

## Lexical Bundles in Iranian and International English Proficiency Tests: Reading Sections in Focus

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### Abstract

This study explores the utilization of lexical bundles (LBs) in the reading sections of international English proficiency tests, specifically IELTS and TOEFL, in comparison with Iranian local assessments such as MSRT, TOLIMO, and EPT. The research aims to analyze both the structural and functional categories of these LBs. To facilitate this investigation, two distinct corpora were compiled, consisting of 513,490 tokens from international assessments and 432,252 tokens from local Iranian tests. Utilizing AntConc software for quantitative analysis, the study identified LBs and conducted a qualitative examination of their structural patterns, functional roles, and contextual applications. The findings reveal significant differences between the international and local assessments: 1,030 instances of LBs were identified in the International Corpus (IC), whereas the Local Corpus (LC) contained only 564. Inferential statistical analysis indicated a higher prevalence of discourse organizers and stance bundles in the IC, contrasted with a predominance of referential bundles in the LC. Furthermore, international assessments featured mainly noun-phrase fragments, unlike the Iranian ones that predominantly used prepositional-phrase fragments. Statistical tests, including the Linear-by-Linear Association test ( $p=0.028$ ) and the Chi-square test ( $\chi^2(2)=28.803, p<0.001$ ), confirmed these structural variations, suggesting divergent academic discourse conventions between the corpora. The results underscore the need for revisions in Iranian assessments to align with international standards, potentially enhancing global academic proficiency and fostering greater learner engagement in higher education contexts.

**Keywords:** lexical bundles, English proficiency tests, reading comprehension texts

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## 1. Introduction

The role of vocabulary in determining a text's comprehensibility is long-established (Laufer, 1992; Nation, 2006). Formulaic language, defined as sequences of words retrieved whole from memory rather than generated by grammar rules (Wray, 2002), includes various forms such as chunks, clusters, and especially lexical bundles (LBs). These are defined as frequent sequences of three or more words linked to specific linguistic registers, acting as "extended collocations" (Biber et al., 1999). LBs fulfill diverse discourse roles (Biber et al., 2004), making them crucial for effective communication and comprehension in different contexts. Hyland (2008) characterizes LBs as frequent, contextually essential word sequences that enhance text cohesion and discourse organization.

Formulaic language sequences are essential for both native and second language learners as they simplify the cognitive load of language processing, thereby enhancing fluency and comprehension (Biber et al., 1999; Sidtis & Sidtis, 2018; Wray, 2002). Although LBs may lack complete grammatical structures (Biber et al., 1999), they are instrumental in identifying genre and supporting comprehension (Beng & Keong, 2017; Hyland, 2008). The cognitive advantages of LBs, highlight their utility in practical communication contexts, which can provide insights into more effective educational practices (Siyanova-Chanturia et al., 2011; Tremblay et al., 2011). Formulaic language, particularly LBs, also plays a pivotal role in language learning, enabling learners to process and produce language with greater fluency by drawing on high-frequency word combinations stored in memory as wholes (Bannard & Lieven, 2012; Wood, 2016).

Reading proficiency, on the other hand, is a cornerstone of academic success, especially for language (here English) learners (Goodwin et al., 2015), and is vital for school admissions (Oliver et al., 2012). In the context of reading comprehension also, multi-word phrases, such as LBs, enhance learners' fluency which in turn aids in reading comprehension efficiency (Wray, 2002). Recent scholarship underscores the impact of formulaic language, particularly LBs, on enhancing reading understandability (Allan, 2016; McGarrell & Nguyen, 2017; Wray, 2002).

To effectively evaluate reading skills, comprehensive assessments have been developed, focusing on key areas such as vocabulary, semantic understanding, discourse structures, and fluency (Harding et al., 2015; Yang & Qian, 2017). Within these evaluations, LBs emerge as pivotal elements, serving both as indicators of language proficiency and tools for language acquisition. As integral components of language with multiple functions, LBs act as connectors in communication, aid in presenting and organizing content, assist in evaluating ideas, and engage audiences effectively. This multifaceted role in facilitating communication makes LBs a fundamental part of reading skill assessments. Furthermore, research findings have highlighted the critical function of LBs in accelerating language processing, which reinforces their value within these assessments (Biber & Barbieri, 2007; Biber et al., 2004; Hyland, 2008; Lasmita et al., 2023; Tremblay et al., 2011).

By recognizing the significance of LBs, educators and researchers can better harness their potential in enhancing language learning and assessment.

In the context of global English proficiency tests, such as the Test of English as a Foreign Language (TOEFL) and the International English Language Testing System (IELTS), the significance of these assessments in academic and professional realms cannot be overstated. Research highlights the substantial impact these tests have on employment prospects and individual learning trajectories particularly for international students who rely on these assessments to gauge their readiness for academic success in English-speaking settings (Adebola et al., 2020; Hung & Huang, 2019; Martirosyan et al., 2015; Wang, 2022). In addition to these global assessments, various English as a Foreign Language (EFL) countries implement national proficiency exams tailored to local educational contexts. In Iran, for example, national tests such as the MSRT, TOLIMO, and EPT are administered primarily to gauge students' readiness for academia, including PhD candidates. These assessments evaluate reading comprehension, grammar, and listening skills, reflecting the structure of TOEFL while aligning with local academic standards (Ghorbani, 2012; Heydari et al., 2014).

While considerable research has explored LBs in speaking and writing contexts, where they enhance fluency and coherence (e.g., Biber et al., 2004; Cortes, 2004; Gledhill, 2000; Hyland, 2008; Nesselhauf, 2005; Wray, 2002), the role of LBs in reading comprehension remains significant yet underexplored. Examining the frequency and functional distribution of LBs in proficiency tests provides educators with valuable insights into which language features are prioritized, facilitating the alignment of instructional methods with both local and international standards.

Additionally, the comparative analysis of LBs in international proficiency tests such as IELTS and TOEFL, alongside local Iranian exams like TOLIMO, MSRT, and EPT, is vital for enhancing our understanding of language assessment, particularly in the domain of reading comprehension. By scrutinizing these LBs, we can evaluate how effectively these examinations prepare candidates for academic tasks that demand proficient reading skills. Such comparative studies are essential for assessing the validity of Iranian tests and their ability to reflect the competencies necessary for success in English-speaking contexts. Ultimately, a deeper understanding of these lexical patterns enriches our comprehension of language proficiency testing and informs the refinement of educational practices. This ensures the establishment of an effective educational framework that aligns assessment criteria with real-world language applications. This paper presents a contrastive study of the use of LBs in the reading sections of both international (i.e., IELTS and TOEFL) and local Iranian (MSRT, TOLIMO, and EPT) proficiency tests, highlighting significant implications for language education and assessment in the Iranian EFL context. Specifically, this study investigates the following research questions:

**RQ1:** What lexical bundles are frequently used in the reading section of international (TOEFL, and IELTS) and Iranian local (MSRT, TOLIMO, and EPT) tests?

**RQ2:** Is there a significant difference in the distribution of lexical bundles' structural categories (i.e., verb-phrase, prepositional-phrase, and noun-phrase fragments) used in the reading comprehension texts of international versus Iranian English proficiency tests?

**RQ3:** Is there a significant difference in the distribution of lexical bundles' functional categories (i.e., discourse organizers, stance bundles, and referential bundles) used in the reading comprehension texts of international versus Iranian English proficiency tests?

## 2. Literature Review and Theoretical Framework

### 2.1. Literature Review

In educational settings, LBs form a substantial component of language learning materials. Allan (2016) noted that these bundles constitute a significant portion of self-study book content, reflecting their role in language acquisition. However, studies indicate discrepancies between the LBs taught through educational materials like English for Academic Purposes (EAP) textbooks and those prevalent in actual academic texts (Wood, 2010; Wood & Appel, 2014), suggesting a need for instructional materials that more closely align with the authentic language demands of academic discourse. Resources such as the Academic Formulas List (AFL) address this by providing a compendium of frequently used academic formulaic sequences, assisting non-native speakers in navigating academic texts more effectively (Simpson-Vlach & Ellis, 2010).

The integration of LBs into academic writing is recognized for its benefits in ensuring text clarity and coherence across diverse academic disciplines. Extensive research identifies the prevalence and function of LBs in enhancing the quality of academic writing by providing structural coherence and facilitating the conveyance of complex ideas (Farhang-Ju et al., 2024; Qi & Pan, 2020; Ren, 2021). Such insights are crucial for the development of pedagogical strategies aimed at improving students' writing proficiency by emphasizing the instructional value of these linguistic patterns.

The role of LBs extends to standardized testing contexts, such as the TOEFL and IELTS, where they significantly influence test-taker performance. Research into the use of LBs by non-native writers in tests underscores the reliance on formulaic sequences to convey stance and organize discourse (Li et al., 2023). This has important implications for language instructors, highlighting the necessity of teaching effective bundle usage to improve test performance and linguistic competence.

Similarly, evaluations of national English proficiency tests reveal important findings regarding lexical bundle usage. For instance, analysis of Korea's College Scholastic Ability Test (CSAT), and Japan's Common Test for University Admissions highlights differences in bundle usage between written and spoken language contexts, offering insights into the design and evaluation of high-stakes language assessments (Mikajiri, 2024; Odo, 2023). These studies underscore the relevance of LBs as tools for assessing and improving language proficiency.

Research has also focused on bridging the gap between test and teaching material design, addressing lexical and cognitive demands across various test sections; Notably, studies on the TOEFL have identified differences in vocabulary load between reading and listening sections, highlighting the need for test design adjustments to better reflect authentic language use (Kaneko, 2023; Staples et al., 2018). Comparably, the nuances of MSRT and TOLIMO tests in Iran have been explored, highlighting the tests' structural validity and content alignment with real-world language use (Heydari et al., 2014; Khodi et al., 2024).

Despite substantial research on individual English proficiency tests, a critical gap remains in understanding the specificities of LBs within their reading comprehension segments. There is a conspicuous paucity of research detailing the alignment of LBs specified in Iranian tests, such as MSRT and TOLIMO, with those in globally recognized assessments, like IELTS and TOEFL. For Iranian learners, a deeper understanding of LBs can significantly enhance reading comprehension skills, helping them become not only exam-ready but also capable of tackling real-world communicative challenges. By familiarizing students with the types of LBs prevalent in both local Iranian and international tests, educators can enhance students' readiness for various language contexts, thus improving their academic and professional prospects.

The present study specifically focuses on comparing the use of LBs in the reading sections of international versus local Iranian English proficiency tests. The findings of this study could provide educators with a valuable resource for refining teaching methodologies, particularly in relation to lexical bundles. By aligning instructional strategies with the linguistic features emphasized in these assessments, educators can enhance vocabulary instruction and better align curriculum design with the demands of proficiency tests. In a broader sense, this study aims to contribute to a more cohesive educational framework by synchronizing reading comprehension instruction with assessment requirements.

## ***2.2. Theoretical Framework***

LBs, defined as frequently occurring sequences of three or more words, are identified using corpus-based methods, highlighting their significance within specific linguistic contexts (Wood & Appel, 2014). The foundational framework by Biber et al. (1999) categorizes these bundles into **structural** and **functional** classes.

Structurally, LBs can be classified into *noun phrase fragments*, *prepositional phrase fragments*, and *verb phrase fragments*, each serving distinct roles in text comprehension (see

Table 1). For example, noun phrase fragments (e.g., “*the majority of studies*”) help readers identify key concepts and establish context. Prepositional phrase fragments (e.g., “*in the context of*”) guide readers in connecting arguments and evidence. Verb phrase fragments (e.g., “*is concerned with*”) inform readers about the intent and scope of discussions.

Table 1

*Structural Classification of LBs*

Categories	Subcategories	Examples
Noun Phrase (NP)-Based Bundles	Noun phrase containing an “of” fragment	the beginning of
	Noun phrase with a different type of post-modifier fragment	the fact that
Prepositional Phrase (PP)-Based Bundles	Additional noun phrase fragment	the key to
	Prepositional phrase that includes an embedded “of” phrase	in light of
Verb Phrase (VP)-Based Bundles	Other types of prepositional phrase fragments	according to the
	Verb phrase-based copula “be” followed by a noun or adjective phrase	are likely to
	Featuring an active verb	need to be
	Anticipatory “it” followed by a verb or adjective phrase	it would be
	Passive verb combined with a prepositional phrase fragment	known as the
	Verb phrase followed by a “that” clause fragment	suggests that the
	Pronoun or noun phrase followed by “be”	the results were
	“To” clause fragment	to ensure that
Numerical and Other Phrase Bundles	Other types of verb phrase fragments	there are many
	Number with an embedded “of” phrase	one of the
Others	Number without an embedded “of” phrase	a lot of
		as well as

Adopted from Biber et al. (1999)

Biber et al. (2004; 1999) categorize lexical bundles (LBs) into three functional classes: **stance expressions**, **discourse organizers**, and **referential expressions** (see Table 2). Stance expressions, such as “*it is important to note*” or “*the fact that,*” convey the writer’s attitude or position regarding the content, often reflecting the level of certainty or emphasis. Discourse organizers, exemplified by phrases like “*on the other hand,*” or “*in other words,*” help structure the text by signaling shifts in topics, contrasting ideas, or providing elaboration, thereby clarifying logical connections. Referential expressions, such as “*this study*” or “*one of the,*” serve to identify entities or attributes, offering specific references that enhance the coherence of the text by connecting various elements within the discourse.

Table 2

*Functional Classification of LBs*

Categories	Subcategories	Examples
Stance expressions	Epistemic stance	the fact that
	Attitudinal/modality stance	are able to
Discourse organizers	Topic introduction/focus	there was a
	Topic elaboration/clarification	in other words
Referential expressions	Identification/focus	one of the
	Imprecision	and so on
	Specification of attributes	a number of
	Time/place/text reference	over the past

Adopted from Biber et al. (2004)

The active recognition of LBs' structural and functional aspects can significantly enhance a learner's ability to understand and interpret complex texts (Biber & Barbieri, 2007). Understanding these aspects can improve learners' ability to navigate complex sentences, follow argumentative flows, and grasp underlying meanings (Cortes, 2004; Hyland, 2008). Integrating lexical bundle awareness into reading strategies and aligning teaching practices with these linguistic features can lead to more effective comprehension strategies for learners and improve instructional practices for educators (Byrd & Coxhead, 2010).

The classifications proposed by Biber et al. (2004; 1999) play a crucial role in the present study by providing a foundation for categorizing the frequent multi-word units identified in reading comprehension corpora. These classifications offer valuable insights into both the structural patterns and functional dimensions of lexical use within this specific context.

## 4. Method

### 4.1. Design and Instruments

This study utilized a corpus-driven, mixed-methods approach to explore LBs in the reading sections of both local Iranian and international English proficiency tests. Two corpora were analyzed: the Iranian National Corpus (LC), consisting of reading sections from MSRT, TOLIMO, and EPT tests, and the International Corpus (IC), which included reading passages from IELTS and TOEFL exams. These corpora were selected for their comparability in structure and content, adhering to academic norms for corpus construction. The corpus size was balanced across both corpora, with the LC containing approximately 432,000 words from 200 texts and the IC comprising around 500,000 words from 250 texts, all spanning materials from the past two decades. AntConc software (Anthony, 2024) was employed to identify and categorize four-word LBs based on frequency, range, and length. The methodology combined both qualitative and quantitative analyses: qualitative analysis involved manual categorization of LBs, while quantitative analysis applied pairwise likelihood tests to compare LB frequencies across the corpora. This dual approach aimed to address the study's three research questions, specifically focusing on the differences in LB use between the local and international test materials.

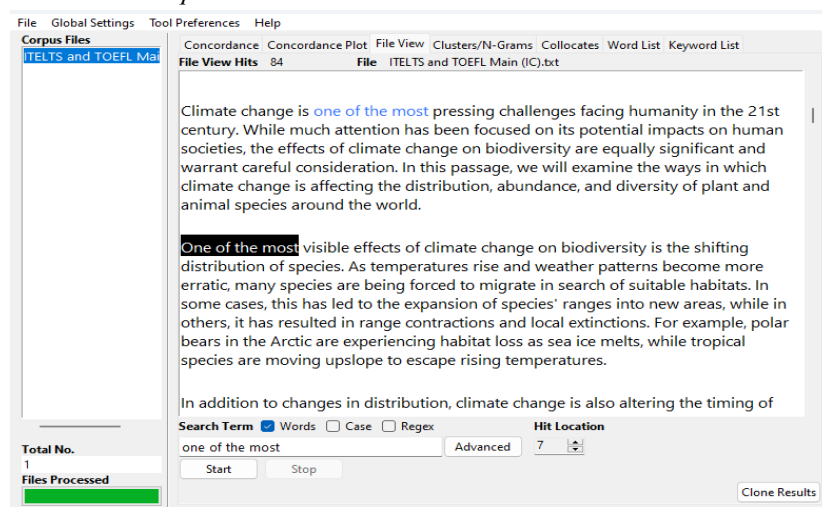
Due to the scarcity of authentic international tests, particularly for TOEFL, reading passages were mainly sourced from textbooks that closely mirrored recent exam formats, with validation from institutions such as the British Council or Cambridge English for Speakers of Other Languages (ESOL). While IELTS materials were readily accessible, TOEFL materials required careful selection to ensure their validity. For the LC, the Iranian corpus was assembled from reputable websites like [kerayechian.com](http://kerayechian.com) and [fastzaban.com](http://fastzaban.com), which provided MSRT, TOLIMO, and EPT tests. Additional sources were included to balance word counts across the corpora and avoid potential biases, in line with established research practices (Chen & Sheehan, 2015; Liu et al., 2023). Detailed lists of the materials used in both corpora are provided in Appendices I and II.



To identify and analyze the four-word LBs in both corpora, AntConc's Clusters/N-Grams, Concordance, and File View functions were used. The Clusters/N-Grams tool was used to identify bundles based on their frequency and range, while the Concordance function provided contextual insights into how these bundles were used in specific contexts. Finally, the File View feature enabled a functional analysis of these bundles across the corpora, providing a deeper understanding of their role in reading comprehension materials, as illustrated in Figure 1.

**Figure 1**

*File View Example of the Lexical Bundle “one of the most” in the IC.*



## 4.2. Procedure

### 4.2.1. Corpora Compilation and Preparation

The corpora were compiled from official test materials, converted from PDF to DOCX formats, and preprocessed to ensure consistency and accuracy for reliable LB analysis. The most frequent LBs were categorized into structural and functional types and analyzed quantitatively and qualitatively. Although the corpora focus on specific test contexts, they provide a targeted dataset for studying test-related lexical features. Minor differences in corpus sizes were considered to ensure the findings accurately represent language use across the exams.

Texts for the IC and the LC were sourced from official materials covering a range of topics. Many Iranian resources, available only as PDFs, were converted to DOCX using ABBYY PDF Transformer+, with post-conversion reviews to correct misrecognized words and ensure sentence alignment. Manual correction of OCR errors (e.g., “s” misread as “5”) ensured dataset uniformity. Finally, all files were standardized to UTF-8 encoding to resolve issues with special characters.

AntConc supported both the quantitative and qualitative analysis of LBs. The process involved using the software's N-Grams function for frequency lists, the Concordance function for context exploration, and the Concordance Plot function for dispersion analysis across the corpora.



Manual post-AntConc analysis was used to check bundle frequency outliers, addressing false positives like misrecognized numerical bundles or possessive cases, ensuring accurate lexical bundle sets.

Corpus size for bundle analysis was determined based on established frequency guidelines (10–40 occurrences per million words) and distribution criteria across texts (Biber et al., 2004; Hyland, 2008). These guidelines ensured the accurate identification of four-word bundles, chosen for their prominence in discourse (Cortes, 2004). Bundles were selected if they appeared at least 10 times per corpus and were evenly distributed across different texts, confirming their reliability (Hyland, 2008). Concordance plots were then used to verify their consistent appearance across various sections of the corpus (see examples in Figure 2 and Figure 3). Using these criteria, two bundle lists were generated, analyzed, and categorized using Biber et al.’s (2004) framework.

Figure 2

*Lexical Bundle Identification in Antconc Based on Frequency*

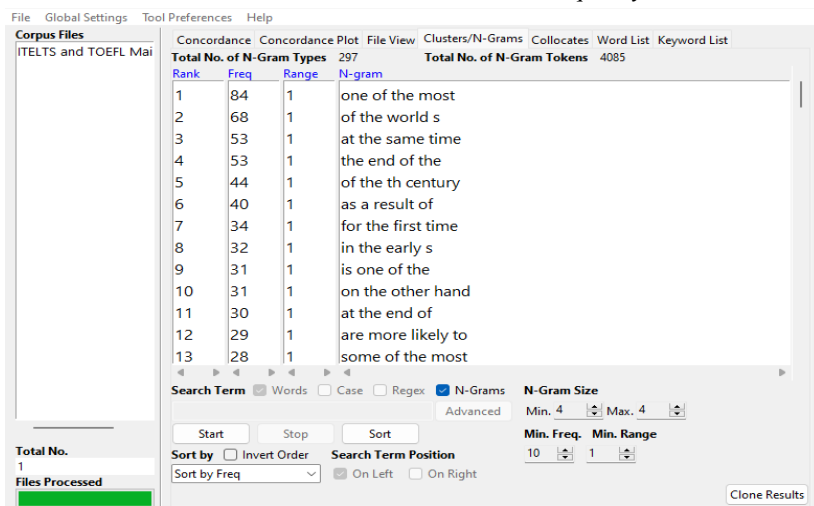
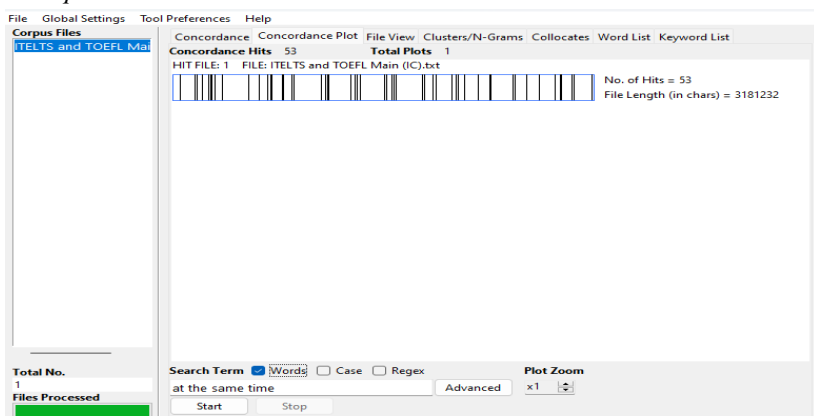


Figure 3

*Example Concordance Plot for “at the Same Time”*



### *4.2.2. Inferential Analyses Procedure*

To assess the inferential significance of observed patterns in lexical bundle distribution, inferential statistical tests were performed using SPSS version 28. Initially, a Chi-square test of independence was applied to examine the relationship between the corpus type (IC vs. LC) and the functional categories of LBs. This test is suitable for categorical data and was selected based on the assumption that expected frequencies in each cell of the contingency table were sufficiently large, with no cell having an expected count of less than 5, as recommended by Field (2024). The Chi-square test is appropriate here due to its ability to evaluate the independence of variables in large samples. For structural categories, a similar Chi-square test was employed to analyze the distribution of verb-phrase, prepositional-phrase, and noun-phrase fragments across the two corpora. This test facilitates the comparison of proportions between categories, allowing for an understanding of how these structural categories are distributed across the corpora. All tests were evaluated at an alpha level of 0.05, and the results were interpreted based on the corresponding p-values.

## 5. Results

### *5.1. Descriptive Analysis of the Data*

This section explores the first research question, i.e., “**RQ1:** What lexical bundles are frequently used in the reading sections of international (TOEFL and IELTS) and Iranian local (MSRT, TOLIMO, and EPT) tests?” By analyzing the presence and categorization of these lexical bundles, we aim to uncover distinctive usage patterns within each test type. The bundles are classified based on structural and functional criteria, providing a nuanced view of their roles in different corpora. For a detailed list of these categories, refer to Appendices III to VI.

**International Corpus (IC):** The IC, sourced from the reading passages of IELTS and TOEFL tests, contains 513,490 word tokens. Within this corpus, 43 specific LBs were identified (i.e., LBs type frequency), comprising 4,120 tokens and accounting for approximately 0.80% of the total corpus.

**Local Corpus (LC):** The LC features 432,252 word tokens from Iranian English proficiency tests. Analysis identified 29 unique LBs, consisting of 2,256 tokens, which represent approximately 0.52% of the corpus. By comparison, the LBs in the IC and LC appear at 0.80% and 0.52% of each respective corpus.

The LBs in the present study were classified under the taxonomy established by Biber et al. (2004; 1999) into verb-phrase fragments, noun-phrase fragments, prepositional-phrase fragments, and miscellaneous fragments. They were further categorized based on their pragmatic functions, which included stance expressions, discourse organizers, and referential expressions. This dual approach facilitated a comprehensive understanding of the functions of these bundles in texts. The

structural and functional analyses of IC and LC's categories are summarized in the following Tables 3 and 4.

**Table 3**

*Summary of Structural and Functional Analysis of the International Tests Corpus (IC) Categories*

Category Type	Category Subtype	Example Phrases	Frequency	Function/Application
<b>Structural Categories</b>	Noun Phrase Fragments	“One of the most”	84	Emphasizes comparison and creates thematic emphasis
	Prepositional Phrase Fragments	“At the same time,” “The end of the”	53	Signals temporal or simultaneous relationships, e.g., “These inventions were made at the same time as the pneumatic drill came into general use.” (IC)
	Verb-Phrase Fragments	“Are more likely to,” “Will be able to”	27, 17	Highlights complex linguistic structures
	Other Fragments	“As a result of,” “As well as the”	39, 26	Contributes to the corpus's textual variety
<b>Functional Categories</b>	Referential Expressions	“One of the most”	84	References previously mentioned ideas, e.g.,
	Discourse Organizers	“On the other hand”	31	Indicates shifts in topics or perspectives
	Stance Bundles	“As a result of”	39	Expresses opinions or perspectives, e.g., “It is commonly believed that people yawn as a result of being sleepy or tired because they need oxygen.” (IC)

**Table 4**

*Summary of Structural and Functional Analysis of the Local Tests Corpus (LC) Categories*

Category Type	Category Subtype	Example Phrases	Frequency	Function/Application
<b>Structural Categories</b>	Prepositional-Phrase Fragments	“At the beginning of,” “At the same time”	24, 23	Indicates spatial, temporal, or logical relationships, highlighting reliance on syntactic constructs
	Noun-Phrase Fragments	“The end of the,” “The beginning of the”	30, 20	Used in defining temporal boundaries
	Verb-Phrase Fragments	“Are more likely to”	24	Indicates actions or probabilities
	Other Fragments	“As well as the”	28	Contributes to textual coherence by introducing additional information
<b>Functional Categories</b>	Discourse Organizers	“On the other hand”	19	Provides a framework for contrasting ideas within a text
	Stance Bundles	“It is important to,” “Are more likely to”	24	Expresses attitudes
	Referential Expressions	“One of the most”	29	Emphasizes clarity and coherence

## 5.2. Descriptive Comparisons

The comparative analysis revealed that the IC featured a higher overall frequency of LBs (1,030) compared to the LC (564). The detailed breakdown of LBs in the IC versus the LC is summarized in Tables 5 and 6. The comparison between these tables indicates that IC tests feature a significantly higher frequency of LBs across both structural and functional categories compared to LC tests. Structurally, the IC particularly emphasizes noun-phrase fragments, while functionally, it excels in discourse organizers and referential expressions. Shared expressions like “one of the most” appear in both contexts; yet, the IC presents greater diversity, reflecting a wider thematic range in international assessments than local ones. However, it awaits further inferential analyses.

**Table 5**

*Descriptive Comparison of LBs' Structural Categories IC vs. LC*

Structural Category Type	IC Frequency	LC Frequency	Most Frequent LBs in IC	Frequency in IC	Most Frequent LBs in LC	Frequency in LC
Overall Frequency of LBs	1,014	564				
Verb-Phrase Fragments	146	104	“are more likely to”	27	” as well as the”	28
Prepositional Phrase Fragments	344	197	“At the same time”	53	“One of the most”	29
Noun-Phrase Fragments	357	180	“One of the most”	84	” the end of the”	30
Other Fragments	167	83				

**Table 6**

*Descriptive Comparison of LBs' Functional Categories IC vs. LC*

Functional Category Type	IC Frequency	LC Frequency	Most Frequent LBs in IC	Frequency in IC	Most Frequent LBs in LC	Frequency in LC
Overall Frequency of LBs	1,030	564				
Discourse Organizers	112	19	“as a result of”	39	“as well as the”	28
Stance Bundles	225	147	“at the same time”	53	“one of the most”	29
Referential Expressions	677	398	“The end of the”	53	“the end of the”	30
Discussion-Specific Bundles	0	0	“one of the most”	84	–	–

## 6. Inferential Analysis

This section examines the differences in the structural and functional categories of lexical bundles used in the reading sections of international and Iranian English proficiency tests, addressing Research Questions 2 and 3. Comprehensive analyses were conducted using SPSS statistical software to identify these disparities.

**Restating Research Question 2 (Structural Distribution Analysis): RQ2-** Is there a significant difference in the distribution of lexical bundles' structural categories (i.e., verb-phrase,

prepositional-phrase, and noun-phrase fragments) used in the reading comprehension texts of international versus Iranian English proficiency tests?

For the structural categorization, the analysis focused on verb-phrase, prepositional-phrase, and noun-phrase fragments. A Pearson Chi-square test revealed no statistically significant difference in their distribution across international and Iranian corpora ( $\chi^2(3)=5.700$ ,  $p=0.127$ ). Despite this, the Linear-by-Linear Association test ( $p=0.028$ ) indicated a trend of systematic variation. The IC showed a higher frequency of noun-phrase fragments with examples like “One of the most” (84 occurrences) and “the end of” (53 occurrences), while the LC contained phrases such as “the end of the” (30 occurrences) and “a member of the” (19 occurrences). The effect size (Cramer’s  $V=0.060$ ,  $p=0.127$ ) suggests that these structural differences are not substantial (see Table 7).

**Table 7**

*Results of the Chi-Square Tests for Structural Comparison*

	Chi-Square Tests		
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	5.700 <sup>a</sup>	3	.127
Likelihood Ratio	5.640	3	.131
Linear-by-Linear Association	4.816	1	.028
N of Valid Cases	1578		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 89.35.

**Restating Research Question 3 (Functional Distribution Analysis): RQ3-** Is there a significant difference in the distribution of lexical bundles’ functional categories (i.e., discourse organizers, stance bundles, and referential bundles) used in the reading comprehension texts of international versus Iranian English proficiency tests?

In the functional categorization, discourse organizers, stance bundles, and referential bundles were examined. A Chi-square test identified a significant difference between the corpora ( $\chi^2(2)=28.803$ ,  $p<0.001$ ). The LC showed a strong preference for referential bundles (70.6%) compared to the IC (66.8%). Conversely, discourse organizers were significantly less frequent in the LC (3.4%) compared to the IC (11.0%). The LC frequently used phrases like “one of the most” (29 occurrences) and “the end of the” (30 occurrences), reflecting a focus on clear referencing and detailed explanations. In contrast, the IC displayed a balanced utilization of functional categories, with prominent use of discourse organizers such as “on the other hand” (31 occurrences) to facilitate topic shifts and contrasting ideas. The effect size (Cramer’s  $V = 0.135$ ) indicates a meaningful divergence in functional use, highlighting different pedagogical priorities and rhetorical styles between the corpora (See Table 8).

**Table 8***Results of the Chi-Square Tests for Functional Comparison*

	Chi-Square Tests		
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	28.803 <sup>a</sup>	2	.000
Likelihood Ratio	32.733	2	.000
Linear-by-Linear Association	11.743	1	.001
N of Valid Cases	1578		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 46.82.

Overall, these findings reflect the LC's tendency to emphasize clarity and specificity, while the IC employs a broader array of discourse strategies, emphasizing topic contrasts and transitions. These insights reveal distinct linguistic preferences and pedagogical objectives inherent in the Iranian versus internationally recognized English proficiency assessments.

## 7. Discussion and Conclusions

The findings of the present study suggest that LBs serve as indicators of academic proficiency, supporting Hyland's (2008) assertion that their use reflects the conventions of academic discourse. Notably, the increased frequency of *stance expressions* in international assessments indicates that these tests evaluate not only language proficiency but also critical engagement with content—an essential skill in higher education. This observation is further supported by the inferential analysis, which revealed a significant difference in the functional distribution of LBs ( $\chi^2(2)=28.803, p<0.001$ ), highlighting the greater prevalence of *stance* bundles in the IC compared to the LC.

Additionally, the presence of discourse organizers in international tests underscores the coherence and cohesiveness inherent in these texts. As Swales (1990) emphasized, a well-defined organizational structure is crucial for guiding readers through intricate arguments. The data suggest that Iranian tests could benefit from incorporating more discourse organizers, which could significantly enhance the clarity and logical flow of texts. Such enhancements could better prepare learners for the rigorous demands of academic discourse. The inferential analysis also identified a statistically significant difference in the use of discourse organizers between the two corpora ( $\chi^2(2)=28.803, p<0.001$ ), reinforcing their importance in structuring academic arguments.

Regarding Iranian evaluations, particularly the MSRT, developing a testing framework more attuned to LBs could enhance test design. Although LBs may not directly impact scoring, they play a vital role in differentiating proficiency levels, given the variations in bundle complexity and frequency (Bachman, 2000; Khalilzadeh & Khodi, 2021). The absence of significant structural differences ( $\chi^2(3)=5.700, p=0.127$ ) in the structural distribution of LBs suggests that while the structure of the two corpora is relatively similar, functional distribution differences (as shown in the inferential analysis) are more pronounced.

This study is grounded in the theoretical frameworks established by Biber et al. (2004; 1999) and Hyland (2008), whose investigations into LBs in academic discourse provided a basis for interpreting the results. Their research highlighted that LBs vary significantly between international and local contexts, carrying important implications for both test design and language instruction.

Furthermore, considerations of fairness and bias reduction are crucial in test design. The integration of LBs can help mitigate biases by offering contextually rich examples of language use, thus promoting fairness for all test-takers (Bloom & Markson, 1998). Tests that incorporate authentic language use—illustrated through LBs—better reflect real-world language than isolated grammar or vocabulary items (Farhady et al., 1994; Ghorbani, 2012). This aligns with the study's findings, where the IC uses a broader variety of LBs, emphasizing complex and formulaic structures common in global academic discourse, whereas Iranian tests use them less frequently.

### 7.1. Comparative Analysis of Language Tests

The Common Test for University Admissions in Japan, examined by Mikajiri (2024), provides a relevant comparison. Similar to the MSRT, this test is local and evaluates English proficiency through its reading and listening components. Consistent with the findings of the current study, Mikajiri identified distinct patterns of LB use, with a higher prevalence in written texts, aligning with academic discourse conventions. These results suggest a comparable distribution of LBs in Iranian assessments, where *referential* bundles like “as a result of” and “the importance of” were more common. The inferential analysis confirmed this finding, revealing significant functional differences between the two corpora: the LC uses more *referential* bundles, while the IC utilizes more discourse organizers and stance bundles.

In both international and local contexts, *stance* expressions, though less frequent than *referential* bundles, play a significant role in communication by reflecting the speaker or writer's viewpoint (Biber et al., 2004). The frequency of *stance* expressions in the Iranian MSRT test indicates a greater emphasis on interpretation, suggesting a focus on understanding perspectives rather than solely content comprehension. This finding was corroborated by the inferential analysis, which revealed a higher proportion of *stance* bundles in the IC compared to the LC.

Similarly, the investigation of LBs in the Chinese National Matriculation Entrance Test (NMET) by Wang et al. (2023) aligns with the findings of the current study. Both studies observed that international assessments, such as the IELTS, utilize more noun phrase (NP) and prepositional phrase (PP)-based bundles compared to local counterparts. The comparatively lower frequency of LBs in Iranian tests suggests that test design and audience expectations significantly influence linguistic complexity. This trend highlights the necessity of exposing learners to a broader range of LBs within local examinations.



## 8. Implications and Future Directions

The findings indicate the need to incorporate a wider variety of LBs in Iranian educational settings to better prepare students for academic reading and participation in global academic discourse. Emphasizing discourse organization, in particular, could significantly enhance students' abilities to navigate complex texts. By adopting tailored language instruction approaches integrating these insights, improvements in both test design and language education in Iran are possible. The inferential analysis underscores this, demonstrating significant differences in the use of discourse organizers and stance bundles between the two corpora.

Future research could explore the effects of various types of LBs on test-taker performance across different proficiency levels. Investigating whether *stance* or *referential* bundles offer greater benefits to lower-proficiency learners could illuminate the role of these structures in comprehension and production. Additionally, examining the cognitive processing of LBs during assessments could enhance understanding of their contributions to fluency and performance. Longitudinal studies could assess whether explicit instruction in LBs correlates with improved test outcomes.

Finally, expanding the analysis to include phrase frames within reading comprehension texts could offer deeper insights into the use of formulaic language in testing contexts. Comparative studies across different test sections, such as listening and writing, could further elucidate how LBs operate in various contexts and their contributions to language proficiency.

In conclusion, this study highlights the importance of recognizing LB usage in diverse educational contexts. Incorporating a broader array of LBs, especially discourse organizers, in Iranian assessments could enhance students' academic writing capabilities and align test content more closely with global academic standards. The observed disparities in bundle usage between international and local assessments emphasize the need for curricular reforms that address the linguistic demands of higher education.

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## Appendices

### Appendix I

#### The sources included in the international tests corpus (IC) consist of

- Official Guide to the TOEFL iBT Test, Sixth edition (ETS, 2020)
- Official Guide to the TOEFL Test, 4th Edition (ETS, 2012)
- The Official Guide to the New TOEFL iBT (ETS, 2008)
- The Official Guide to the TOEFL iBT with CD-ROM, Third Edition (ETS, 2009)
- The Official Guide to the TOEFL® Test, 5th Edition (ETS, 2017)
- Official TOEFL iBT Tests Volume 2, Third edition (ETS, 2020c)
- Official TOEFL iBT Tests Volume 2, Second edition (ETS, 2018)
- Official TOEFL iBT® Tests Volume 1, 2nd Edition (ETS, 2015)
- The website [www.ets.org/toefl](http://www.ets.org/toefl), which offers the TOEFL Practice Online, the official practice test that provides a simulation of the real TOEFL iBT testing experience.
- The sources of IELTS include:
  - “Official IELTS Practice Materials” (IELTS, 2009) by IELTS International
  - “The Official Cambridge Guide to IELTS for Academic & General Training” (Cullen, French, & Jakeman, 2014) published by Cambridge University Press
  - “IELTS: With Downloadable Audio” by Lougheed (2019) from Barrons Educational Series
  - “IELTS Reading Previous Year Actual Tests with Answers”
  - “IELTS Reading Recent Actual Tests January-May 2020 with Answers” published by IELTSMaterial.com
  - “IELTS Actual Tests Reading & Listening” (IELTSMaterial, 2019)
  - “IELTS Practice Tests Plus 3 with Key” (Matthews & Salisbury, 2011) from Pearson Education Limited
  - “Cambridge IELTS 8 Student's Book with Answers” (Cambridge ESOL, 2011)
  - “Cambridge IELTS 9 Student's Book with Answers” (Cambridge ESOL, 2013)
  - “Cambridge IELTS 14 Academic Student's Book with Answers” (UCLES, C. U. P. A., 2020)

### Appendix II

#### Sources Included in the Iranian National English Proficiency Tests Corpus (INC)

- A corpus of reading comprehension passages for Iranian national English proficiency tests was compiled using multiple sources, including:
  - Comprehensive MSRT Tests and Comprehensive EPT Tests, by Sanjesh Amirkabir Publications (2020)
  - “A Comprehensive Textbook for MSRT (MCHE), MHILE, EPT, UTEPT, Tolimo, IELTS, and TOEFL, by Sanjesh Amirkabir Publications (2020)”
  - A Comprehensive Book for English Language Tests, by Zangie-Vandi, M., and Zangie-Vandi, S. (2018)

### Appendix III

#### Structural Classification of the Lexical Bundles Found in The IC

#	Verb-Phrase Fragments	Freq.	Prepositional Phrase Fragments	Freq.	Noun Phrase Fragments	Freq.	Other Fragments	Freq.
1	are more likely to	27	at the same time	53	One of the most	84	as a result of	39
2	more likely to be	19	for the first time	34	the end of the	53	is one of the	31
3	to be able to	18	on the other hand	31	per cent of the	31	as well as the	26
4	to do with the	17	at the end of	30	some of the most	28	it is important to	24
5	is likely to be	17	in the United States	25	the top of the	23	it has been suggested	16
6	will be able to	17	in the form of	24	the surface of the	22	it is possible to	16
7	to be involved in	16	when it comes to	22	one of the first	21	it was not until	15
8	can be found in	15	by the end of	22	a wide range of	21		
9			in the case of	22	one of the world's	18		
10			in a way that	17	parts of the world	18		
11			in the face of	17	the only way to	17		
12			of the most important	17	to the development of	16		
13			at the time of	15	the development of the	15		
14			of the importance of	15				

*Appendix IV**Functional Classification of Lexical Bundles In IC*

#	Discourse Organizers	Freq.	Stance Bundles	Freq.	Referential Expressions	Freq.	Discussion-specific bundles	Freq.
1	"on the other hand"	31	"as a result of"	39	"the end of the"	53	"impacts of climate change"	16
2	"when it comes to"	22	to be able to	18	"at the end of"	30		
3	"to do with the"	17	"are more likely to"	27	"at the same time"	53		
4	"to be involved in"	16	"is likely to be"	17	"by the end of"	22		
5	"as well as the"	26	"it has been suggested"	16	"in a way that"	17		
6			"more likely to be"	19	"at the time of"	15		
7			"will be able to"	17	"one of the most"	84		
8			"it is possible to"	16	"some of the most"	28		
9			"of the importance of"	15	"in the united states"	25		
10			"it is important to"	24				
11			of the most important	17	"in the form of"	24		
12					"the top of the"	23		
13					"the surface of the"	22		
14					"in the case of"	22		
15					"a wide range of"	21		
16					"one of the first"	21		
17					"per cent of"	21		
18					"one of the world's"	18		
19					"parts of the world"	18		
20					"the only way to"	17		
21					"can be found in"	15		
22					"to the development of"	16		
23					"the development of the"	15		
24					"in the face of"	17		
25					for the first time	34		
26					"is one of the"	31		
27					it was not until	15		

*Appendix V**Structural Classification of the Lexical Bundles in LC*

#	Prepositional Phrase Fragments	Freq.	Noun-Phrase Fragments	Freq.	Verb-Phrase Fragments	Freq.	Other Fragments	Freq.
1	at the beginning of	24	one of the most	29	are more likely to	24	as well as the	28
2	at the same time	23	some of the most	20	can be seen in	17	it is important to	24
3	in the form of	23	a member of the	19	can be used to	16	is one of the	15
4	as a result of	21	the extent to which	17	did not want to	16	it is difficult to	16
5	in terms of the	21	the fact that the	15	are less likely to	16		
6	on the other hand	19	the end of	30	to be able to	15		
7	in the face of	18	the beginning of the	20				
8	in the case of	17	the time of the	15				
9	in a variety of	16	the way in which	15				
10	in the middle of	15						

*Appendix VI**Functional Classification of Lexical Bundles in the LC*

#	Discourse Organizers	Freq.	Stance Bundles	Freq.	Referential Expressions	Freq.	Discussion-specific bundles	Freq.
1	“on the other hand”	19	“are more likely to”	24	“as well as the”	28		
2			“as a result of”	21	“in terms of”	21		
3			“are less likely to”	16	“in the form of”	23		
4			“the fact that the”	15	“a member of the”	19		
5			“it is difficult to”	16	“can be seen in”	17		
6			“did not want to”	16	“the extent to which”	17		
7			“it is important to”	24	“in a variety of”	16		
8			to be able to	15	“at the same time”	23		
9					“one of the most”	29		
10					“in the face of”	18		
11					“in the middle of”	15		
12					“the time of the”	15		
13					“some of the most”	20		
14					“is one of the”	15		
15					“can be used to”	16		
16					“the end of the”	13		
17					“at the beginning of”	24		
18					“the beginning of the”	20		
19					“in the case of”	17		
20					“the way in which”	15		