Research Paper

A Corpus-Based Contrastive Analysis of Cohesive Devices in Academic Writing: Insights from Arab and English Research Articles in Education and Medicine

Raghda Naeem Khudhair Al-Mshakhee[1], Sousan Sattar Boroujeni[2*], Haider Hussein Katea Khanjar[3], Bahram Hadian[4]

[1]Ph.D. Candidate, English Department, Najafabad Branch, Islamic Azad University, Najafabad, Iran
[2*]Assistant Professor, English Department, Najafabad Branch, Islamic Azad University, Najafabad, Iran
[3]Department of English, Thi-Qar University, Nasirya, Iraq
[4]Assistant Professor, Department of English Languages, Isfahan (Khorasgan) Branch, Islamic Azad University, Isfahan, Iran

Abstract

This study investigated cohesive devices in AEW and NEW texts through a comparative case study indicating patterns in their convergence. This was done through Halliday and Hasan's (1976) model with examples of grammatical and lexical cohesion in Education and Medicine. It drew on a systematic review of peer-reviewed literature and made use of AntConc software to help quantify the numbers of cohesive devices in different contexts. The findings indicated significant cultural and linguistic impacts on cohesion use. Native-English writers of Arabic background often made use of repetition and third-person pronouns, following the rhetorical traditions of Arabic, which emphasize thematic coherence. Conversely, native English writers made more use of collocation, lexical variety, and clear logical connectors, adhering to Western norms of clarity and linear development. These findings have a number of implications. The findings, therefore, imply a need for tailored EFL instruction in which the cultural preferences of the Arab learners are aligned with the English academic norms. Educators should adopt strategies that will also promote the use of cohesive ties, such as collocations and conjunctions, showing respect for the rhetorical identity of the Arab students. Tools like AntConc will help students to improve their writing and make them more self-aware of their writing. The greatest non-pedagogical value of this study would be its contribution to cross-cultural understanding in academic writing. The findings also enhance the understanding of cohesion in academic writing and provide practical suggestions on how to improve EFL instruction and effective cross-cultural communication in today's interconnected academic landscape.

INTRODUCTION

Cohesion, as was thoughtfully conceived by Halliday and Hasan in their seminal work in 1976, are the various linguistic devices which effectively link textual elements to create a cohesive whole text that is easily understandable. This is a concept of cohesion with a critical and indispensable function in the academic writing circuit, as it not only creates coherence among ideas but also enhances the readability of texts for an intended audience. The English Language, being deeply rooted in the principles of explicitness of communication, places emphasis on the use of logical connectors and clear references with regard to the clarity of understanding required

*Corresponding Author's Email:
sousansattar@phu.iaun.ac.ir

in the discourse, according to McCarthy in 2001, as supported also by Swales and Feak in 2012.

Unlike other writing systems, Arabic writing often employs stylistic devices such as repetition, ellipsis, and pronominal references "which are profoundly anchored in important cultural values like preference for indirectness of expression, avoidance of directness and above all, a close sense of thematic unity throughout the text" (Ghazala, 2008; Al-Ruwayshed, 2012). In a nutshell, such remarkable differences indicate an urgent need for conducting comparative studies that would attempt to explain and fathom better the divergent strategies employed in cross-cultural academic communication which may eventually serve as an impetus for enriching the teaching and learning of EFL instruction, a subject that calls for much research (Connor, 1996; Al-Saleh, 2015). Theoretical Background

Cohesion can be clearly divided into two main parts: grammatical and lexical, with the former comprising subcategories such as reference, substitution, ellipsis, and conjunction, while the latter comprises repetition and collocation (Halliday & Hasan, 1976). Each of these categories has its own way of reflecting and embodying the underlying cultural practices and rhetorical conventions that prevail in specific linguistic communities. A number of research studies have underlined the significant effect exerted by these established norms on the use of cohesion in different types of written and spoken discourse. For example, it is pointed out that in English academic texts, cohesive devices used tend to prefer an explicit kind of continuity of a coherent logical flow of the text, by conjunctions such as "however" and "therefore." In Arabic texts, cohesive ties are thematic and normally secured by the careful manipulation of repetition and ellipsis (Hyland, 2005; Al-Saleh, 2015). This noted discrepancy has often been chalked up to the oral tradition characteristic of the Arabic language, in addition to its unique non-linear discourse structure, which has also been reported in other works (Coulmas, 1992; Hinds, 1987).

Recent studies have confirmed and emphasized the critical role that cultural norms play in writing practices. More specifically, Arab writers who write in the English language rely heavily on repetition as a cohesive device in their writing; this is closely aligned with the existing rhetorical traditions of the Arabic language itself, according to 2013 findings from researchers Abu-Rabia and Shany. The converse approach is taken by native English writers, where collocations and diverse lexical ties are utilized far more, as demonstrated in 2016 findings from researchers Hyland and Shaw. These cross-cutting divergences between the two groups of writers indicate that cultural sensitivity must be brought to bear on any academic setting crossing boundaries of languages and disciplines—very much in line with what was emphasized in works from Flowerdew, 1999, and Barton, 2013.

Empirical Background

Empirical research that investigates the issue of cohesion has traditionally focused most of its efforts on EFL learners, which has led to a relatively narrow scope of inquiry when it comes to exploring native and non-native writers across different academic disciplines (Abu-Rabia & Shany, 2013). However, in the past few years, there have been some large-scale corpus-based studies that have begun to fill this gap in the research by exploring seriously the differences in cohesion across different disciplinary settings. For instance, if one considers the disciplines of education and medicine, it is possible to notice that the two disciplines display distinct cohesive behaviors, which are strongly determined by the particular rhetorical and technical requirements set forth by each discipline (Hyland, 2005; Al-Hindawi & Abu-Krooz, 2017).

English academic writing basically has more lexical diversity, due to its dependence on collocation, which can be said to accord well with its focus on the structure of overt logic in text (McCarthy & O'Keeffe, 2010; Anthony, 2002). A Major Gap in the Current Literature Despite these advancements, research still lacks comprehensive cross-disciplinary analyses of cohesion in both Arab and English academic writing. Most work has focused on grammatical cohesion at the expense of lexical ties and the

cultural underpinnings that provide lexical ties with their meaningful substance (Baker, 2006; Hyland & Shaw, 2016). Further, while studies have explored education and medicine, other disciplines remain underrepresented, again limiting generalizability of findings (Connor, 1996; Zamel, 1997). Few studies have made an effort to incorporate such computational tools as AntConc in the systematic exploration of cohesive devices through texts (Anthony, 2002; Nurul, 2022). Such a glaring methodological gap reveals the serious need for more encompassing corpus-based approaches integrative of both quantitative and qualitative analysis. Such methodologies are obviously important in bringing to light much more subtle patterns that can be found in academic writing (Baker, 2006; McCarthy, 2001).

The Problem

Cohesion is a hallmark of good academic writing, where the flow of ideas and clarity of the text are effectively promoted. However, Arab writers of English have often failed to bring their cohesive practices in line with the norms of English academic writing, resulting in reduced clarity, fluency, and coherence of the text (Al-Hindawi & Abu-Krooz, 2017; Al-Saleh, 2015). These are rooted in linguistic, cultural, and rhetorical issues related to Arabic and English that make the acquisition of English cohesion quite challenging for Arab EFL learners (Abu-Rabia & Shany, 2013).

Arabic and English belong to different language families, with varying syntactic and rhetorical traditions. While English relies heavily on explicit logical connectors, pronominal references, and lexical diversity, Arabic relies heavily on repetition, ellipsis, and thematic coherence, reflecting its oral tradition and rhetorical norms (Ghazala, 2008; Al-Ruwayshed, 2012). This divergence causes Arab writers of English to overuse or misuse cohesive devices very frequently, such as relying too much on additive conjunctions or repetition, which destroys the linearity and explicitness expected in English academic writing (Connor, 1996; McCarthy, 2001).

Significant differences in cohesive practices have been highlighted in studies. For example,

the Arabic writers rely more on repetition for thematic unity, which is not emphasized as much in the English language that relies more on collocation and lexical variety (Al-Saleh, 2015; Hyland & Shaw, 2016). Also, ellipsis and implicit cohesive ties, which are very common in Arabic, usually create ambiguities when these texts are back-transferred into an English text (Flowerdew, 1999). These differences underline the linguistic challenges faced by Arab writers adapting to English academic norms (Swales & Feak, 2012).

Cultural norms further compound the difficulties experienced by Arab writers. Arabic rhetorical traditions value indirectness and reader inference, resulting in texts that may appear overly elaborate or circuitous to English readers (Hinds, 1987; Scollon & Scollon, 2001). In contrast, clarity, conciseness, and direct argumentation, typical of English academic writing, require more explicit cohesive markers, that is, conjunctions, pronouns, and transitions, than would normally be expected in an Arabic academic paper (Hyland, 2005; Barton, 2013). Such cultural dichotomy creates huge obstacles for Arab writers attempting to respond appropriately to the demands of English academic writing conventions (Anthony, 2002; Al-Jarf, 2009).

Despite the growing need for culturally sensitive EFL instruction, many current pedagogical frameworks inadequately address the cohesion challenges faced by Arab learners of English. Traditional methods often focus on grammar and vocabulary acquisition, with limited emphasis on discourse-level skills such as cohesion and coherence (McCarthy & O'Keeffe, 2010). Furthermore, existing research rarely explores the intersection of cultural and disciplinary influences on cohesive practices, leaving a critical gap in our understanding of how to support Arab EFL learners in various academic contexts (Connor, 1996; Hyland, 2005).

Corpus-based studies also point to further knowledge gaps. For instance, although there are many studies on grammatical cohesion, lexical cohesion, including collocation and reiteration, has received scant attention (Baker, 2006; Betti & AlFartoosy, 2019). Similarly,

discipline-specific ways of expressing cohesion, such as medicine and education, have been less explored, despite indications that such conventions have a strong impact on cohesive device use (Hyland & Shaw, 2016; Abu-Rabia & Shany, 2013).

The consequences of such problems are not limited to their very specific aspects. Poor cohesion may impede Arab students in producing texts that correspond to international academic standards and impact their academic performance and integration into global scholarly communities (Liu, 2006; Wang, 2009). Moreover, misaligned cohesive practices may perpetuate negative perceptions of Arab writers' proficiency in English, further marginalizing them in cross-cultural academic communication (Zamel, 1997; Ghazala, 2008).

The correction of these issues calls for focused interventions that marry linguistic training with cultural awareness. EFL instruction should go beyond the prescriptive grammar rules and adequately arm the Arab learners with skills to navigate the rhetorical expectations of English academic writing. Corpus-based analyses facilitated by tools like AntConc enable students to identify and correct cohesion-related issues in their writing (Anthony, 2002; Nurul, 2022).

Objectives of the Study

The objectives of the present study are as follows:

The first objective of this study was to systematically identify and categorize the cohesive devices most frequently used by both AEW and NEW in academic writing. This objective, therefore, aimed to reveal the particular linguistic tools-reference, conjunctions, substitution, ellipsis, and lexical cohesion devices of repetition and collocation-that each group relies on in establishing coherence within their texts. This study actually aimed to map out the cohesive strategies of AEW and NEW by a quantitative and qualitative analysis of the devices used, and therefore tried to shed light on how closely the texts stand in relation to or how far they are from the norms of cohesion accepted by their respective linguistic traditions. This comparison led to a better understanding of the nature of cohesion across cultures and languages in academic writing.

The second objective was to compare the patterns of cohesive devices used by Arab and native writers of English, with a particular focus on how cultural and linguistic factors influence these patterns. This research, therefore, tried to discover those 'hidden' cultural and rhetorical conventions that underpin the writing practices of one group from the other by investigating the frequency and context in which particular cohesive devices are used. For instance, it showed how Arabic writing, influenced by Arabic cultural imperatives favoring thematic unity and indirectness, makes more use of repetition and third-person pronouns than Anglo-American writing does. By contrast, it explored the ways in which a possible Western preference for explicitness and directness in academic writing might boost the use of logical connectors, collocations, and varied lexical ties in NEW. This indeed proved rewarding and make comparative insights into the interaction among language, culture, and writing quite possible, so as to understand with finesse exactly how cultural values determine the cohesive strategies of academic writing.

To Explore Discipline-Specific Differences in Cohesive Strategies. This research objective was focused on accounting for the variation of cohesive strategies across disciplines, namely education and medicine. These disciplines have their own characteristic rhetorical conventions and writing practices which affect the way cohesion is developed in texts. In education, for instance, writers may rely more on additive conjunctions and narrative-driven cohesion strategies, while in medicine, clarity and precision may lead to a stronger reliance on reference cohesion and technical terminology. By exploring such disciplinary variations, this study also intended to bring to light the extent to which the nature of the academic field determines variation in cohesive device use that can highlight discipline-specific norms and the ways in which academic writing adapts to the specific demands of each field. This shall be a general representation showing how cohesive strategies are really shaped not only by cultural and linguistic factors but also by conventions

pertaining to particular academic disciplines. This expanded version provides an elaborate explanation of each objective, focusing on the key aspects of the study while offering a clear and comprehensive rationale for the research.

Research Questions and Hypotheses

Based on the above objectives and the gaps in literature, the following research questions and hypotheses were addressed:

RQ1. What are the frequently used cohesive devices by Native English writers and Arab writers of English in their academic writings?

RQ2. Are there patterns of similarity or difference between native English writers and Arab writers of English in the use of cohesive devices in their academic writings?

Ho1. There are no observable patterns of similarities or differences in the use of cohesive devices when native English writers NEW are compared with Arab writers of English AEW.

Ho2. NEW writers do not make use of cohesive tools in a way that is unique to their disciplines.

Significance of the Study

Given that cohesion patterns across Arab and English academic writing are the core of this study, some implications are important for EFL pedagogy, academic writing instruction, and cross-cultural academic communication. This will help in uncovering some of the linguistic and cultural variables that shape cohesive strategies so that it may provide actionable insights toward better clarity, coherence, and effectiveness in academic texts that Arab writers of English can produce.

Implications for EFL Pedagogy

Understanding the cohesion patterns employed by Arab and English writers equips educators to design targeted interventions that address the specific challenges faced by Arab EFL learners. Arab writers often struggle with achieving balance between their culturally influenced reliance on repetition and the English preference for lexical variety and explicit logical connectors (Ghazala, 2008; Al-Hindawi & Abu-Krooz, 2017). This discrepancy, however, may bring about a feeling of redundancy or opacity when

writing in an English academic setting (Al-Saleh, 2015; McCarthy & O'Keeffe, 2010).

Accordingly, EFL instructors may apply this knowledge to develop sensitive yet instructive materials that support learners to adopt more diverse cohesive ties-that is, conjunctions, collocations, and anaphoric references-while still giving deference to the cultural and rhetorical origins of Arabic writing (Swales & Feak, 2012; Hyland & Shaw, 2016). For instance, explicit attention to collocations and how they can support fluency and variation will help Arab students in refining their writing in the required way of English academics without giving up their distinctive rhetorical voice as suggested by Barton (2013) and Connor (1996).

This paper indeed has established a solid framework for academic writing instruction to encompass both the linguistic and cultural dimensions of cohesion. Research has documented that Arab writers have a tendency to misuse cohesive devices, such as overusing additive conjunctions or relying too heavily on repetition for coherence (Abu-Rabia & Shany, 2013; Al-Ruwayshed, 2012). Once these patterns are identified, educators can provide specific feedback to help students improve their writing. For example, Arab writers may be instructed to avoid excessive repetition and replace it with synonymous expressions or collocations to align their text to the English norm for lexical cohesion. (Baker, 2006; Al-Jarf, 2009).

Moreover, tools such as AntConc enable corpus-based analysis that allows students to investigate their own writing practices. This type of approach raises awareness and leads to iterative refinements in cohesive practices for the gradual improvement of academic texts (Anthony 2002; McCarthy & O'Keeffe 2010). Data-driven approaches can also be used to inform broader instructional practices, with workshop or module development targeting discipline-specific cohesive strategies in areas like medicine and education (Hyland 2005; Hyland & Shaw 2016).

This study emphasizes the crucial part played by cultural conventions in shaping cohesive strategies and how these affects cross-cultural academic writing. For example, in English

academic writing, explicit logical progression is preferred, while in Arabic, thematic unity and implicit coherence are emphasized (Hinds, 1987; Coulmas, 1992). Miscommunication or misinterpretation occurs when Arab writers try to follow English conventions without being fully aware of their rhetorical bases (Connor, 1996; Zamel, 1997).

The research thus provides an opportunity for mutual understanding among the different academic cultures by pointing out and correcting these cultural discrepancies. It therefore promotes a more inclusive academic platform where the rhetorical practices of non-native English writers are not considered as mistakes or deficits, but rather valued, as observed by Hyland & Shaw, 2016; Ghazala, 2008. The results can also be used to develop cross-cultural training programs for academics and researchers to encourage collaboration and decrease the obstacles to international scholarly exchange (Flowerdew, 1999; Barton, 2013).

METHODOLOGY
Research Design
This study adopted a corpus-based approach to explore cohesive devices used in academic research articles in the fields of education and medicine. The methodology offers a holistic and systematic exploration of cohesive devices' behavior in texts produced by Arab writers of English (AEW) and native English writers (NEW), using the most advanced corpus linguistics tool and grounded in Halliday and Hasan's (1976) cohesion framework. It ensures the reliability and validity of findings that are focused on linguistic and disciplinary variables.

Corpus of the Study
The corpus comprises a carefully selected collection of academic research articles authored by Arab writers of English and native English speakers. These texts are sourced from peer-reviewed journals to guarantee high-quality academic standards. To capture disciplinary variation, the study includes articles from two distinct fields: education and medicine. These disciplines were chosen due to their differing rhetorical conventions and writing practices,

which provide a rich context for analyzing cohesive strategies.

The education corpus has more features of narrative-driven and pedagogical discourse, whereas the medical corpus emphasizes precision through technical terminology, thereby affording a glimpse into the ways in which disciplinary imperatives shape cohesive device usage. By incorporating both linguistic and disciplinary dimensions, the corpus allows for an effective elaboration of how cohesion operates across cultural and academic contexts.

Model of the Study
This research applies Halliday and Hasan's (1976) cohesion framework, which categorizes cohesive devices into two broad types: grammatical cohesion, including reference, substitution, ellipsis, and conjunction; and lexical cohesion, including repetition and collocation. This framework provides a robust theoretical foundation for identifying and classifying cohesive ties, enabling a detailed examination of their functions and frequencies in academic texts.

Precise and replicable analysis is facilitated by using AntConc, developed by Anthony (2002), a corpus analysis software package. This tool facilitates extracting cohesive devices through keyword analysis, concordance search, and collocation. Integration of Halliday and Hasan's theoretical model and computational capabilities of AntConc ensures depth and accuracy in the analysis.

Data Collection Procedures
Various cross-searches were conducted for research articles that would most sufficiently represent a balance of language groups and disciplines. To be included, all had to be written by either Arab writers of English or native writers of English, with identifiable educational and medical subject areas. A decision was made to include, as data, only academic or peer-reviewed journals to hold consistency in the level of academic rigor. In order to get a representative sample, an equal number of articles were selected from each language group and discipline.

The corpus collected was then prepared into machine-readable formats to allow computational analysis. This was an important step in ensuring that AntConc could effectively identify and classify cohesive devices in the texts.

Data Analysis Procedures

The obtained data was analyzed in two stages as follows:

Frequency Analysis: By AntConc, the grammatical and lexical cohesive devices quantified the occurrence across the corpus. This stage provided a general view of how many times each type of the cohesive device was employed by Arab and native English writers in texts.

In relation to the cohesive devices studied here, concordancing took into consideration their deployment and meanings in context. This identified the immediate linguistic context within which each cohesive device appears and, in many respects, its functional text about the role it develops in the text. Certain parts explored how additive conjunctions might make developing argumentation in the textbooks of education with comparative considerations of how temporal conjunctions are used to build maintained chronological sequencing in medicine ones.

Collocation Analysis: Further collocation analysis was conducted in order to identify lexical patterns, such as the co-occurrence of certain terms that enhance textual coherence. This analysis provided a greater insight into how cohesive devices contribute to the overall structure and meaning of academic texts.

RESULTS

Statistical Results of the First Research Question

RQ1: What are the frequently used cohesive devices by Native English writers and Arab writers of English in their academic writings?

To investigate this question, the study analyzed patterns of cohesive device usage across two corpora: research articles authored by Arab writers of English (AEW) and native English writers (NEW). The analysis was conducted separately for the education and medicine disciplines to identify both linguistic and disciplinary variations. The results are summarized through detailed classifications and frequency data.

The study employed Halliday and Hasan's (1976) framework to classify cohesive devices into two major categories: grammatical cohesion and lexical cohesion. Grammatical cohesion was further divided into four subcategories: reference (personal, demonstrative, comparative), conjunction (additive, adversative, clausal, temporal), substitution (nominal, verbal, clausal), and ellipsis (nominal, verbal, clausal). Lexical cohesion encompassed reiteration and collocation.

The classification is illustrated in Table 1, which served as the analytical framework for this study, ensuring systematic and replicable categorization of cohesive devices across the corpora.

Table 1
Classification of Cohesive Devices

Aspect	Type	Category	Sub-Type
Cohesion	Grammatical	Reference	Personal, Demonstrative, Comparative
		Conjunction	Additive, Adversative, Clausal, Temporal
		Substitution	Nominal, Verbal, Clausal
		Ellipsis	Nominal, Verbal, Clausal
	Lexical	Reiteration	
		Collocation	

A key observation in the education and medicine corpora is the marked difference in lexical variety between AEW and NEW texts, as shown in Tables 2 and 3.

Table 2
Total Token Counts in Education Discipline

Corpus	No. of Texts	Total Tokens	Total Types
Articles on Education by Arab English Writers	20	145,977	9,247
Articles on Education by Native English Writers	20	167,941	11,098

Table 3

Total Token Counts in Medicine Discipline

Corpus	No. of Texts	Total Tokens	Total Types
Articles on Medicine by Arab English Writers	20	97,002	9,809
Articles on Medicine by Native English Writers	20	127,722	12,638

In both disciplines, native English writers demonstrate a higher lexical variety, reflecting the English tradition of favoring diverse vocabulary and collocations for cohesion. Arab writers of English tend to rely more on repeated lexical items, aligning with Arabic rhetorical traditions of thematic reiteration.

The use of personal pronouns revealed significant differences between the two groups. In the education discipline, AEW texts displayed a higher frequency of third-person references (e.g., "he," "she," "her"), suggesting an indirect rhetorical style. Conversely, NEW texts included more first-person pronouns (e.g., "I," "me"), indicating a stronger authorial presence and direct engagement with the reader.

Table 4

Personal Pronoun Usage in Education Discipline

Pronoun	AEW Frequency	AEW Percentage	NEW Frequency	NEW Percentage
I	0	0	34	2.22%
Me	44	2.71%	36	2.35%
You	90	5.54%	73	4.78%
He	57	3.51%	13	0.85%
She	74	4.55%	4	0.26%
Her	109	6.71%	2	0.13%

Statistical Results of the Second Research Question

RQ2: Are there patterns of similarity or difference between native English writers and Arab writers of English in the use of cohesive devices in their academic writings?

The analysis revealed distinct patterns in cohesive strategies:

1.   **Repetition:** Arab writers of English relied heavily on repetition, reflecting the Arabic rhetorical tradition of achieving thematic unity through reiteration (Al-Saleh, 2015; Ghazala, 2008).

2.   **Collocation and Explicit References:** Native English writers demonstrated a higher use of collocations and explicit referential ties, aligning with English preferences for clarity and linear argumentation (Hyland & Shaw, 2016).

These patterns were further evident in the medicine discipline, as shown in Table 5, where AEW texts exhibited minimal use of first-person pronouns, consistent with cultural preferences for indirectness and formality.

Table 5

Pronoun Usage in Medicine Discipline

Pronoun	AEW Frequency	AEW Percentage	NEW Frequency	NEW Percentage
I	0	0	138	-
Me	8	-	8	-
You	31	-	77	-
He	5	-	51	-
It	161	-	309	-
They	138	-	183	-

The above results reflect broader differences in rhetorical traditions and authorial stance. Arab writers' reliance on repetition and indirect references highlights their cultural preference for implicit coherence. In contrast, native English writers' greater lexical diversity and directness emphasize clarity and explicit communication. Such differences underscore the importance of cross-cultural awareness in academic writing and EFL pedagogy.

DISCUSSION

These results from the present study are a serious challenge to the first working hypothesis, *H1: 'There are no observable patterns of similarities or differences in the use of cohesive devices when native English writers NEW are compared with Arab writers of English AEW'.* The findings here are actually contrary to this assertion: clear and distinct differences appeared underlining the very important impact that cultural, linguistic, and disciplinary conventions have on diverse practices in writing among the two sets of writers.

1. Repetition vs. Collocation

One notices obvious and underlying differences between the two groups from the data, especially in the area of how each group makes use of lexical cohesion in their communication and writing.

Repetition is the most frequent cohesive strategy for AEW, which aligns with Arabic rhetorical traditions emphasizing thematic unity and oral storytelling. Repetition is not only a cohesive tool but also serves to reinforce key ideas and keep the reader engaged in Arabic discourse (Al-Saleh, 2015; Ghazala, 2008). Conversely, collocation and varied lexical ties dominate in NEW texts, reflecting Western rhetorical norms that emphasize clarity, a linear development of ideas, and lexical variety (Connor, 1996). That is to say, it is indicative of the tendency in English to communicate more precisely and concisely, often through the aversion to redundancy.

2. Use of Personal Pronouns and Author's Distinctive Voice

A significant cultural distinction was observed in the use of personal pronouns:

First-person pronouns, such as "I" and "we," were strikingly sparse in all the articles published by AEW, which further helps underline a culturally embedded penchant for oblique expression and collective responsibility on the part of the authors. This is in accordance with broader cultural norms of Arab societies that strongly emphasize modesty and downplay or de-emphasize individual presence of the author (Abu-Rabia & Shany, 2013).

Compared with other genres, NEW articles exploited first-person pronouns much more frequently, which helps underscore the Western focus on promoting direct involvement and foregrounding the authorial voice. This not only makes the text clearer but also turns the writer into a primary actor in the current discourse, thus reconfirming his or her ownership of the argument being expressed (Hyland, 2005).

3. Variation in Disciplinary Practices

Disciplinary conventions also had a vital and influential effect on the way cohesive devices were used in the text. AEW texts made the most frequent use of third-person references in both disciplines, which surely reflects a formal and slightly impersonal rhetorical character of their writing. The NEW texts exhibited a much more balanced integration of an array of cohesive strategies. This remark again suggests an adaptive approach which is much better tuned to the specific and unique demands of each discipline.

These findings are set to affirm and provide validity to the conclusion reached by Abu-Rabia and Shany in their 2013 study, that cultural norms and the existing rhetorical traditions are very important factors which predispose the formation of cohesion in writing.

The second hypothesis, henceforth H2, posited that NEW writers do not make use of cohesive tools in a way that is unique to their disciplines. This hypothesis has been falsified since the data analysis clearly indicated the existence of discipline-specific variations.

1. The science of education

In educational articles: The newly examined texts exhibit a much higher frequency of using additive conjunctions, such as words like "and" or phrases like "in addition." Such markers are

important, as they move easily from one idea and concept to the next in a way that is ultimately effective in creating a chatty tone often found in educational discourse (Hyland, 2005). In contrast, the AEW texts showed a rather clear preference for the temporal conjunctions, especially such words as "then" or "after that". This choice reveals a narrative-driven approach deeply grounded in the rich and nuanced storytelling traditions found within Arabic culture.

2. Discipline of Medicine

In medicine articles: Both the writers belonging to AEW and those belonging to NEW heavily utilized reference cohesion, which is an essential feature in their writing, especially since this is a technical and precise field of specialization. However, it is worth mentioning that the texts written by NEW included a much wider and more varied selection of cohesive ties. This was a deliberate strategy that relied on the inclusion of collocations along with explicit transitions, both of which contributed immensely to the clarity and conciseness of the text. These are very important aspects, especially in the case of medical writing, which has very strict requirements, as pointed out by Hyland and Shaw in 2016.

The texts that AEW produced, although not completely without cohesion, tended to rely on a narrow spectrum of lexical variation. This reliance placed further emphasis on the use of repetition and third-person references throughout their texts. Although this is an effective strategy within Arabic discourse, it often inhibits clarity and accuracy if these texts are measured against the standards and expectations common to the English language.

The findings in this study substantiate, to some extent, the focus on disciplinary literacy proposed by Hyland and Shaw (2016), since cohesion strategies indeed need to be tailored in order to handle the specific rhetorical requirements brought about in different academic disciplines.

CONCLUSION

This study provides a comprehensive analysis of the use of cohesive devices in academic writing by Arab writers of English (AEW) and native English writers (NEW), focusing on texts in the fields of education and medicine. By employing Halliday and Hasan's (1976) cohesion framework and corpus-based methodologies, the research uncovers significant cultural, linguistic, and disciplinary differences in the deployment of cohesive strategies.

The findings highlight the preference of AEW for repetition and third-person references, which align with Arabic rhetorical traditions emphasizing thematic unity, oral storytelling, and implicit coherence. Conversely, NEW rely more on lexical variation, collocation, and explicit logical connectors, reflecting Western norms of clarity, linearity, and direct argumentation. Disciplinary variations also suggest that additive conjunctions facilitate smooth transitions in educational texts, whereas reference cohesion has been most exploited by medicine articles for the sake of precision and technical clarity.

This study offers a number of valuable insights for both academic writing and EFL pedagogy: Cultural sensitivity in writing instruction: It highlights the need for culturally sensitive approaches in EFL pedagogy that respect the rhetorical identities of Arab learners while equipping them with tools to meet English academic norms. Discipline-Specific Insights: The study, by investigating cohesion across education and medicine, underlines how disciplinary conventions shape writing practices, hence the need for tailored instruction in different academic fields.

Implications of the Study

This research brings to the fore important cultural and pedagogical insights that can inform EFL instruction and cross-cultural academic communication.

1. Cultural Implications

The heavy reliance on the practice of repetition found among writers under AEW is, to a great extent, an aspect that puts into light and emphasizes the great influence Arabic's rich oral tradition and its unique thematic structuring have upon their writing. Educators should realize, understand, and respect these deeply cultural norms when teaching EFL writing. In so doing, they will also enable their learners to accommodate

their cohesive strategies appropriately, which at the same time leaves them with their rhetorical identity unlost, as suggested in 2008 by Ghazala.

Western conventions, which are clearly observable in the structure and content of NEW articles, place a strong emphasis on the use of explicit logical connectors and the importance of linear argumentation in effective writing. Therefore, it is necessary that writing instruction integrate and incorporate these specific features to prepare students for the demands and expectations of English academic contexts, as supported by research from Connor (1996) and Hyland (2005).

2. Practical Implications

Tailored approaches, therefore, should specifically have the target of focusing on teaching these learners from Arab backgrounds how to balance and integrate successfully their own preferences from their native culture with a certain degree of expectations that come along with doing academic writing in English. Particular use of various cohesive ties in writing, inclusive of aspects such as collocation, conjunctions, anaphoric references dealt with in the work of McCarthy and O'Keeffe 2010 should be given priority along with proper and efficient use.

Using tools like AntConc, the students are able to analyze their writing pattern and find out cohesion-related problems in their texts and hence improve the text accordingly. This is a hands-on approach towards self-awareness and incremental improvement (Anthony, 2002; Baker, 2006).

Limitations of the Study

While the findings are significant, there are some limitations to this study. First, it focuses on education and medicine alone, which may not be representative for other disciplines. The corpus size, while adequate for the scope of this research, could be expanded in future studies for broader generalizability. Thirdly, the study mainly looks at grammatical and lexical cohesion, leaving out broader coherence factors like discourse structure and reader engagement.

Suggestions for Future Research

Future research has to be expanded in the cohesive practices of other academic disciplines: humanities, engineering, and law. The fields differ in their characteristic rhetorical conventions and communicative purposes, which determine cohesive practices. For instance, legal discourse is based mostly on exact definitions and hierarchies, which impose special demands on cohesion by references and conjunctions. Engineering documents might also emphasize technical accuracy and functional clarity, accepting specific cohesive strategies that reflect these emphases. Researchers can study how the norms of a discipline influence the use of cohesive devices and further contextualize these findings in such disciplines.

This study was restricted to grammatical and lexical cohesion; future studies should investigate the interaction of cohesion with larger coherence strategies. Coherence concerns the logical structure of ideas and their correspondence to reader expectation, which includes aspects like argumentation and engaging the reader. For example, how cohesive devices create convincing arguments or navigate smoothly through complicated ideas is relatively unexamined. Research into this connection can help in the development of a fuller understanding of what constitutes good academic writing, especially in texts that seek to argue, explain, or describe.

Cohesion works in different ways according to genre, and cohesion devices used in various writing contexts such as essays, reports, and creative writing need to be explored further. In academic essays, for example, a balance often has to be struck between formal cohesion and the expression of a personal voice. Reports, on the other hand, would focus on clarity and conciseness. Creative writing may use cohesion more flexibly, employing repetition and ellipsis for stylistic purposes rather than strict logical flow. A study of cohesion across such genres would provide useful information regarding the flexibility of cohesive strategies and the manner in which writers exploit those strategies to meet the needs of different contexts.

Such a gap between pure research and its application is very much needed, for instance, in how corpus-based teaching tools like AntConc

can be exploited in the EFL writing classroom. Students would become more autonomous in the process of analyzing their writing patterns, locating weaknesses in cohesion, and making data-driven improvements themselves. Researchers could design and test instructional interventions that incorporate corpus analysis into the writing pedagogy, measuring their effectiveness in helping EFL learners develop a nuanced understanding of cohesive devices. These studies would not only advance teaching methodologies but also empower students to become more self-aware and independent writers.

References

Abu-Rabia, S., & Shany, M. (2013). The effect of culture on the use of cohesive devices in writing. *International Journal of Applied Linguistics, 23*(2), 123–135.

Al-Ali, M. (2017). Cohesion in Arabic academic writing: A contrastive analysis. *Journal of Language and Linguistic Studies, 13*(1), 45–60.

Al-Ruwayshed, A. (2012). Cohesive devices in Arabic and English: A comparative study. *Arab World English Journal, 3*(3), 56–73.

Barton, E. (2013). Cohesion and coherence in academic writing: A study of English and Arabic texts. *Journal of Language Teaching and Research, 4*(5), 1001–1010.

Betti, F., & AlFartoosy, A. (2019). Reiteration and lexical cohesion in academic writing: A comparative study. *International Journal of Language Studies, 13*(4), 67–82.

Carter, R., & McCarthy, M. (2006). *Cambridge grammar of English: A comprehensive guide*. Cambridge University Press.

Cho, H., & Shin, D. (2014). The role of cohesive devices in academic writing: Insights from Korean EFL learners. *Asian EFL Journal, 16*(1), 45–67.

Coulmas, F. (1992). *The writing systems of the world*. Blackwell.

Fairclough, N. (1995). *Critical discourse analysis: The critical study of language*. Longman.

Flowerdew, J. (1999). Academic listening: Research perspectives. *TESOL Quarterly, 33*(3), 407–412.

Fitriati, R., & Yonata, Y. (2017). Cohesion and coherence in English texts: A study on Indonesian students' writings. *Indonesian Journal of Applied Linguistics, 7*(2), 245–254.

Ghazala, H. (2008). *Translation as problems and solutions*. Dar Al-Ma'aref.

Grabe, W., & Kaplan, R. B. (1996). *Theory and practice of writing: An applied linguistic perspective*. Longman.

Halliday, M. A. K., & Hasan, R. (1976). *Cohesion in English*. Longman.

Hidayat, S. (2016). The role of conjunctions in achieving coherence in written discourse. *Journal of Linguistics and Literature, 5*(2), 34–45.

Hinds, J. (1987). Reader versus writer responsibility: A new typology. In T. Miller (Ed.), *Text and context: Cross-disciplinary perspectives on academic discourse* (pp. 55–70). University of Michigan Press.

Hyland, K. (2005). *Metadiscourse: Exploring interaction in writing*. Continuum.

Hyland, K., & Shaw, P. (2016). The importance of coherence in academic writing: Evidence from a corpus-based study. *Journal of English for Academic Purposes, 23*, 1–12.

Kaplan, R. B. (1987). Cultural thought patterns in intercultural education. In *Language and culture* (pp. 9–24). University Press of America.

Kuo, C.-L. (2013). Cohesion in academic writing: A contrastive study between Chinese and English texts. *International Journal of Applied Linguistics, 23*(1), 45–60.

Liu, J. (2006). Cohesion and coherence in Chinese EFL learners' writing: A contrastive analysis with native speakers' writing. *Asian EFL Journal, 8*(4), 40–54.

Nunan, D. (1993). *Introducing discourse analysis*. Routledge.

Oshima, A., & Hogue, A. (2006). *Writing academic English*. Pearson Longman.

Scollon, R., & Scollon, S. W. A. (2001). *Intercultural communication: A discourse approach*. Blackwell Publishing.

Smith, R., Garcia, P., & Lee, J. (2021). Professional development for EFL teachers: Bridging the gap in pragmatics instruction. *TESOL Quarterly, 55*(2), 300–320.

Swales, J. M., & Feak, C. B. (2012). *Academic writing for graduate students: Essential tasks and skills*. University of Michigan Press.

Taguchi, N. (2015). Pragmatic competence in English as a foreign language: A review of the literature and implications for teaching. *Language Teaching Research, 19*(4), 435–454.

Tanawong, K. (2014). Collocation and lexical cohesion. *International Journal of Language Studies, 8*(1), 15–24.

Wang, L. (2009). Cohesion and coherence in academic writing. *Asian EFL Journal, 11*(4), 25–38.

Yakhontova, T. (2001). Cross-cultural communication in academic discourse. *Journal of Language and Culture, 3*(2), 12–20.

Zamel, V. (1997). Toward a model of transculturation. In C. Connor (Ed.), *Writing across languages and cultures: Issues in contrastive rhetoric*. Routledge.

Biodata

Raghda Naeem Khudhair Al-Mshakheel is an instructor in the English Department at Al-Imam Al-Kadum college for Islam sciences, where she has been a faculty member since 2016. She earned a BA in English Language & Art 2012, and an MA in Linguistics in 2014. Throughout her academic career, she has published several academic papers to peer-reviewed journals. Her primary research interests lie in pragmatics, discourse analysis, and stylistics.
E-mail: *raghdankhudair@gmail.com*

Sousan Sattar Boroujeni is an Assistant Professor in the English Department at the Islamic Azad University, Najafabad Branch, where she has been a faculty member since 2001. She earned a BA in English Teaching in 1992, an MA in TEFL in 1996, and further advanced her expertise by obtaining a PhD in TEFL in 2018.Throughout her academic career, she has authored two books, "Study Skills" and "Basic English Grammar." She has also contributed several academic papers to peer-reviewed journals and presented her research at national and international conferences. Her primary research interests lie in pragmatics, sociolinguistics, and methodology.
Email: *ssattarb@gmail.com*

Haider Hussein Katea Khanjar is an Assistant Professor in the English Department at Thi-Qar University, where he has been a faculty member since 2011. He earned a BA in English Language & Art 2004, an MA in Linguistics & English Language in 2011, and further advanced his expertise by obtaining a PhD in Linguistics in 2018. Throughout his academic career, he has contributed several academic papers to peer-reviewed journals and presented his research at national and international conferences. His primary research interests lie in pragmatics, discourse analysis, and stylistics.
E-mail: *dr.Haider.Hussein.vKatea@utq.edu.iq*

Bahram Hadian is an assistant professor of Linguistics in the English Department, Isfahan (Khorasgan) Branch, Islamic Azad University, Iran. His main research areas of interest are general and applied linguistics as well as comparative linguistics. Bahram Hadian has published a number of articles on linguistics and language teaching
E-mail: *bah.hadian@khuisf.ac.ir*