

Article

## The Structures and Functions of Lexical Bundles in Argumentative Essays by Chinese EFL Students at the Tertiary Level

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### Abstract

The present study investigated and analysed the structures and functions of 3-word to 6-word lexical bundles of 120 English argumentative writing by Chinese EFL students and employed the framework based on Biber *et al.*'s structural classification and Hyland's functional classification of lexical bundles. It was found that there was generally a negative correlation, both structurally and functionally, between the frequency and the length of lexical bundles although there were some fluctuations in certain specific categories. Results indicated that the participants did not have a good command of lexical bundles, affecting the quality of English argumentative writing in various ways. First, the sampled students used limited types of lexical bundles frequently. They generally lacked lexical richness when employing specific lexical bundles to express their opinions and text-oriented lexical bundles to convey transitional signals. Second, they relied heavily on the anticipatory *it* structure and did not have the consciousness of using hedges and boosters when expressing their attitude. Third, they virtually did not use lexical bundles involving attributive clauses. Fourth, they are inclined to use colloquial language in writing. The paper includes implications for instruction of effective use of lexical bundles in argumentative writing.

### Keywords

Lexical bundles, argumentative writing, Chinese EFL Students, corpus

## 1 Introduction

The recent thirty years witness the rapid development in corpus linguistics which is particularly insightful for research in the use of language in the availability of computer technology. Corpus linguistics can be applied in almost any area of linguistics, of which the recurrent combination of words, i.e., lexical bundles (Biber *et al.*, 2000) is one of the most commonly studied areas, providing the information of frequency: the frequency of occurrence and co-occurrence (Gries, 2008).

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Lexical bundles in the acquisition and use of language, one of the most rapidly growing areas, have increasingly drawn attention from scholars in applied linguistics over the past 25 years (Hyland, 2008a). Regarded as a key indicator for measuring EFL learners' language competence (Cortes, 2004), the significance of lexical bundles in academic writing, generally accounting for about 20% of the whole of academic texts (Biber *et al.*, 1999), has also been widely recognized (Biber & Conrad, 2000).

The ability to write in English has become a core skill in a globally connected world and has been regarded as the basic requirement by a large number of enterprises and institutions in recruiting graduates (Geng, 2018). It becomes ever more critical to effectively develop students' writing ability (Qi & Zhang, 2017; Liu & Zhang, 2018). Lexical bundles are particularly important for ELF learners who lack sufficient input of authentic material. Stored as a whole, lexical bundles can greatly reduce Chinese EFL students' stress in terms of the output of a second language, increasing language accuracy and fluency (Liu & Ye, 2009). However, Chinese EFL students' competence in using lexical bundles admits of no optimism generally (Diao, 2004). They are inclined to underuse and misuse lexical bundles. The underuse and misuse of lexical bundles in L2 texts are interrelated structurally and functionally (Xu, 2012). Accordingly, the present study was designed and intended to contribute to a better understanding of lexical bundles, and provide language educators and Chinese EFL students with an insight into effective use of lexical bundles in argumentative writing. To this end, the study analysed the structures and functions of 3-word to 6-word bundles extracting from a learner corpus of written data based on Biber *et al.*'s structural classification of lexical bundles and Hyland's functional classification of lexical bundles respectively.

## 2 Corpus Studies of Lexical Bundles in L1 and L2 Writing

Corpus analysis plays a dominant role in empirical studies into lexical bundles, in which researchers generally obtain data from existing corpora or build one on their own to count the frequency of target lexical bundles. Of all these empirical studies into lexical bundles, studying the features of lexical bundles has drawn much attention. These studies mainly compare and analyse the features of lexical bundles used by native speakers and non-native speakers, the use of lexical bundles in different registers, the differences of the use of lexical bundles by learners at different levels (Pan *et al.*, 2016).

Cortes (2004) investigates the use of 4-word lexical bundles in the journals of history and biology and compares the results with lexical bundles used by university students in these two disciplines in academic prose. The findings demonstrate that those students scarcely and most often wrongly employ the most common 4-word lexical bundles used by professional writers.

Wang and Zhang (2006) explore the features of lexical bundles of English majors in argumentative essays extracted from WECCCL and find that Chinese EFL students use relatively fewer types of lexical bundles and less passive structures. Interestingly, Hyland (2008a) looks into the features of 4-word lexical bundles and argues that less confident or proficient students may rely greater on lexical bundles in shaping the texts, but it is also possible that writers regard lexical bundles as meaningful ways of instructing a text for their own intention and readers. In the same vein, the results of a study conducted by Wei and Lei (2011) exhibit that advanced Chinese EFL students in applied linguistics use more types of lexical bundles and overuse passive structures in academic writing compared to professional writers. It is claimed that these learners' use of passive structures in academic prose may be shaped by their inclination to be more objective in academic writing.

Chen and Baker (2010) report that there is a positive correlation between the number of recurrent word combinations and advanced writing proficiency. It should be pointed out that their study excluded overlapping or context-dependent bundles while Hyland's did not, and the size of the corpora between these two studies is different.

To further analyse the use of structural and functional features of lexical bundles in writing, Xu (2012), Feng and Yang (2014), Hu *et al.* (2017) investigate the frequencies of lexical bundles in writing and results indicate that Chinese EFL students have a propensity to overuse text-oriented bundles which may be overemphasised over years of teaching English writing. Staples *et al.* (2013) also find that less proficient learners employ more bundles on the whole and use more bundles occurring in the prompts in their analysis of lexical bundles in writing in the TOEFL iBT across three proficiency levels.

To fill the gap of comparing writing by professional L1 and L2 writers, Pan *et al.* (2016) compare structurally and functionally lexical bundles in English medium telecommunications journals. Results show that L1 professionals employ particular lexical bundles functionally different from L2 professionals. Therefore, it is expected that the use of specific bundles may be stressed in teaching writing.

Lu *et al.* (2018) analyse structurally and functionally 370 five-word phrase-frames and 84 six-word phrase-frames and derive a list of p-frames from a corpus of a specific genre in six social science disciplines. The list generated is pedagogically useful for novice social science scholars as they engage in academic writing.

Shin *et al.* (2018) use lexical bundles as a tool to identify and analyse definite article use by L2 learners. The results show the advantages of using core expressions to investigate both correct and incorrect use of the definite article in lexical bundles.

To conclude, although some researchers study lexical bundles within the framework of structural and functional classifications of lexical bundles (e.g., Hyland, 2008a; Hu *et al.*, 2017; Xiao, 2020), they do not analyse 3-word to 6-word lexical bundles in argumentative writing by business majors who are highly proficient Chinese EFL learners at the tertiary level. An analysis of the structures and functions of lexical bundles employed by these participants will offer a way to understand the cognitive process of highly proficient Chinese EFL learners at the tertiary level, revealing their deficiency of employing lexical bundles in writing and providing an insight into the use and instruction of lexical bundles to improve their L2 writing quality.

### 3 Tentative Operational Definition of Lexical Bundles

The term and the definition of lexical bundles remain controversial (Chen & Baker, 2010). Over 50 terms such as prefabricated chunks, lexical phrases, formulaic language, collocation, and chunks have been applied to refer to lexical bundles (Wray, 2002). The definition of lexical bundles in the present study is: lexical bundles are meaningful extended collocations which are combinations of 3 or more words that co-occur frequently. This definition is mainly based on Biber *et al.*'s frequency-based approach to defining lexical bundles for it sets the standard of and marks the milestone of studying lexical bundles in a corpus, which is highly operable in extracting target lexical bundles with the help of computer and corpus technology. Here *meaningful* is included in the definition because some word combinations have definite or specific meanings while some do not. For example, "but in the" occurs with high frequency in corpora but it does not have a particular meaning or function and cannot be seen as lexical bundles (Ma, 2011). As a composite of the lexicon, grammar, and function, meaningless word combinations are not regarded as lexical bundles in the present study.

### 4 Classifications of Lexical Bundles

Different names and definitions of multi-word combinations bring about different standards of classifying them (Liu & Ye, 2009), of which structural and functional classifications of lexical bundles are the two major standards of categorising them. The present study analysed the structures of lexical

bundles based on Biber *et al.*'s classification of lexical bundles and the functions of them through Hyland's classification.

#### 4.1 Biber *et al.*'s structural classification of lexical bundles

Biber *et al.* (1999) conducted seminal studies of lexical bundles and discovered that words have strong associations with distinct grammatical structures, i.e., lexico-grammatical structures, classifying 12 categories of lexical bundles in academic prose through the corpora LGSWE, a large electronic database of naturally occurring language containing more than 40 million words of texts presenting six main registers. It reflects the structure and use of lexical bundles in context, providing an insight into the use and instruction of lexical bundles to improve the quality of a writing product.

Biber *et al.*'s structural classification of lexical bundles lays the cornerstone for studying systematically lexical bundles from a structural perspective (Li & Liu, 2016). Most importantly, Biber *et al.* formulated the framework for classifying lexical bundles. An overwhelming number of studies on lexical bundles in academic writing have been carried out based on Biber *et al.*'s framework (e.g., Cortes, 2004; Chen & Baker, 2010; Xu, 2012; Du, 2016; Hu *et al.*, 2017).

Table 1

*Biber et al.'s Structural Classification of Lexical Bundles (Biber et al., 1999, p. 1014-1015)*

Structure	Examples
noun phrase with <i>of</i> -phrase fragment	the end of the, the point of view of
noun phrase with other post-modifier fragment	the relationship between the, the way in which the
prepositional phrase with embedded <i>of</i> -phrase fragment	as a matter of, from the point of view of
other prepositional phrase fragment	at the same time, in the United Kingdom
anticipatory <i>it</i> + verb phrase / adjective phrase	it should be noted, it is not surprising that
passive verb + prepositional phrase fragment	be taken into account, can be seen as
copula <i>be</i> + noun phrase / adjective phrase	is one of the, was no significant difference between
(verb phrase +) <i>that</i> -clause fragment	has been shown that, studies have shown that
(verb / adjective +) <i>to</i> -clause fragment	has been shown to, is interesting to note that
adverbial clause fragment	as we have seen, if there is a
pronoun / noun phrase + <i>be</i> (+...)	this is not the, the aim of this study was
other expressions	as well as the, than that of the

#### 4.2 Hyland's functional classification of lexical bundles

Functionally, there are primarily two types of classification of lexical bundles put forward by Biber *et al.* and Hyland respectively (Li & Liu, 2016). Biber *et al.* (1999) classify them into four categories based on textual and pragmatic function: stance bundles, discourse organisers, referential bundles and special conversational bundles. Extensions and modifications have been made onto Biber *et al.*'s functional classification of lexical bundles, notably the one proposed by Hyland who provides a significant framework with more pronounced register features of academic writing for analysing functionally lexical bundles in academic texts (Li & Liu, 2016). Hyland (2008a) studies the frequency, forms and functions of lexical bundles in research articles, master's theses, and doctoral dissertations in four disciplines to explore the significance of lexical bundles in academic writing, in which he puts forward three new major categories of lexical bundles: research-oriented, text-oriented and participant-oriented lexical bundles. His classification has been adopted partially or wholly by many international

researchers since he modified Biber *et al.*'s framework (e.g., Hyland, 2008b; Xu, 2015; Pan, 2016; Pan *et al.*, 2016; Gao, 2017).

Research-oriented lexical bundles emphasise activities and experiences in reality, enabling writers to “structure their activities and experiences of the world”. Text-oriented lexical bundles are principally related to the organisation of a text and its meaning as a message (Hyland, 2008a). The writer or the reader of a text is highlighted concerning participant-oriented lexical bundles (Hyland, 2012).

Table 2

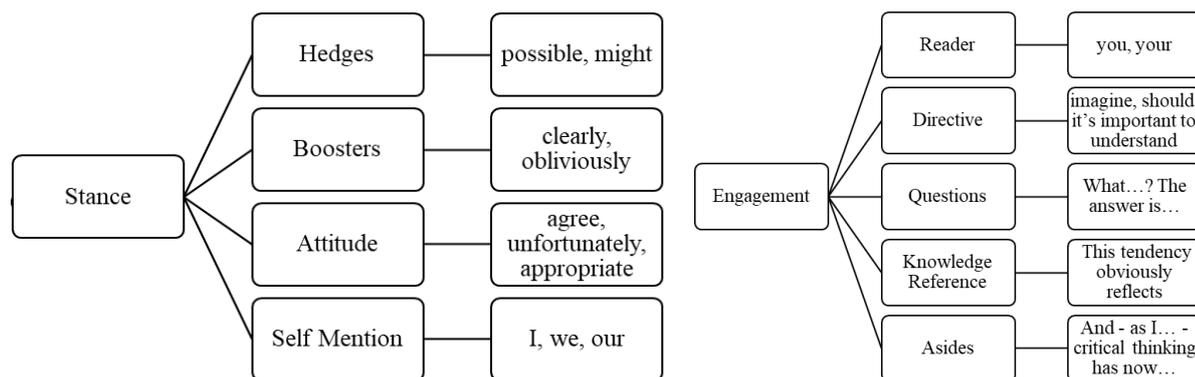
*Hyland's Functional Classification of Lexical Bundles (Hyland, 2008a)*

<b>Research-oriented</b>			
Subcategory	Explanation	Examples	
location	indicating time and place	in the present study, at the beginning of the operation of the, the role of the	
procedure			
quantification			the magnitude of the, one of the most
description			the size of the, the structure of the
topic			related to the field of research
<b>Text-oriented</b>			
Subcategory	Explanation	Examples	
transition signals	establishing additive or contrastive links between elements	on the other hand, in contrast to the	
resultative signals	mark inferential or causative relations between elements	as a result of, these results suggest that	
structuring signals	text-reflexive markers which organise stretches of discourse or direct reader elsewhere in text	in the present study, as shown in fig	
framing signals	situate arguments by specifying limiting conditions	on the basis of, in the case of	
<b>Participant-oriented</b>			
Subcategory	Explanation	Examples	
stance features	convey the writer's attitudes and evaluations	are likely to be, may be due to	
engagement features	address readers directly	as can be seen, it should be noted that	

To be more precise, participant-oriented lexical bundles are described in detail in the following figure.

Figure 1

*Key Resources of Academic Interaction (Hyland, 2005)*



Biber and Hyland focus on different aspects of the features of lexical bundles. Biber focuses on the structures while Hyland focuses on the function of pragmatics. Hyland provides an insight into the cognitive process in terms of pragmatics and revealing possible problems in writing through the type and frequency of lexical bundles and further qualitative analyses to study the textual contexts of certain lexical bundles and determine their functions.

## 5 Research Questions

The present study focuses on analysing the structures and functions of lexical bundles in L2 argumentative essays by second-year business majors at a Shenzhen-based Hong Kong University in China based on Biber *et al.*'s structural classification and Hyland's functional classification of lexical bundles respectively. In doing this, the features of lexical bundles are unfolded and analysed in aspects of the type and frequency of lexical bundles.

The author formulated two interrelated research questions as follows.

1. What are the structures of 3-word to 6-word lexical bundles in English argumentative writing by Chinese EFL students?
2. What are the functions of 3-word to 6-word lexical bundles in English argumentative writing by Chinese EFL students?

## 6 Methodology

### 6.1 Corpus used in the study

A corpus with 53,882 words was built on 120 writing samples from second-year business majors at a top-ranked Shenzhen-based Hong Kong university. Most of the participants were admitted to the university from famous key senior high schools in various provinces and cities. Participants of liberal arts ranked the top 1% of most provinces while those of science ranked the highest 2.4% of most provinces in the college entrance examination. They are among the top 3% students in China. After being admitted to the university, all the lessons are taught in English. With respect to their English proficiency, the majority of the participants achieved an overall band of 6.0-7.0 in the IELTS. They are highly proficient Chinese EFL learners at the tertiary level. These learners, as representatives of Chinese EFL students at the tertiary level, have a strong motivation to learn English for further studying abroad.

Each participant was instructed to write an English argumentative essay on a topic of about 400 words within 60 minutes under the same conditions. One of the following three prompts was given to each participant.

1. Will Chinese replace English as a global language? State your position and explain your reasons.
2. Is it fair that celebrities earn much more money than ordinary individuals, such as: scientists, doctors, firefighters or teachers? State your position and explain your reasons.
3. Should English be used as the teaching medium in all Chinese schools? State your position and explain your reasons.

Table 3

#### *Composition of the Corpus*

Corpus	Argumentative writing by business majors
Number of texts	120
Mean length of texts	over 400 words
Total corpus size	53,882 words

## 6.2 The tool used in the present study

Being one of the most popular tools currently used by researchers to investigate language patterns of different languages (e.g., Hyland, 2008a; Ma, 2009; Pan *et al.*, 2016), WordSmith 4.0 is chiefly employed for descriptive analysis in the present study, identifying 3-word to 6-word lexical bundles under specific frequency and dispersion threshold for creating the list of target lexical bundles. It should be noted that lexical bundles are retrieved based on tokens instead of types, that is, the entire number of words but not the number of distinct words (Ma, 2009).

## 6.3 Lexical bundle identification – frequency threshold

Identifying lexical bundles in academic texts has adopted extensively automated and frequency-driven approaches over the past decade (Hyland, 2012).

The frequency threshold, an essential criterion for generating a list of lexical bundles through WordSmith 4.0., determines the number of lexical bundles that are to be analysed, aiming to identify typical bundles (Pan *et al.*, 2016). Accidental collocations are essentially insignificant for studies of significant collocations (Wei, 2002). Large written corpora generally adopt a frequency ranging from 20 to 40 times per million words while relatively small spoken corpora usually adopt a raw cut-off frequency of 2-10 times per million words (Chen & Baker, 2010). The *COBUILD* and *JDEST* research projects usually set the frequency threshold at three times (Wei, 2002). Yang (2015) sets the frequency threshold at three times to exclude accidental collocations when comparing the use of lexical bundles used by Chinese and American undergraduates in 40 texts (about 500 words) respectively. Xu, J. J. and Xu, Z. R. (2007) adopt a frequency of seven times, seven times, four times and four times for comparing 3-word to 6-word lexical bundles in the two corpora of *COLSEC* and *ICE-GB-Spoken*. Compared with 3-word and 4-word lexical bundles, 5-word and 6-word bundles usually adopt a lower cut-off frequency (Alipour, 2013). No final conclusion has yet been reached on setting the frequency threshold. The purpose is to obtain a reasonable number of typical lexical bundles (Xu, 2010). Therefore, given the size of the corpus in the present study and the length of lexical bundles to be analysed, the frequency threshold of 3-word to 6-word lexical bundles was carefully set as six times, six times, four times and four times respectively.

## 6.4 Four specific steps to obtain target lexical bundles

Four specific steps of obtaining target lexical bundles are shown as follows.

1. Use the function of WordList to choose the writing samples and then make an index. All the 120 writing samples were converted into one text to make the index;
2. Open the index and calculate the frequency of 3-word to 6-word lexical bundles of writing samples through changing the length of lexical bundles and the setting of the word cluster;
3. Retrieve possible lexical bundles based on the criteria mentioned;
4. Classify and count the number and frequency of meaningful lexical bundles based on Biber *et al.*'s structural classification of lexical bundles and Hyland's functional classification of lexical bundles.

The lexical bundles were extracted, distinguished, classified and analysed based on the collected data through the four steps mentioned above.

## 6.5 Inter-rater reliability

To achieve inter-rater reliability, the author (rater A) and rater B (a junior lecturer in Applied Linguistics) classified manually target lexical bundles based on the criteria respectively after retrieving lexical

bundles automatically through WordSmith 4.0., and then discussed and negotiated with each other to resolve discrepancies and achieved inter-rater reliability, the cornerstone which ensures the reliability and validity of the present study.

## 6.6 Adjusted analytical framework based on Biber *et al.*'s structural classification of lexical bundles

After analysing 3-word to 6-word lexical bundles extracted from the text, it was found that Biber *et al.*'s structural classification was not sufficient to cover all categories of lexical bundles in the present study. Therefore, with classification and discussion by the two raters, noun-phrase fragment, verb + *as* - noun phrase and copula *become* + noun phrase / adjective phrase were added. In addition, noun phrase with other post-modifier fragment was substituted by noun phrase without *of* in order to further analyse lexical bundles constituted by noun phrase only or beyond. The category of passive verb + prepositional phrase fragment was eliminated in the present study since there were not any lexical bundles in this category although there were two lexical bundles with passive verbs.

Taken together, the adjusted analytical framework was presented in Table 4. To clearly demonstrate the classification, the 12 categories (subcategories) were classified into five major structured categories: NP-based, VP-based, PP-based, clausal lexical bundles and other expressions. The category of other expressions was not removed because there were some extracted lexical bundles not classified in the 11 subcategories.

Table 4

*Adjusted Structural Classification of Lexical Bundles*

Category	Subcategory
NP-based Lexical Bundles	noun phrase with <i>of</i> -phrase fragment noun phrase without <i>of</i>
VP-based Lexical Bundles	verb + <i>to</i> -clause fragment verb + <i>as</i> (+...) copula <i>be</i> / <i>become</i> + noun phrase / adjective phrase pronoun / noun phrase + <i>be</i> (+...)
PP-based Lexical Bundles	prepositional phrase with embedded <i>of</i> -phrase fragment other prepositional phrase fragment
Clausal Lexical Bundles	adverbial clause fragment verb phrase + <i>that</i> -clause fragment anticipatory <i>it</i> + verb phrase / adjective phrase
Other Expressions	first of all

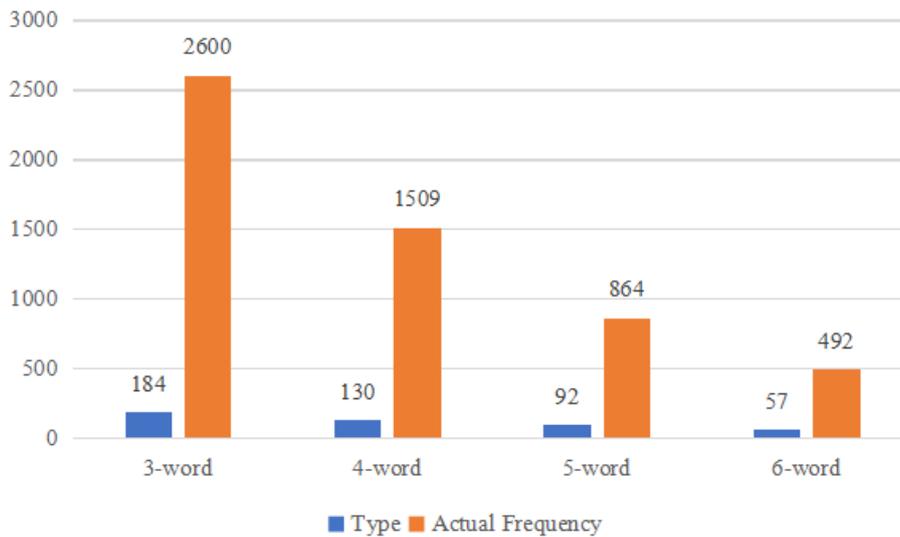
## 7 Results and Discussion

### 7.1 Structural analysis of target lexical bundles

#### 7.1.1 Overall type and frequency of target lexical bundles

There were 463 3-word to 6-word lexical bundles being extracted through WordSmith 4.0 and manual examination based on the framework of the present study, whose frequencies were 5,465 in total.

Figure 2

*Overall Type and Frequency of 3-word to 6-word Lexical Bundles*

It should be noted that the overall type and frequency of 3-word to 6-word lexical bundle decreased as the length increased on the whole. It is tentatively inferred that Chinese EFL students are customarily inclined to use shorter lexical bundles. Consistent with previous findings (i.e., Wang, 2006), there was a negative correlation between the length of lexical bundles and the frequency of lexical bundles. The same result matched with the type and the length of lexical bundles.

Chinese EFL students did not tend to use a great variety of lexical bundles in general, in particular given the contrastive high frequency of the corresponding lexical bundles. The result is in line with Wang and Zhang's (2006) findings suggesting that Chinese EFL students tend to use fewer types of lexical bundles. It is tentatively assumed that the students are still at the developmental stage, further proving the necessity for instruction to improve Chinese EFL students' ability to employ lexical bundles.

Table 5

*Proportional Distribution of Lexical Bundles (Frequencies) across the Structural Categories*

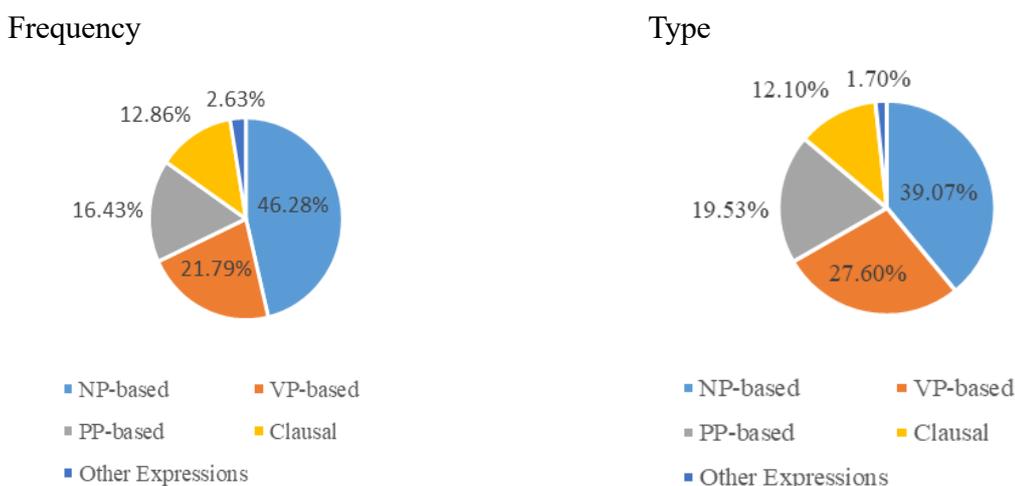
Subcategory	3-word	4-word	5-word	6-word
verb + <i>as</i> (+...)	86 (3.31%)	134 (8.88%)	131 (15.16%)	150 (30.49%)
anticipatory <i>it</i> + verb phrase / adjective phrase	41 (1.58%)	74 (4.9%)	43 (4.98%)	31 (6.3%)

Although the overall frequency of lexical bundles reduced as the length increased, there were certain fluctuations when it came to a specific category of lexical bundles of different lengths, basically supporting previous findings (Biber *et al.*, 1999; Wang & Sun, 2006). For example, the frequency of verb + *as* (+...) generally increased from 3-word to 6-word lexical bundles although there was a slight decrease in terms of 5-word bundles. It is tentatively assumed that Chinese EFL students have the propensity to write or make certain long and complicated sentences to demonstrate their language proficiency. The category anticipatory *it* + verb phrase / adjective phrase was also not in line with the general trend, whose frequency and type in terms of 4-word and 5-word lexical bundles were higher and more than that of 3-word and 6-word lexical bundles. It may be partially due to the fact that there was only a tiny fraction of the anticipatory *it* structure occurring in Chinese EFL students' argumentative writing.

### 7.1.2 Proportion of the five major categories of lexical bundles

Figure 3

#### Proportion of the Five Categories of Lexical Bundles



As can be seen from Figure 3, NP-based lexical bundles ranked the first among 3-word to 6-word lexical bundles, to be followed by VP-based, PP-based, clausal lexical bundles and other expressions. The high proportion of NP-based lexical bundles indicates that these sampled Chinese EFL students have a propensity to use NP-based lexical bundles to express their ideas, reflecting the transfer of mother tongue since the noun phrase is used as the main structure to organise thinking in Chinese (Wang, 2006).

### 7.1.3 Empirical studies of NP-based lexical bundles

The most frequently-used lexical bundle was “new global language” (Excerpt 1) which occurred 120 times, reflecting prompts influenced and shaped learners “brainstorming” for writing contents.

There were 49 types of noun phrase with *of*-phrase fragment and 119 types of noun phrase without *of*-phrase fragment respectively, making up 36.29% of the total. Of the 12 categories of lexical bundles, the frequency of noun phrase without *of* accounted for the majority, whose category could be further classified into three subcategories: noun phrase fragment, noun phrase + other prepositional phrase fragment and noun phrase + attributive clause fragment. Among the three, noun phrase + other prepositional phrase fragment made up the majority of the total, followed by noun phrase fragment of which the majority was topic-related lexical bundles. Noun phrase + attributive clause fragment accounted for the least. There were only two types of lexical bundles concerning the category of noun phrase + attributive clause fragment being used: “ordinary individuals who” and “people who are” (Excerpt 2).

- a. Unlike *ordinary individuals who* walk, run and jump freely on the street, celebrities need to dress well and behave well whenever they are watched.
- b. From the ancient times to modern times, celebrities have always been a special group of *people who are* spotted, commonly discussed, and most controversially, rich.

The low output of lexical bundles involving attributive clauses by Chinese EFL students is consistent with previous studies (Ma, 2009), which indicates that attributive clauses tend to remain a headache for Chinese EFL students and further efforts need to be made in this regard.

In terms of NP-based lexical bundles, Chinese EFL students are inclined to overuse or repetitively use the same bundles related to the prompt or the topic. Therefore, it is necessary to highlight the importance of using diversified bundles conveying the same or similar meaning in teaching writing.

### 7.1.4 Empirical studies of VP-based lexical bundles

Although the number of the type of verb + *as* (+...) was only 45, its frequency was relatively high: 501. Lexical bundles occurring in this category were mostly context-dependent such as “replace English as a global language” or use “Chinese as the global language” (Excerpt 3). It is assumed that Chinese EFL students are subject to the influence of prompts when employing lexical bundles. For the category of copula *be* / *become* + noun phrase / adjective phrase, *become* + noun phrase / adjective phrase took up approximately 28.47%, all of which were also context-dependent lexical bundles such as “become the global language” (Excerpt 4). The results are aligned with findings by Yang’s claims (2014) that learners depend heavily on the prompts. Taken together the topic-related NP-based lexical bundles along with the context-dependent VP-based lexical bundles, it is reasonable to predict that Chinese EFL students have the tendency to overuse specific lexical bundles, a commonality in acquiring a second language, which may be attributed to their interlanguage proficiency and lack of the richness of lexical bundles.

### 7.1.5 Empirical studies of PP-based lexical bundles

There were 81 types of PP-based lexical bundles with a proportion of 17.49%. The proportion of other prepositional phrases was the second highest among all the target bundles, following the subcategory of noun phrase without *of*. The use of scores of other prepositional phrases contributes to realising the functions of organising a text and restructuring information, enabling the content to be logical, systematic and readable (Du, 2016). “From my point of view” (Excerpt 5) was the only lexical bundle belonging to prepositional phrase with embedded *of*-phrase fragment.

### 7.1.6 Empirical studies of clausal lexical bundles

Clausal lexical bundles took up 15.77% of the total. Adverbial clause fragment, verb phrase + *that*-clause fragment and anticipatory *it* + verb phrase / adjective phrase accounted for 2.62%, 6.79% and 3.46% respectively. Verbs used by Chinese EFL students in the category of verb phrase + *that*-clause fragment were limited to “I think / believe / argue” (Excerpt 6). These three verbs were used repeatedly in Chinese EFL students’ argumentative essays. It is assumed that these sampled students lack lexical richness when expressing their view on something.

### 7.1.7 Empirical studies of other expressions

There were only eight types of other lexical bundles whose frequencies were 144, most of which played the role of organising the text such as “first of all”, “what’s more”, “all in all”, and “last but not least” (Excerpt 7).

- a. *First of all*, it will take great time, cost and effort to make the switch from English to Chinese.
- b. *All in all*, it’s weird enough to hear that a country is teaching their students in other country’s language instead of their official language in schools, and there’s problems of nation-awareness and cultural inheritance.

Chinese EFL students were taught how to use lexical bundles in the secondary school. The use of the high frequency of these lexical bundles suggested that their English proficiency and rhetoric awareness to organise an L2 writing text were to be improved even after over a year’s instruction at the university. Furthermore, these sampled students tend to use colloquial language in a written text as shown in Excerpt 8, which is in line with previous findings (e.g., Xu, 2012).

Some opponents may argue that it is a bad thing if Chinese becomes a global language, because it may take *a lot of* time for more foreigners to learn Chinese (Excerpt 8).

They tend to use lexical bundles such as “a lot of” whose frequency is 23 in writing a composition without realising it is much more common in an informal spoken context. Attention could be drawn to Chinese EFL students by presenting them examples about using lexical bundles in written and spoken language to help them distinguish and avoid inappropriate use of lexical bundles.

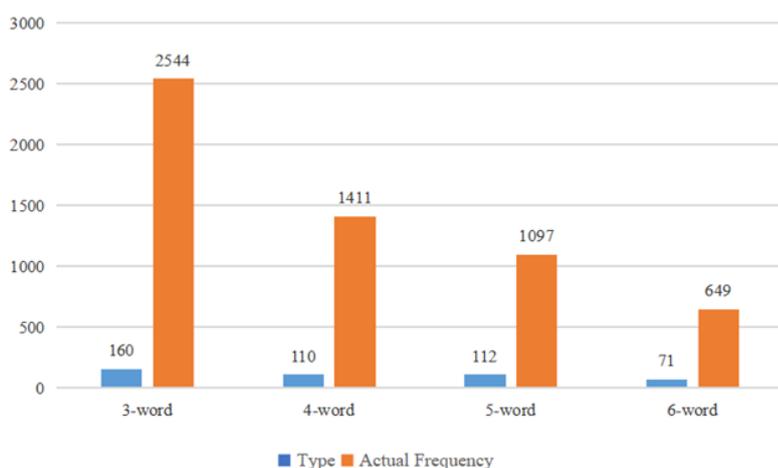
## 7.2 Functional analysis of target lexical bundles

### 7.2.1 Overall type and frequency of target lexical bundles

There were 453 3-word to 6-word lexical bundles being extracted through WordSmith 4.0 and manual examination based on Hyland’s classification of lexical bundles in the present study, of which the overall frequency was 5,710. A double check was made in this classification as the one based on Biber *et al.*’s classification of lexical bundles.

Figure 4

*Overall Type and Frequency of 3-word to 6-word Lexical Bundles*

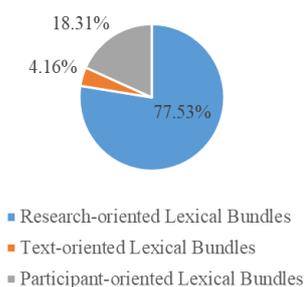


As can be seen from Figure 4, the overall frequency of 3-word to 6-word lexical bundles reduced as the length increased while the type of lexical bundles did not. With some slight fluctuations accordingly, the number of the type of 4-word lexical bundles was nearly equal to that of 5-word lexical bundles. It is tentatively inferred that Chinese EFL students have the consciousness to use long lexical bundles but are still at the developmental stage.

Figure 5

*The Distributions of the Frequency of the Three Categories of Lexical Bundles*

Frequency



Type

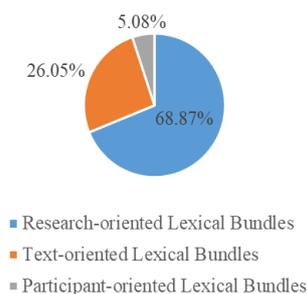


Figure 5 showed that research-oriented lexical bundles ranked the first among the three categories of lexical bundles regarding both the type and frequency, followed by participant-oriented and text-oriented lexical bundles. The result indicated that Chinese EFL students at the tertiary level relied much more on research-oriented lexical bundles than the other two types of lexical bundles in their argumentative writing, consistent with the way they employed the three types of lexical bundles in previous findings (Hu *et al.*, 2017).

Table 6

*Proportional Distribution of Lexical Bundles (Types) across the Functional Categories*

Subcategory	3-word	4-word	5-word	6-word
location	6	3	6	5
procedure	15	11	8	8
quantification	17	8	5	1
description	3	2	2	2
topic	62	50	63	35
transition signals	7	1	0	0
resultative signals	1	1	0	0
structuring signals	1	1	0	0
framing signals	2	2	4	3
stance features	44	30	24	17
engagement features	2	1	0	0

Table 7

*Proportional Distribution of Lexical Bundles (Frequencies) across the Functional Categories*

Subcategory	3-word	4-word	5-word	6-word
location	72 (2.91%)	35 (2.54%)	63 (6.09%)	61 (10.37%)
procedure	234 (9.47%)	155 (11.26%)	92 (8.90%)	84 (14.29%)
quantification	254 (10.28%)	67 (4.87%)	23 (2.22%)	4 (0.68%)
description	29 (1.17%)	12 (0.87%)	9 (0.87%)	8 (1.36%)
topic	1353 (54.73%)	809 (58.79%)	715 (69.15%)	341 (57.99%)
transition signals	87 (3.52%)	11 (0.80%)	0 (0.00%)	0 (0.00%)
resultative signals	21 (0.85%)	21 (1.53%)	0 (0.00%)	0 (0.00%)
structuring signals	9 (0.36%)	9 (0.65%)	0 (0.00%)	0 (0.00%)
framing signals	14 (0.57%)	21 (1.53%)	24 (2.32%)	20 (3.40%)
stance features	457 (18.49%)	266 (19.33%)	171 (16.54%)	131 (22.28%)
engagement features	14 (0.57%)	5 (0.36%)	0 (0.00%)	0 (0.00%)

As can be seen from Table 6 and 7, the type and frequency of lexical bundles generally reduced as the length increased although there were some fluctuations in specific categories. Among all the subcategories, topic-related lexical bundles accounted for the most, followed by bundles conveying a writer's stance. Moreover, there were six categories, including description, transition signals, resultative signals, structuring signals, framing signals and engagement features, making up a very low proportion of the whole of lexical bundles.

### 7.2.2 Empirical studies of research-oriented lexical bundles

Being the most recurrently occurred lexical bundles, there were 312 types of research-oriented lexical

bundles whose overall frequency was 4,420. As the dominant subcategory of research-oriented lexical bundles, over half of topic-related ones were prompts, supporting the result of analysing structurally lexical bundles in the present study. The finding further proves that Chinese EFL students are inclined to overuse prompts in English writing and it may be caused by their lack of critical thinking. Consistent with previous findings, topic-related lexical bundles are basically presented through NP-based and PP-based lexical bundles (Biber *et al.*, 1999). The findings also reveal that there are connections between the structures and functions of lexical bundles (Pan, 2016).

As shown in Table 6, Chinese EFL students employed more lexical bundles about procedure and quantification instead of description, in contrast to that of native speakers who employ a greater number of lexical bundles describing the characteristics of a specific object or behaviour (Gao, 2017).

### 7.2.3 Empirical studies of text-oriented lexical bundles

There were only 23 types of text-oriented lexical bundles used with an overall frequency of 237. Text-oriented lexical bundles were the most employed ones in native speakers' argumentative writing, but they were the least commonly occurring ones in the present study, revealing that these sampled Chinese EFL students still had a long way to go in mastering lexical bundles (Hu *et al.*, 2017). Of all the text-oriented lexical bundles, there were no significant differences among the use of lexical bundles with resultative, structuring and framing signals except transition signals accounting for the majority in this category. The number of the type of lexical bundles with transition signals was only eight but enjoyed a high frequency of 98. It is not unexpected that lexical bundles occurring in this category are limited to common lexical bundles such as "on the other hand" and "last but not least" (Excerpt 8). These lexical bundles are somewhat like a formula that Chinese EFL students recite, for organising a text, an argumentative essay in particular, which is easy for them to memorise and apply them mechanically in their writing. Various types of lexical bundles should be taught and grasped by Chinese EFL students.

### 7.2.4 Empirical studies of participant-oriented lexical bundles

Stance features accounted for a dramatically significant proportion while there were merely a few engagement features, which supports Xu's (2013) findings. Stance features are mostly expressed through the anticipatory *it* structure, consistent with previous findings that most participant-oriented lexical bundles conveying stance are constituted by clausal fragments (Biber *et al.*, 1999).

No hedges and boosters were used in constituting a lexical bundle based on the standard in the present study while attitude was the dominant type, followed by self-mention (much fewer types and lower frequency compared with attitude). Two types of lexical bundles constituted the stance features: "It is hard / fair / obvious", and "I believe / think / have to" (Excerpt 9), not completely aligned with the two types that Granger (1998: 44) argues for presenting the writer's position and attitude in formal writing.

#### a. active sentence constructing lexical bundles

I / we / one / you + (modal auxiliary) + active verb + *that*-clause

In the present study, Chinese EFL students tended to express explicitly their stance in argumentative writing with the first-person pronoun whose frequency is 45 times, as opposed to the more implicit means used by native speakers. Some studies attribute such existence to the learner's lack of consciousness to hide the writer marker or their inclination to use colloquial language. Nevertheless, a growing number of writers are now inclined to use self-referential language in academic writing to emphasise their stance (Xu, 2013). *One* was excluded in the above lexical bundles in the present study. It is tentatively assumed that Chinese EFL students are not aware of the fact that the indefinite pronoun *one* is commonly used to address readers in English argumentative writing to guide readers' participation. A combination of both *one* and *modal auxiliary* enables readers to construct the text with the writer and avoids overemphasising

reader or writer explicitness, thus keeping the interaction between the reader and writer within a reasonable distance.

b. passive sentence constructing lexical bundles

It + passive verb + (*that*-clause) and passive sentence

The one with passive sentences is not used in the present study. A possible explanation is that Chinese EFL learners may not have the awareness of using the passive voice to ensure the subjectivity of argumentative writing. Additionally, Chinese EFL learners have difficulty using passive structures correctly, particularly the past participle forms of some verbs.

For expressing their attitude, Chinese EFL students are inclined to use lexical bundles with the anticipatory *it* structure to express their stance. For example, when expressing something challenging to do or deal with, they used “it is hard” (Excerpt 10) with high frequency rather than lexical bundles with boosters to express the same stance. This result could be attributed to Chinese EFL students’ inability to use adverbs in conveying their stance (Zhao & Wei, 2010).

Taken together, it is tentatively inferred that Chinese EFL students are not fully conscious of or skilled at making use of stance markers to solidify their relationship with readers in constructing a text.

In comparison with stance features, lexical bundles with engagement features occurred only 14 times exemplified in Excerpt 11.

For example, *if you want to* say a sentence in English, you need to think about the grammar, the tense, singular or plural and so on (Excerpt 11).

Appropriate use of them allows a writer to bring a reader into the text and to interact with them (Long & Xu, 2010), promoting effective communication between a writer and a reader in academic discourse.

## 8 Conclusions

The present study built a corpus of 120 English argumentative essays written by Chinese second-year business majors and employed the framework based on Biber *et al.*’s structural classification and Hyland’s functional classification of lexical bundles to classify and identify the structures and functions of 3-word to 6-word lexical bundles in these essays, so as to provide some pedagogical insights into writing instruction.

### 8.1 Major findings of the present study

It was found that there was generally a negative correlation between the frequency and the length of lexical bundles although there were some fluctuations in certain specific categories in both the structures and functions of lexical bundles, consistent with previous findings (Wang & Sun, 2006).

#### 8.1.1 Major findings based on Biber *et al.*’s structural classification of lexical bundles

The result demonstrated that NP-based lexical bundles accounted for 46.28% of target lexical bundles. Being the major category used by the participants to express their ideas, the finding reflects the transfer of mother tongue for the noun phrase is employed as the main structure to organise thinking in Chinese. Of all NP-based lexical bundles, the most frequently-used lexical bundles are the repetition of essay prompts. It is therefore noted that the participants tend to use lexical bundles repeatedly and do not pay attention to the complexity and variety of them. This phenomenon manifests that the participants do not have a comprehensive and holistic grasp of the connotation of “prompt”, and the consequence is that the topic sentence cannot be constructed effectively, and further effective discussion cannot be carried out. At the same time, it also reflects the participants’ lack of critical thinking.

As can be seen, the participants also lack lexical richness in expressing their own opinions in terms of the category of verb phrase + *that*-clause fragment, which is limited to “I think / believe / argue”. Due to the restriction of L2 proficiency, participants heavily depend on some of the most frequently-used verbs and fail to display depth and breadth of verbs in using lexical bundles in writing. It was also found that the participants underuse and misuse specific lexical bundles. For example, they underused lexical bundles with the attributive clause, indicating that attributive clauses tend to remain a headache for Chinese EFL students despite the fact that they are important points in textbooks for junior and senior high school students in China and further efforts need to be made in this regard. And the participants were inclined to use colloquial language in their argumentative writing. It reveals that the participants are not able to correctly distinguish the differences between colloquial and written language and properly use lexical bundles in these two types of writing.

### 8.1.2 Major findings based on Hyland's functional classification of lexical bundles

Research-oriented lexical bundles took up 77.53% of the overall target lexical bundles, followed by 18.13% of participant-oriented and 4.16% of text-oriented lexical bundles, aligned with how Chinese EFL students employ these three types of lexical bundles in previous findings (Hu *et al.*, 2017). Of all research-oriented lexical bundles, over half of the dominant subcategory of topic-related bundles are prompts, which supports the result of analysing structurally lexical bundles in the present study and strengthens that there are connections between the structures and functions of lexical bundles.

When it comes to text-oriented lexical bundles, lexical bundles expressing transitions signals in this category are limited to common lexical bundles such as “on the other hand” and “last but not least”. These lexical bundles are taught to Chinese EFL students when they are junior and senior high school students. They memorise and apply them mechanically in organising a text, an argumentative essay in particular. Participants need to acquire a greater number of text-oriented bundles to use varied transitions signals in argumentative writing more effectively.

For participant-oriented lexical bundles, Chinese EFL students tended to use the first-person pronoun to express explicitly their stance in argumentative writing in the present study. The result can be attributed to the learner's intention to use self-referential language in writing to emphasise their stance or their lack of consciousness to hide the writer marker or their inclination to use colloquial language. Additionally, there were no hedges and boosters occurring in the participants' argumentative essays, supporting the finding of Zhao and Wei (2010). The participants relied heavily on the anticipatory *it* structure and did not have the consciousness of using boosters when expressing their attitude. Compared with stance features, lexical bundles with engagement features occurred in low frequency. It is tentatively concluded that they are weak in making use of such lexical bundles or do not have the consciousness of using that category of lexical bundles.

## 8.2 Pedagogical implications of the present study

It is noted, therefore, that the sampled students did not excel at making use of lexical bundles although they have a relatively good command of English across Chinese EFL students at the tertiary level. They tend to overuse, underuse and misuse specific lexical bundles, affecting the quality of English argumentative writing in various ways. More attention should be paid to the instruction of using lexical bundles to improve their writing. Our further research will centre on how to teach lexical bundles systematically.

First, it is important to compile and use writing textbooks which stress the significance of lexical bundles, contributing to raising teachers' awareness of the significance of lexical bundles in English argumentative essays, whose perception of lexical bundles directly influences their choice of teaching materials, teaching approaches and the focus on evaluating writing (Teng, 2018). Lexical bundles

are seldom taught systematically or contained in evaluating students' language proficiency in China. Although they are somewhat tested in the Clozes, it is very likely that such practice does not make much sense in improving students' ability to employ lexical bundles for various problems related to lexical bundles occur when it comes to writing even if they obtain high scores in this part (Ding, 2010). A better grasp of lexical bundles will save students much time and energy in focusing on basic language points but pay more attention to improve the quality of writing in terms of the content and the structure of writing (Xu, 2012).

Second, explicit instruction should be placed on lexical bundles that are underused, overused and misused. For example, alternatives for highly repetitive bundles should be taught and stressed to enrich the variation of lexical bundles in English argumentative writing. Additionally, comparing spoken and written registers is an advantageous technique in the classroom for raising students' awareness of using different lexical bundles in different registers to avoid the tendency of using colloquial language in written texts.

Third, teachers can guide Chinese EFL students to acquire and employ lexical bundles appropriately through extracurricular reading. With regard to the choice of reading content, it is expected that a required and recommended reading list will be included in textbooks for students. For example, Junior Chinese Textbook in China requires learners to read at least two pieces of masterpieces each semester such as *All Men Are Brothers*, and the examination of students' understanding of masterpieces is included in the evaluation system, the senior high school entrance examination. Teachers can help Chinese EFL students to locate lexical bundles when teaching reading to enable them to learn lexical bundles consciously and positively when they are reading outside the classroom, drawing students' attention to larger units than words and saving them much time and trouble in obtaining information word by word. In this way, reading, for students, is not to master a particular grammatical structure or the meaning of a particular word but to master a sentence or the whole discourse (Ding, 2010). Employing what they learn through reading contributes positively to fluent and accurate language production.

Fourth, L2 workshops, advanced L2 writing courses, and conferences with a focus on how to teach lexical bundles could be set up for teachers to enhance their knowledge of writing theory and help them develop the ability to improve Chinese EFL students' proficiency in English argumentative writing through lexical bundles.

### 8.3 Limitations of the present study

However, some limitations should be noted. First, only 120 argumentative texts were analysed due to constraints of collecting texts. Although the samples are representative, they are not of universal significance. It is expected that a larger corpus of argumentative writing by highly proficient Chinese EFL students of a specific major can be built for analysing lexical bundles. Second, the present study did not compare lexical bundles employed by both Chinese EFL student and native speakers due to constraints of collecting written samples overseas, which may provide more pedagogical implications for Chinese EFL writing.

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