: reiteration, including exact repetition, synonymy, superordinate usage, and general word substitution, and collocation, which pertains to the natural co-occurrence of words within specific lexical environments.

Reiteration refers to the recurrence of a lexical item within a text. The occurrence can be manufactured either through direct repetition of the same word or through alternative means such as synonym substitution, the use of a more general term, or the employment of a superordinate category to maintain textual connectivity. This cohesive strategy reinforces meaning and ensures continuity within discourse by linking concepts in a structured manner.

Collocation occurs when specific lexical items appear frequently together within the same co-text, forming a natural associative bond. This relationship can be based on habitual word pairings or established lexico-semantic connections, where certain words inherently complement or reinforce each other within a given context. Patterns of collocation play a crucial role in shaping textual cohesion by creating predictable, structured linkages between words, enhancing both readability and coherence.

Hoey’s (1991b) Lexical Cohesion Framework

Hoey (1991b) presents an extensive framework for analyzing lexical cohesion. The main claim in this framework is that lexical cohesion is unique among cohesive mechanisms for establishing multiple interconnections within discourse (Hoey, 1991b, p. 10). According to his perspective, cohesion studies are inherently linked to the exploration of lexical relationships, particularly those that involve repetition.

Hoey’s model prioritizes understanding how these cohesive elements contribute to the structural organization of a text. The framework goes well beyond the sole categorization of different types of lexical cohesion. His approach not only quantifies lexical cohesion but also examines the ways in which these



cohesive ties influence the overall coherence of discourse. Through this model, he highlights the functional role of lexical cohesion in shaping textual structure, emphasizing the significance of repetition and associative lexical links in maintaining continuity throughout a text.

Defining Simple and Derived Repetition in This Study

According to Hoey (1991b), simple repetition is the most straightforward and commonly recognized form of lexical recurrence. Various scholars have referred to this phenomenon using different terms, including ‘direct,’ ‘exact,’ ‘formal,’ or ‘recurrence’ (e.g., Gutwinski, 1976; de Beaugrande & Dressler, 1981). In this study, simple repetition is considered as occurring when a lexical item reappears in a text with only minimal grammatical variations and makes no changes in its basic meaning (e.g., *study- studies*) (Hoey, 1991b).

Derived repetition, also termed complex repetition, is characterized by morphological modifications to a word, often through affixation, leading to a change in word class (Hoey, 1991b). In this paper, derived repetition is defined as involving lexical items that either share a common morpheme but differ in form (e.g., *drug* (noun) – *drugging* (verb)) or remain formally identical while functioning differently in a sentence (e.g., *human* – *humans*) (Hoey, 1991b, p. 55).

Results

Quantitative Analysis

This study begins its lexical cohesion analysis by generating wordlists for two distinct corpora: one comprising texts by Iraqi English writers and the other containing works by native English speakers. Wordlists identify instances of simple repetition. However, they may also include derivative forms that require additional classification. To address this, the LRNetM model is employed to organize the wordlist into interconnected lexical repetition networks, ensuring that both simple and derived repetitions are systematically categorized. To facilitate this process, the wordlist is arranged alphabetically to simplify the identification of related lexical forms that exhibit either inflectional or derivational modifications. Our analytical approach treats each set as an independent dataset and analyzes its cohesion patterns in isolation.

Lexical repetition networks can manifest in various ways in discourse. Hoey (2005) notes that cohesive networks may consist solely of simple repetition or incorporate co-referential expressions, pro-forms, and near-synonyms. However, the LRNetM model in this study specifically focuses on networks formed by simple and derived repetitions. As a result, three primary lexical repetition networks are examined:



1. Networks comprising exclusively simple repetitions.
2. Networks consisting of solely derived repetitions.
3. Networks integrating both simple and derived repetition patterns.

The two corpora are comprised of a distinct number of abovesaid networks of lexical repetition. Table 1 below illustrates the breakdown of the Iraqi English writers' corpus, detailing its composition in terms of repetition networks.

Table 1.

Lexical repetition networks in Iraqi English writers' corpus

No.	Lexical item	Frequency	Total number of tokens in each lexical rep. Network	Tokens of simple rep.	Tokens of derived rep.
1	Ability	20	35	15	20
	able	10			
	unable	5			
2	Area	30	56	30	26
	areas	26			
3	Belief	8	26	18	0
	believe	18			
4	Brain	5	5	1	4
5	Calculate	6	9	6	2
	calculable	3			
6	Challenge	24	58	18	24
	Challenges	34			
7	Children	14	17	5	12
	child	3			
8	Controversy	9	9	7	0
9	Create	76	120	53	24
	creation	32			



	created	12			
10	Develop	36	66	30	36
	developmental	12			
	developed	18			
11	Existence	3	7	5	2
	exists	4			
12	Fear	12	19	15	3
	fears	7			
13	Industry	5	9	5	0
	Industrial	4			
14	Society	76	165	120	40
	social	89			
15	require	43	43	23	19

In Table 1, the primary quantitative metrics used to analyze lexical repetition networks within the Iraqi English writers' corpus include:

1. The Number of Tokens in Each Lexical Repetition Network: This measure accounts for the complete set of lexical items within a given repetition network. It provides an overview of the extent of lexical cohesion throughout the corpus.
2. Tokens of simple repetition: This metric identifies the frequency of words that appear in their original or minimally altered grammatical forms. It helps quantify direct lexical recurrence.
3. Tokens of derived repetition: This count reflects the number of lexical items that exhibit morphological modifications, such as affixation or word-class shifts, capturing instances of more complex lexical repetition.

By systematically applying these quantitative measures, the study effectively differentiates between simple and derived repetitions and allows for a structured analysis of lexical cohesion patterns in the writing of Iraqi English authors.

Table 2.

Lexical repetition networks in Native English writers' corpus



No.	Lexical item	Frequency	Total number of tokens in each lexical rep. Network	Tokens of simple rep	Tokens of derived rep
1	Access	24	40	24	11
	Accessibility	16			
2	Complex	35	35	30	0
3	Easy	23	39	23	16
	Easier	11			
	Easily	5			
4	Efficient	46	46	40	6
5	Identity	59	148	95	46
	Identify	89			
6	Information	76	76	65	11
7	Power	130	130	130	0
8	Provide	127	172	97	34
	Provision	45			
9	Various	76	119	50	66
	Variety	43			
10	Solution	78	135	64	74
	Solve	45			
	Solving	12			
11	Rely	45	100	43	57
	Reliance	34			
	Reliable	21			
12	Problem	29	29	29	0



13	Complex	34	34	34	0
14	Exercise	86	86	0	86
15	Practice	136	136	130	6

In this section, we quantified the occurrence frequency of both simple and derived repetitions across the Iraqi and native English writers' corpora. We then conducted a comparative frequency analysis for each type of cohesion, considering both overall and individual text-based frequencies. The analysis involved two approaches: First, we calculated the overall occurrences of simple and derived repetitions within each corpus. Second, we assessed their distribution across individual texts to observe patterns of lexical cohesion.

The aggregated frequency results revealed that Iraqi English writers exhibited simple repetition approximately 24% more frequently than their native English counterparts (165 vs. 133 per thousand words). Similarly, the mean frequency of simple repetition in the Iraqi English writers' corpus ($M = 162$, $SD = 36.5$) was 27% higher than that of native English writers ($M = 127.5$, $SD = 32$). However, to confirm whether this observed difference was statistically significant rather than due to random variation, we applied an independent-samples t-test—a statistical approach used for comparing results between independent datasets (i.e., the two corpora).

Since a t-test requires normally distributed data, we performed a Shapiro-Wilk normality test using SPSS, which confirmed that the frequency values for each repetition type followed a normal distribution ($p > 0.05$). The t-test results indicated a statistically significant difference in the use of simple repetition between the two groups ($t = 3.8$, $p = 0.00017$). This outcome directly answers the first peripheral question, which examines the relative frequencies of simple repetition in both corpora. The findings suggest that Iraqi learners of English employ simple repetition at a considerably higher rate than native English writers.

Regarding derived repetition, the results showed that Iraqi English writers unexpectedly used this form of lexical cohesion slightly more frequently than native English writers (38 vs. 35 per thousand words). Further individual frequency analysis demonstrated that Iraqi English writers used derived repetition 6% more frequently than native English writers (36 vs. 34 per thousand words). However, statistical verification using an independent t-test confirmed that this difference was not significant ($t = 1.05$, $p = 0.25$).

These findings provide an answer to the second peripheral question, which examines the frequency of derived repetition across the two corpora. The overall relative frequencies of derived repetition in the Iraqi English writers' corpus were 38 per thousand words, while in the native English writers' corpus, they were 35 per thousand words. Based on these results, we conclude that both groups used derived repetition at relatively similar levels, with only a marginal variation in frequency.



Qualitative Analysis

Analysis of Simple Repetition in the Native English Writers' Corpus

To better understand how native English writers employ simple repetition compared to their Iraqi counterparts, it is essential to examine examples from published academic texts written by native English authors. Below are selected excerpts demonstrating the function of simple repetition within their writing.

1. 1 The role and function of computers in the work environment have brought about another form of moral dilemma. // 2 Concerns are rising around the idea that humans will finally be replaced with computers in such modern workplaces. // 3 Computers have been playing a pivotal role in different areas of employment, such as accountancy, demanding an expert skill to work with numbers. // 4 Human beings will surely be replaced by these computers.

In this excerpt, repetition is strategically used to reinforce key ideas. While the second use of the word *workplace* in T-unit (2) could technically be omitted, its reappearance strengthens the connection to the previous statement, reinforcing the argument that computers will eventually take over human roles in employment. T-unit (3) further elaborates by specifying professions where this shift is occurring. In T-unit (4), the words *computers* and *replace* appear again, echoing their earlier use in T-units (1) and (2). Although this repetition might seem redundant at first, it actually serves a distinct function by shifting focus toward a more specific application—accountancy. In this context, repetition helps maintain coherence while distinguishing between general and specialized discussions.

2. 1 So, the only practical solution left is to allow fewer cars to the streets. // 2 This can be achieved through three main ways: Car sharing, public transportation, and walking or cycling. // 3 Car sharing appears to be more practical; however, it is not widely accepted for different reasons. // 4 It aborts the sense of ownership over the vehicle // 5 Additionally, you need to make decisions about the destination and duration of your trip in advance. // 6 Similarly, anyone who pays for taxes, insurance, and any related expenses for the car have the right to use the car [...] 12 Besides, there are concerns about the safety of people who are walking or cycling // 13 Moreover, we are doomed to inhale exhaust fumes unless vehicles are banned // 14 These transportation means are not fast enough but they require you to carry less with you.

This passage provides another illustration of how native English writers employ simple repetition to create a seamless flow of ideas. The repeated mention of *sharing cars* in T-units (2) and (3) ensures continuity in the discussion, keeping the reader engaged while simultaneously introducing new details about the feasibility of this approach. The word *cars* in T-unit (2) connects directly to its earlier occurrence in T-



unit (1), forming an extended lexical chain: *cars* → *car*.

Although T-units (7-11) are omitted in the passage above (represented by square brackets), they discuss the second suggested alternative—public transport. The excerpt resumes at T-unit (12), where the term *walking* is reintroduced, originally appearing in T-unit (2) as one of the three proposed solutions. By repeating *walking* in T-unit (12), the author triggers a continuation of the discussion, which is expanded upon in T-units (12) and (13). The concluding T-unit (14) encapsulates the three proposed solutions (*sharing cars, public transport, and walking*) under the umbrella term *transportation means*, which itself connects back to the earlier use of *transportation* in T-unit (2), thereby forming a cohesive repetition link.

Analysis of Simple Repetition in ALEC

This section provides examples illustrating how Iraqi English writers employ simple repetition in their writing.

3. 1 It goes without saying that computes are fast and perform pre-programmed orders and finally is true that computer can run faster, operate pre-defined functions faster and then implement these tasks based on pre-defined criterion. // 2 The computer is not capable of working independently // 3 it is the human mind that programmes its function. // 4 Humans are always required to observe how computers work. // 5 Computer are not able to work independently // 6 they require a sort of orders to be defined, some tasks to be programmed by human then be included into the machine to perform the task. // 7 computers are dependent upon humans to perform tasks according to the given order. // 8 We humans think for computers and it is us who embed and programme the computer to perform some certain tasks and functions.

While the key argument in this excerpt is valid and relevant to the topic, the paragraph demonstrates an excessive reliance on simple repetition to convey a single central idea. The primary claim expressed in this passage is that *computers cannot function without human intervention*. However, instead of expanding or deepening the argument, the writer reiterates the same concept multiple times using a set of recurring lexical items, including *operation, functions, perform, tasks, define, embed, and programme*.

From T-unit (5) onwards, the repetition becomes redundant, as the learner rephrases previously stated ideas rather than advancing the discussion. For instance, the noun *function(s)* appears three times throughout the essay, but instead of contributing to the logical development of the argument, it is merely used to reinforce the same point across different sentences. Consequently, T-units (5-8) do not add substantial value to the text and could be removed without altering the core message. To further illustrate how simple repetition is employed by Iraqi English writers, we analyze another example in the next section.



4. 1 [...] the core responsibility of central governments is to be committed to the safety and security of their people. // 2 Thus, it seems rationale to argue that governments should enact severe laws and forces to guarantee the health and safety of citizens involved in such sports. // 3 These laws should stress on the roles of individual sports clubs with respect to the safety of their sportsmen and guaranteeing the safety of the players. [...] 5 As it was said earlier, it is the responsibility of central governments to guarantee the safety of their people // 6 and very risky sports cannot guarantee neither the safety nor the lives of sportsmen.

A significant issue observed in this excerpt is the excessive recurrence of particular words, forming a dense lexical repetition network: *responsibility* appears twice; *government* is reiterated thrice; *guarantee* surfaces in multiple forms (*guarantee*, *guaranateeing*); *safety* is echoed frequently, as are *safety*, *laws*, and *sportsmen*. This overuse of simple repetition leads to redundancy, suggesting that the same message could be conveyed more succinctly without compromising clarity. The six T-units could be consolidated into a more efficient textual structure, reducing superfluous reiteration.

Derived Repetition in Native English Writers

*5. 1. Computers have been instrumental in transferring money all around the world, they have even produced artwork to **entertain**. // 2 Computer create different images, such as 'computerized images and photos, they appear to be more famous than artworks stem from the imagination of an artist, // 3 and even more entertainment is offered by computer games than any other real-world entertaining activity.// Virtual reality enables people to enjoy 'three dimensional entertainment created by computers.*

In contrast, Example (5) demonstrates how native English writers effectively employ derived repetition to strengthen their argument. The paragraph presents the diverse applications of computers, emphasizing their role in entertainment. In the first T-unit, the verb *entertain* introduces the idea of computer-generated amusement. This concept is expanded in the third T-unit by discussing digital gaming, further reinforced in the fourth T-unit, where *entertainment* is repeated to emphasize the immersive nature of virtual reality.

This structured use of derived repetition is intentional, as it not only reinforces the primary argument but also introduces new information, ensuring logical text progression. The repetition network (*entertain* → *entertainment* → *entertainment*) facilitates coherence and enables the reader to grasp the connection between different ideas. Unlike in the Iraqi English text, where repetition merely restates prior points, here, it serves a developmental function, demonstrating a sophisticated approach to lexical cohesion.

*6. 1. We intend to construct different roads to **solve** this problem // 2 Certain councils have*



*attempted to demonstrate greater initiative by constructing bus lanes and encouraging individuals to utilize public transportation. // 3 These are primarily temporary **solutions** that will finally aggravate the problem. // 4 There will be new vehicles in new roads. // 5 The problem, however, is not narrower roads and streets, but heavy traffics.*

Example (6) provides further insight into how native English writers construct a cohesive argument using derived repetition. The paragraph begins by discussing various approaches to alleviating traffic congestion, including expanding roads and constructing bypasses. The third T-unit evaluates these solutions, noting their short-term nature, while the fourth highlights how additional roads may inadvertently lead to increased vehicular presence. The argument concludes by shifting the focus from infrastructure to traffic volume as the core issue. Derived repetition plays a crucial role in maintaining textual connectivity. The writer establishes a lexical link between *solve* in the first T-unit and *solutions* in the third. This connection enhances the coherence of the argument by demonstrating how proposed measures relate to the overarching problem.

Derived repetition in Iraqi English Writers

*7. 1. Nevertheless, nowadays, computers enable us to easily **access** huge bodies of information// 2 that can be utilized to **easily solve** certain profound problems. [...] 3 The **accessibility** to such information has provided **easier ways** for us to recognize trustworthy **solutions** to the issues we are tackling with.*

Turning to Iraqi English writing, Example (7) highlights how lexical repetition is employed without significantly advancing the argument. The first T-unit discusses how computers provide access to vast amounts of information, facilitating problem-solving. However, in the third T-unit, the writer merely rephrases the same idea, using *accessibility* instead of *access* (T. unit 3) and *solutions* instead of *solve* (T unit 3). While these words establish a formal lexical connection, they do not contribute substantively to argument development.

This over-reliance on repetition without elaboration limits textual coherence. Unlike the native English example, where derived repetition serves a structural purpose, the repetition in this excerpt results in redundancy. Instead of progressing the discussion, the writer recycles previously stated ideas, reducing the effectiveness of lexical cohesion.

8. The social issue which is put forth in this argument may be witnessed in one family with 3 cars; everyone has his own car // 2 because of this, the family members may be separated from each other and no interaction will take place between them. // 3 This problem emerges, and



*the proposal to raise fuel charges will restrict the use of these vehicles. // 4 and all families will use only one car, // 5 It will ensure the family stays connected during their travels, fostering the kind of perfect relationships that seem to be missing these days, // 6 everyone drives the way they prefer // 7 and sympathy and love no longer serves as strengthening **connection** between family members, // 8 It will enhance the chances of camping together and being connected.*

A similar pattern emerges in Example (8), where the Iraqi English writer attempts to argue that a reduction in car ownership could strengthen family connections. The paragraph repeatedly emphasizes how each family member's independent car use leads to social fragmentation. This argument is initially stated in T-units (1) and (2), only to be rephrased in (6) and (7) without additional insights. The lexical repetition network (*family* → *family* → *families*; *cars* → *cars* → *car*; *drives* → *drives*) reinforces this redundancy.

Furthermore, the connection between *connection* (T-unit 7) and *connected* (T-unit 8) fails to introduce new conceptual material. Instead of contributing to the logical development of the argument, these repetitions serve only to restate the same premise. While Arabic discourse values such reiteration as a persuasive technique, English argumentative writing prioritizes conciseness and logical progression. The tendency to juxtapose lexical cohesive devices without advancing the argument highlights an area where Iraqi English writers struggle with textual organization.

Discussion

The findings of this study brought to light significant differences in the use of lexical cohesion between Iraqi English writers and native English writers. Through a comparative corpus-based analysis, it was established that Iraqi writers rely more heavily on simple repetition, whereas native English writers employ a more varied and strategic use of lexical cohesion. These differences indicate fundamental discrepancies in how cohesion is perceived and utilized by non-native and native writers. This accords with Widdowson's (1978) distinction between cohesion and coherence; Iraqi writers may achieve surface-level cohesion through repetition but struggle to establish deeper coherence, which involves the reader's ability to infer the writer's communicative intent. Stubbs (2001a) argues that lexical cohesion is tied to communicative competence; therefore, the overuse of simple repetition by Iraqi writers could signal a gap in their ability to effectively structure and convey meaning in English academic discourse.

One of the central findings is the excessive reliance on simple repetition in the Iraqi English writers' corpus. The quantitative analysis revealed that Iraqi English writers employ simple repetition approximately 24% more frequently than their native counterparts. While lexical cohesion is essential in maintaining



textual coherence, an overuse of direct repetition without further elaboration can hinder the logical flow of arguments. This observation aligns with previous studies (e.g., Al-Ghazalli, 2019; McCarthy, 1991; Scarcella, 1984) suggesting that non-native writers often prioritize cohesion at the expense of coherence, leading to redundancy rather than enhanced readability. As Halliday and Hasan (1976) suggest, cohesion contributes to the ‘texture’ of a text, distinguishing it from unrelated sentences; however, excessive simple repetition, as found in the Iraqi corpus, creates a monotonous and less engaging ‘texture,’ failing to elevate the text to a higher level of coherence.

The study also examined derived repetition and found that both groups utilized it at relatively similar levels, with a slight increase in the Iraqi writers’ corpus. However, the qualitative analysis demonstrated that Iraqi English writers tend to use derived repetition in a way that does not necessarily contribute to argument development. Instead of employing lexical variation to introduce new ideas or extend discussions, repetition was often used to restate prior points. This contrasts with the native English writers, who use derived repetition as a structural tool to guide readers through their arguments while ensuring text progression. This finding suggests that Iraqi writers might be focusing more on lexical form than on the functional role of lexical items in building a cohesive argument, supporting Hoey’s (1991b) view that lexical cohesion is not merely about identifying cohesive elements but also about understanding how they contribute to the overall structure and meaning of the text.

A major contributing factor to these discrepancies is likely the influence of L1 rhetorical traditions. Arabic academic discourse traditionally values reiteration as a persuasive strategy, emphasizing emphasis and reinforcement rather than conciseness (Kaplan, 1966). This rhetorical preference appears to be transferred into English writing, where excessive repetition results in redundant statements rather than coherent argumentation. Halliday (1985) argues that language is context-dependent. Additionally, the lack of explicit instruction on effective lexical cohesion use in Iraqi English language pedagogy may further contribute to these issues. Many EFL curricula emphasize grammatical accuracy and vocabulary acquisition (Booth, 2010) but do not provide sufficient training on text cohesion and coherence (Flowerdew, 2006). Thus, students do not receive adequate guidance on how to effectively employ lexical cohesion to enhance rather than hinder their writing.

Furthermore, the findings suggest that native English writers utilize repetition to create thematic consistency while ensuring that each instance of lexical recurrence adds to the argument. Their writing reflects a balance between cohesion and coherence, where lexical choices are used to reinforce key concepts without unnecessary redundancy. The qualitative analysis of native texts illustrated how repetition was strategically employed to introduce new layers of discussion, ensuring logical progression throughout the



text. This confirms prior research (e.g., Hoey, 1991b; Halliday & Hasan, 1976) that emphasizes the role of lexical cohesion in structuring discourse meaningfully (Davoodi & Kosseim, 2017; Yoon et.al., 2023). This reinforces Tanskanen's (2006) argument that cohesion and coherence are complementary; native English writers effectively integrate these two elements to produce cohesive and logically structured texts.

The results of this study have significant implications for EFL writing instruction. The findings underscore the need for targeted pedagogical interventions to help Iraqi English writers refine their use of lexical cohesion. Instructional approaches should emphasize not just the presence of cohesive devices but also their functional role in ensuring text coherence. By integrating corpus-based methodologies into teaching practices, educators can provide learners with concrete examples of how lexical cohesion operates effectively in academic writing. Moreover, explicit training in discourse structuring, argument development, and revision strategies may help Iraqi writers reduce redundant repetition and improve coherence.

Conclusion

This study has examined the use of lexical cohesion in academic writing through a comparative analysis of texts authored by Iraqi English writers and native English writers. The findings highlight key differences in how these two groups utilize lexical repetition, with Iraqi writers exhibiting a significantly higher frequency of simple repetition while struggling with effective argument progression. While lexical cohesion is fundamental to text coherence, its overuse without a clear structural purpose can lead to redundancy rather than clarity.

The study suggests that the challenges Iraqi writers face stem from both L1 rhetorical influence and insufficient exposure to corpus-based writing instruction. Unlike native English writers, who employ repetition to develop their arguments systematically, Iraqi writers often reiterate ideas without contributing new insights. These findings call for an increased focus on discourse-level writing instruction in EFL curricula, emphasizing the strategic use of lexical cohesion to enhance coherence and readability.

Future research should explore additional aspects of textual cohesion beyond lexical repetition, such as grammatical cohesion and discourse markers, to gain a more comprehensive understanding of how Iraqi EFL learners construct written texts. Moreover, examining the effectiveness of pedagogical interventions that incorporate corpus-based approaches may provide further insights into improving academic writing proficiency among Iraqi learners. By addressing these areas, educators can better equip non-native writers with the tools needed to produce more cohesive and coherent academic texts.

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These references should provide a solid foundation for your research. Let me know if you need additional sources or specific topics within lexical coherence.

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