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# Recurrent Formulas and Moves in Writing Research Article Conclusions among Native and Nonnative Writers

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ABSTRACT

*For years, writing academic research articles (RAs) has gained abundant attention from scholars. This is obviously motivated by the fact that writing RAs is an important endeavor through which writers are able to communicate with members in their discourse community with an owned academic voice to perpetuate an identity. This voice is facilitated through the frequent and efficient use of formulaic sequences such as lexical bundles. This study aims to investigate the use of lexical bundles in two different corpora of 200 RA conclusions written by native and Iranian non-native writers. The comparison is premised on the notion that there may be linguistic differences between the two groups of writers and the comparison could serve to highlight how communicative purposes could be conveyed by the bundles in the moves and steps of the conclusions differently. Findings demonstrated that native writers relied more on the use of lexical bundles in writing conclusions. Structurally, the majority of the bundles found in the two corpora were noun or prepositional phrases. While native authors were more inclined to the use of dependent clauses, the bundles found in the L2 corpus contained more verb phrases. Further analysis of the bundles in the moves and steps of the conclusions revealed some marked variations between the two groups. Most of these expressions in the L2 corpus were used in more than one move or step, while in the native corpus, a group of lexical bundles were found to belong to only one move or step of a move.*

*Keywords: formulaic language; lexical bundles; move; RA conclusion; native and non-native writing*

## INTRODUCTION

Previous decades have witnessed many studies on using a particular linguistic feature to specify and identify the rhetorical structure of the genres. In the case of the research article (RA), as a well-studied genre, a few attempts have been made to identify a list of key words and expressions related to its different sections (Brett 1994, Kanoksilapatham 2003, Swales 1981, Yang & Allison 2003). Each part of the RA includes a set of elements, referred to as *move*, which helps to reflect the communicative purposes of the RA (Kanoksilapatham 2003). For example, in his seminal work, Swales (1981) found that writers used the words *interest* or *important* to express centrality in Move 1 of RA introduction and expressions like *the purpose of this study is*, or *the aim of this research* were found to initiate Move 3 of introduction. It is generally realised that the link between the move and the type of expression it holds can provide insights into better interpretation of the communicative purpose conveyed by the move. Therefore, knowing the frequently occurring word combinations used in the rhetorical organisation or structure of RA could be a great help to writers, especially novice writers and even students who need to develop their academic writing skills. As part of the repertoire of skills, there is also a need to infuse the skills of using formulaic expressions that could enhance fluency, without which the writer could face difficulties in conveying his message and reducing his chances of getting himself published or recognised in the community of practice.

The study on formulaic language has attracted the researchers' attention since the seminal works by Jespersen (1917) and Firth (1951). Firth (1951) captured the term 'collocation' through the dictum 'you shall judge a word by the company it keeps'. This includes knowledge of phraseology which is necessary to achieve idiomaticity and contribute to the efficient construction and reading of a text. To Adel and Erman (2012), idiomaticity refers to the knowledge of combination of words which are conventionalised. In other words, the combinations have become accepted as part and parcel of a 'natural' text. Thus, to be proficient and adept, there is a need to realise this idiomaticity through the use of different types of recurrent word combinations. These combinations of words which have functions specific to a genre or register are referred to as formulaic expressions. There is a well-established realization that proficiency level is somehow determined by the amount and type of formulaic language used (Lewis 2009). Pawley and Syder (1983) also suggest that fluent production and the idiomatic control of a language rely heavily on the frequent use of these expressions.

By definition, lexical bundles are types of formulaic expressions which co-occur with a high frequency in a given register or discourse (Biber, Johansson, Leech, Conrad, & Finegan 1999). These bundles are considered as building blocks of discourse (Biber & Barbier 2007) and are seen to play a crucial role in creating fluency in speech and writing. Previous literature has found that having a good of command of lexical bundles is indicative of a mature writer and an expert language user (Bamberg 1983, Biber 2009, Karabacak & Qin 2013, McCulley 1985, Cortes 2004; Yeganehjoo & Yap 2012). Some examples of the bundles used in RA are *in terms of the, on the other hand, as a result of* and *as can be seen*.

Due to their importance in language acquisition, that includes teaching and learning, several studies have highlighted the use of lexical bundles in a wide range of registers such as classroom teaching and textbooks (Biber, Conrad & Cortes 2004), everyday conversation (Biber et al. 1999), academic lectures (Kashiha & Chan 2013, 2014, Nesi & Basturkmen 2006), and doctoral dissertations and master's theses (Hyland 2008). Other studies also tried to compare academic writing of students to those of expert writers in terms of the use of lexical bundles. Among them, Cortes (2004) compared the use of lexical bundles in students' and published writings of biology and history disciplines and found that students were not inclined to use the four-word lexical bundles that were frequently used in the published articles. Even if they used some English bundles, they used them in different ways.

## LEXICAL BUNDLES AND MOVE ANALYSIS

Research into the notion of lexico-grammatical features in the rhetorical organisation of RA has always been an interesting topic for scholars working on the structure of discourse. In view of this, several words or combination of words have been found to be connected to a move or step in sections of RA. In addition, another important feature which emphasises the need for conducting such studies is that both lexical bundles and moves are considered as building blocks in the construction of discourse (Cortes 2013). Lexical bundles are seen as "important building blocks of coherent discourse and characteristic features of language use in particular settings" (Hyland 2008, p. 8). In the same line, Biber, Connor, and Upton (2007) maintain that move patterns are considered as the "main building blocks" of a register (p. 53).

Discovering the most frequent lexical bundles used in the rhetorical structure of different sections of RA could provide researchers from different fields with a better picture of the role of lexico-grammatical features in the construction of academic discourse communities. In sum, the previous studies have provided insight into our understanding of

this type of formulaic expressions in academic writing. However, little attention has been given to compare English native and L2 writers in terms of the use of such formulaic language sequences in the rhetorical structure of academic RAs. The scarcity is felt even greater when it comes to the conclusion section of RAto highlight the potential problems that ESL/EFL learners may have in writing academic conclusions in English. Writing the conclusion section would require the researchers to spend plenty of time mapping the ideas since it "provides not only an outline of the study conducted, but also other significant elements such as implications and recommendations" (Sandoval 2010, p.1). This way, they could contribute to knowledge making and leave a mark among readers. Accordingly, non-native writers have increasingly aimed at creating a greater academic voice in their disciplinary communities. Publishing in esteemed journals has reached a new level of significance in academia and the use of formulaic expressions such as lexical bundles is often viewed as a mark of competence in the language (Hyland 2008).

## CORPUS DESCRIPTION AND METHODOLOGY

The corpus used in this study comprised 400 RA conclusion sections from the discipline of applied linguistics. Applied linguistics is selected based on the need to explore how soft disciplines use formulaic language to serve the communicative purposes related to RA conclusion section. The corpus was divided into two equal sub-corpora of native and non-native writers. The native speaker (NS) corpus comprised 200 conclusions written by authors whose native language was English. The native-likeness of the authors was checked from their bio-data available online or at the beginning or end of their published articles. The non-native speaker (NNS) corpus included the same number of conclusions written by Iranian non-native writers. The L2 writers are defined by a language learning culture that is strongly anchored in a country that uses English as a foreign language. The conclusion texts in the native corpus were taken from two leading applied linguistics journals, namely *Applied Linguistics* and *Journal of English for Academic Purposes.* The NNS conclusions were collected from articles published in Iran: *Iranian Journal of Applied Linguistics* and *Iranian Journal of Applied Language Studies*, with 100 texts taken from each journal. Table 1 illustrates the details of the corpus used in this study.

TABLE 1. Details of the corpus

| NS | | NNS | |
|---|---|---|---|
| **Journal** | **Number of texts** | **Journal** | **Number of texts** |
| Applied Linguistics | 100 | Iranian Journal of Applied Linguistics | 100 |
| Journal of English for Academic Purposes | 100 | Iranian Journal of Applied Language Studies | 100 |
| **Total** | **200** | **Total** | **200** |
| **Number of words** | **121,256** | **Number of words** | **119,785** |

The researcher carefully checked the closing section of the RAs to identify the conclusion section because in the field of applied linguistics, the final section could be discussion, conclusion or pedagogical implications. The section which provided the outline of the study conducted was regarded as the target section and thus selected for analysis. In most of the RAs selected for this study, the final section was labeled "conclusion" by the authors. The conclusion sections were extracted from the articles and stored and complied in the form of text, after removing any element or mark which was not necessary for the analysis (such as page numbers).

This study only focused on four-word units as lexical bundles. Hyland (2008) believes that four-word lexical bundles are more common than 5-word bundles and suggest a clearer range of structure and function than 3-word sequences. In order to retrieve and make a list of four-word lexical bundles, the computer software Wordsmith Tools was used. In line with previous literature and to identify the most prevalent lexical bundles in each corpus, certain frequency cut-off criteria were set for the computer program. Based on the small size of the two corpora, this research took a conservative approach in identifying the bundles by setting the cut-off point at occurring 40 times per million words which is equal to a minimum of 5 raw occurrences. Another criterion was to agree that a four-word string must also occur in at least 5 different texts in order for it to be included in the analysis. This criterion was necessary to guard against the subjectivity and idiosyncratic expressions introduced by individual writers.

The retrieved bundles were first classified structurally according to their grammatical types using Biber et al.'s (2004) categorisation. According to their taxonomy, lexical bundles belong to three main structural categories, including verb phrases, dependent clauses, and noun and prepositional phrases. Finally, analysis of the moves was carried out to identify the functions that lexical bundles convey in each move and its related step. The present study is also based on Yang and Allison's (2003) move organisation of RA conclusions so as to provide insight into functional analysis of the bundles used. They established three moves in the RA conclusions used in their study with some related steps as shown in Table 2.

TABLE 2. Yang and Allison's model of conclusion

| Moves | Steps |
|---|---|
| Move 1. Summarising the study | |
| Move 2. Evaluating the study | |
| | 1. Indicating significance/advantage |
| | 2. Indicating limitations |
| | 3. Evaluating methodology |
| Move 3. Deductions from the research | |
| | 1. Recommending further study |
| | 2. Drawing pedagogic implications |

As can be seen, RA writers use move 1, *summarising the study*, to provide a summary of their main findings in the study. Move 2, *evaluating the study*, is used to appraise the research in general in correspondence to the three related steps as shown in Table 2. They are used either to indicate the significance of the study or the limitation or to evaluate the methodology of the research. In move 3, *deductions from the research*, authors move a step forward and expand their results by recommending a new line for further research or drawing pedagogic implications (Yang & Allison 2003).

To compare the conclusions, the two groups of writings were subject to a quantitative analysis to investigate the frequency and structure of the lexical bundles used. A qualitative analysis included the investigation of the communicative purposes conveyed by the bundles in each move and step of the conclusions. The bottom up methodology was used in this study, that is, after identifying each of the lexical bundles, the corpus was analysed for the occurrence of the bundle to find out the communicative purpose that it served in the context. In order to establish a complete picture towards the communicative function of each bundle, all the tokens of each lexical bundle were analysed and checked carefully in their context. Furthermore, a second rater who had experience in doing move analysis helped the researcher in the identification of the communicative function conveyed by the bundles in moves in order to improve the reliability of interpretation.

## RESULTS AND DISCUSSION

### FREQUENCY OF OCCURRENCE

In each corpus, a list of target lexical bundles was generated from the computer software. The NS corpus included 48 lexical bundles, while only 35 bundles were identified in the NNS corpus. The most frequently occurring bundle in the NS corpus was *the findings of this*, with 25 occurrences. Following this bundle, the next most frequent were *in terms of the*, *findings of this study* and *the extent to which*, occurring 24, 22 and 20 times respectively. On the other hand, in the NNS corpus, the most commonly used bundle was *the results of the*, occurring 33 times, followed by *results of this study* and *of the present study*, with 26 and 23 occurrences respectively. Among the top ten most frequent lexical bundles in the conclusions of the two groups, the bundles, *findings of this study*, *on the other hand* and *the results of the* were shared in the two lists. This common tendency towards the use of such bundles suggests that RA authors are familiar with the prefabricated set of expressions and were able to easily access such expressions to report on their results in the conclusion section. It was also found that some bundles were specific to either of the groups. For example, the bundle *in English and Persian* was only used in the NNS corpus based on the specific domain being investigated by the Iranian writers. Table 3 presents the list of top ten most frequent lexical bundles in the two corpora, with the shared bundles highlighted in bold.

TABLE 3. The top 10 most frequent four-word lexical bundles in the two corpora

| NS | Frequency | NNS | Frequency |
|---|---|---|---|
| the findings of this | 25 | **the results of the** | 33 |
| in terms of the | 24 | results of this study | 26 |
| **findings of this study** | 22 | of the present study | 23 |
| the extent to which | 20 | **findings of this study** | 22 |
| **On the other hand** | 19 | The results of this | 20 |
| native speakers of English | 18 | can be concluded that | 19 |
| **the results of the** | 18 | **On the other hand** | 19 |
| this study suggest that | 18 | results of the study | 18 |
| in the context of | 17 | findings of the present | 16 |
| results of the study | 17 | the findings of the | 14 |

### STRUCTURAL DISTRIBUTION OF LEXICAL BUNDLES

Structurally, most of the identified bundles in this study belonged to one of the three main categories proposed by Biber et al. (2004). Results of the analysis revealed that majority of the bundles in the two corpora were phrasal rather than clausal. Previous studies have also reported that this is a characteristic of academic prose to be constituted from word combinations that are more phrasal than clausal (Biber et al. 1999, Biber & Barbieri 2007, Biber 2010). The most common structural type used by the two groups of writers was noun and prepositional phrases. It comprised 68% of the bundles in the NS and 65% in the NNS corpus. It seems that applied linguistics authors, regardless of being NS or NNS, relied heavily on a large range of noun-preposition combinations to report their findings briefly and sum up their study in the conclusion section of RA.

Table 4 illustrates that among the lexical bundles found in the NNS corpus, 25% were verb phrases (e.g. *can be concluded that*), while this structure only constituted 10% of the bundles in the NS corpus. As for the dependent clause fragments, the opposite result was revealed, that is, NS writers appeared to be more inclined to the use of dependent clauses than their L2 counterparts. This fluctuation of use clearly shows the variation in the language selection of the two groups of writers. Both NS and NNS authors were found to

rely more or less on the employment of certain multi-word expressions with different structures to provide summary in the conclusion section of their studies. Given the results, NNS authors seemed to find using verbs in the form of phrases more comprehensible for readers in the delivery of information than those of dependent clauses. On the other hand, the higher occurrence of dependent clause bundles in the NS corpus could indicate the NS authors' maturity in writing and their greater mastery of English structure.

TABLE 4. Structural distribution of lexical bundles

| | Verb phrase | Dependent clause | Noun and prepositional phrase |
|---|---|---|---|
| **NS** | 10% | 22% | 68% |
| **NNS** | 25% | 10% | 65% |

## LEXICAL BUNDLES AND MOVES

After analysing their structural characteristics, the identified bundles in the two corpora were analysed in their contexts, investigating the communicative function they carry out in the moves and steps in which they occurred. In each corpus, a number of identified bundles did not seem to occur and fit into any move or step of the move. Most of these bundles included shell nouns (Aktas & Cortes 2008, Cortes 2013, Schmid 2000), which is "a type of abstract noun that has little or no meaning in itself" (Cortes 2013, p. 40). This is the case of the nouns found in bundles such as *the fact that the* in the native corpus and *in terms of the* in the L2 writer corpus:

> Ex. 1) This may be due to ***the fact that the*** magazines analysed are addressed to experienced computer users. **(NS)**
> Ex. 2) the occurrence of pragmatic transfer in the refusals of the Persian L2 learners ***in terms of the*** frequency of semantic formulas **(NNS)**

In the above examples, the nouns *fact* and *terms* are realised in the context of a phrase to connect the prior information to the noun following the bundles. In general, bundles of this type were typically used in the conclusion section of RAs as some 'ready to go' expressions to serve some other communicative purposes (than those in the moves or steps) such as elaborating on the topic.

Table 5 presents the list of bundles which were used in the moves and steps of the two groups of conclusions. The bold items are those bundles which occurred in only one move or step and the bundles which are in italics are those which occurred in more than one move or a step of a move. The superscript numbers next to them show the number of moves or steps in which the bundle was used. As can be seen, the number of bundles which occurred in more than one move or step was greater in the conclusions of NNS than those of NS. It is widely accepted that speakers have some fixed expressions in their memory that work as a dictionary or lexicon. The higher recurrence of some lexical bundles in more than one move or step of the NNS conclusions could simply depict the L2 writers' smaller range of lexicon and knowledge of formulas. This phenomenon might have caused the writers to repeat the already known word combinations in other moves or steps to convey their communicative purposes. Another possible justification may result from the L2 writers' tendency to use the same standard and 'ready-made' expressions which they found the most frequent and thus required no processing. This peculiarity could be discussed based on the grounds that linguistic background of the writers can influence their language choice and selection of lexico-grammatical features.

TABLE 5. Lexical bundles in the moves of native and non-native conclusions

| Moves | NS | NNS |
|---|---|---|
| **Move 1. Summarising the study** | **the findings of this**<br>**findings of this study**<br>**on the other hand**<br>**the results of the**<br>**this study suggest that**<br>**in the context of**<br>**results of the study**<br>**results of this study**<br>**the results of this**<br>**in the field of**<br>**in the present study**<br>*of the present study* [2]<br>**be due to the**<br>**on the basis of**<br>**results of the present**<br>**this study is that**<br>**the way in which**<br>*in the use of* [2]<br>*of the study is* [2]<br>**of this study suggest**<br>*findings in this study* [2] | *the results of the* [3]<br>*of the present study* [3]<br>*this study can be* [3]<br>*findings of this study* [3]<br>*results of this study* [2]<br>*the results of this* [2]<br>**can be concluded that**<br>**on the other hand**<br>*results of the study* [2]<br>*the findings of this* [2]<br>**it can be concluded**<br>**results of the present**<br>*the effect of the* [2]<br>**be concluded that there**<br>**in the present study**<br>**the result of the**<br>*there seems to be* [2]<br>**were found to be**<br>*in the use of* [2]<br>*findings of the present* [2]<br>*the findings of the* [2]<br>*findings of the study* [2] |
| **Move 2. Evaluating the study** | | |
| Step 1. Indicating significance/advantage | **it is important to** | - |
| Step 2. Indicating limitations | **in terms of the**<br>*the nature of the* [2]<br>*of the study is* [2] | **of the study is**<br>*this study can be* [2]<br>*of the present study* [3] |
| Step 3. Evaluating methodology | **the use of a**<br>*in the use of* [2] | *in the use of* [2]<br>*the results of the* [3]<br>**in the process of**<br>**in the production of** |
| **Move 3. Deductions from the research** | | |
| Step 1. Recommending further study | **would be interesting to**<br>*the nature of the* [2]<br>**in a variety of**<br>**it would be interesting**<br>**that needs to be**<br>**research is needed to**<br>**the extent to which**<br>**of the need for** | *this study can be* [3]<br>*findings of this study* [3]<br>*the effect of the* [2]<br>*of this study can* [2] |
| Step 2. Drawing pedagogic implication | **the role of the**<br>**be made aware of**<br>*of the present study* [2]<br>**to be able to**<br>**EAP teachers need to**<br>*findings in this study* [2]<br>**as well as the** | *the results of the* [3]<br>*this study can be* [3]<br>*findings of this study* [3]<br>*of the present study* [3]<br>*results of this study* [2]<br>*the results of this* [2]<br>*results of the study* [2]<br>*findings of the present* [2]<br>*the findings of the* [2]<br>*findings of the study* [2]<br>*the findings of this* [2]<br>*of this study can* [2]<br>*there seems to be* [2]<br>**the present study can** |

Regarding the proportion and type of lexical bundles used in each move of the conclusions, Table 5 shows that both NS and NNS authors dedicated the largest number of bundles to move 1, which is *summarising the study*. This suggests that summing up the study is the most important function in writing the conclusion and is more likely to be an obligatory section. In addition, the two groups of writers employed equal number of bundles in this move, which again emphasises the significance of highlighting this move in writing RA

conclusion. As can be seen in the table below, the two groups of writers used a variety of bundles to summarise their study:

> Ex. 3) ***The findings of this*** study show that the structure of empirical RAs in applied linguistics tends to be flexible towards the … **(NS)**
> Ex. 4) ***The results of the*** present study showed that the students' with high ambiguity tolerance level have a higher level of metacognitive awareness of the reading strategies they use **(NNS)**

A further analysis of the bundles in this move revealed that this move is characterised by a number of words such as *results, findings, present* and *study*. Another interesting fact about the bundles which were used in Move 1 was that most of these bundles acted as a point of departure and were used at the initial position of the clause which started the move (see Examples 3 and 4). However, the rest of the bundles were used in the middle of the clause which contained the move and acted as a complement. Such use was more apparent in the native writing which reflects how professionally these writers relied on the use of lexical bundles to add more comments to the communicative function expressed by the move. In example 5 below, the move starts with the expression *in this paper*. The bundle *in the context of* was used in the middle of the long sentence to specify the domain which was covered by the study:

> Ex. 5) In this paper, I have argued for a multiperspective and multidimensional approach to critical genre analysis, which integrates the analysis of discursive and professional or disciplinary practices ***in the context of*** specific professional or disciplinary cultures. **(NS)**

In relation to Move 2, *evaluating the study*, results in Table 5 show that both groups of authors dedicated the least number of bundles to this move. This suggests that applied linguistic writers do not see the need to rely on prefabricated chunks to evaluate their study in the conclusion section. They may also choose to use other phrases or clauses than formulaic expressions to carry out the communicative functions related to this move. This was more evident in Step 1, *indicating significance/advantage*, in which NNS writers did not use any lexical bundle, and the bundle, *it is important to* was the only expression of this type used in the NS corpus (example 6). A possible reason for this low rate of use may be the fact that researchers usually provide significance of their study in other sections of RA such as introduction to attain credibility in their specific fields (Sandoval 2010). As such, the conclusion could be a more personal statement where prefabricated expressions may not seem appropriate to bring home the message that is specific to the study.

> Ex. 6) First, ***it is important to*** note that the effectiveness of the different modes of commenting may reflect the student's preferences. **(NS)**

Both NS and NNS authors performed similarly regarding the proportion of lexical bundles in Move 2, Step 2, *indicating limitations*. However, there were some variations regarding the type of bundles used for this purpose. As noted above, the bundle *in terms of the*, did not fit into any move or step of L2 writer conclusions, but data analysis revealed that NS authors used this bundle or *the nature of the*, in Move 2, Step 2 to discuss the limitations of their study::

> Ex. 7) Clearly, however, the present study is somewhat limited ***in terms of the*** size of the corpora and the disciplines examined. **(NS)**
> Ex. 8) Unfortunately, ***the nature of the*** present material does not allow us to test the reliability of this interesting finding by Є Oberg. **(NS)**

In example 7, the author used the bundle *in terms of the*, to refer to the confines of the study, which were the size of the corpora and the discipline under investigation. In example 8, the native writer also showed the limitation of the study and explained the reason why testing the reliability of the obtained finding is impossible by using the bundle *the nature of the*. In both examples, the noun phrases which followed the bundles indicate the limitations of the two studies.

However, using such word combinations to refer to limitations of the study was not found in the conclusions written by the NNS authors. Instead, they tended to use bundles containing the word *study* to do so. It is necessary to mention that, in the NNS corpus, apart from occurring in Move 1 (example 9); the bundle, *of the present study* was also used in Move 2, Step 2 to show the limitation of the research (example 10):

> Ex. 9) The findings ***of the present study*** demonstrated that learners who are highly tolerant are likely to use metacognitive reading strategies more frequently. **(NNS)**
> Ex. 10) The fact that the study was small scale in nature constitutes the first limitation ***of the present study***. **(NNS)**

Similar to other steps of Move 2, only a few lexical bundles were used in Move 2, Step 3, *evaluating methodology*, of the two corpora. This may partly be due to the fact that RA writers strive to provide the readers with such evaluation in other sections of the RA than in the conclusion. In most cases, the methodology section is where the researcher exclusively presents and elaborates on such evaluation. The more obvious function of the methodology likely dissuades such repetition in the conclusion section, and as a result, the writers used few examples of lexical bundles for this communicative purpose. It would appear that this function is seen to be insignificant in the conclusion section where a recursive action of referring to the methodology is unnecessary.

With regard to the variations across the two groups, Table 5 reports that L2 writers employed a few more bundles in this step than their native counterparts. This higher concentration might be attributed to the L2 writers' perception that such referencing through the use of formulaic bundles serve to emphasise the accuracy of the methods used as a convincing approach to support the findings presented in the conclusion. As can be seen in the table, the bundles *the use of a* and *in the use of* were the only bundles of this type which occurred in the NS conclusions. The L2 authors relied on some other prepositional phrases such as *in the process of* and *in the production of* to evaluate their method:

> Ex. 11) However, ***in the process of*** materials selection, reorganization and sequencing, three kinds of consideration were stressed **(NNS)**

Regarding the bundles which were used in more than one move or step, results demonstrate that both groups of authors employed the bundle *in the use of* in Move 1 as well as Move 2, Step 3. Another finding was that, apart from summarizing the study (example 4), the bundle, *the results of the* was also used by the NNS writers in Move 2, Step 2 to evaluate the methodology, as in:

> Ex. 12) With regard to ***the results of the*** t-test which was run to compare the obtained means on the recall test … **(NNS)**

Data analysis reports that Move 3, *Deductions from the research* accounted for the most linguistic variations in the language use of the two groups of writers regarding lexical bundle/move relationship. As regards to Step 1, *Recommending further study*, English NS authors used twice as many lexical bundles as their NNS counterparts. This highlights that

NS writers have a more ready store of such formulaic language in providing recommendations for future research. Another variation regarding this step was with the type of bundles used in the two corpora. In this regard, the four lexical bundles used by the NNS authors also occurred in other moves or steps (*this study can be*, *findings of this study*, *the effect of the*, *of this study can*). This lack of diversity in the creation or employment of other expressions implies that L2 writers were less assertive to the use of formulas to give recommendations and could also possibly denote a cultural inhibition towards a more modest approach in making such assertions. By contrast, except for the bundle *the nature of the*, all the other bundles in Move 3, Step 1 of English native conclusions were specific to this step and were not found to be used in any other move or step (see Table 5). Such diversity could mirror the more varied language use of the English native writers and also the use of specific lexical bundles according to perceived appropriateness for expression. This brings into question the style of academic writing which is likely more mature among NS writers. Thus, a comparison of styles could highlight what are considered development 'habits' as opposed to an emerging style of L2 writers. The following are two examples of the bundles used in this step:

> Ex. 13) Future ***research is needed to*** find out more about how groups of NNES international graduate students interact with each other. **(NS)**
> Ex. 14) ***It would be interesting*** to investigate the approaches of other native speakers who lecture to international audiences with additional comparative studies, or also by means of survey instruments. **(NS)**

Unlike in Step 1, the employment of lexical bundles in Step 2, *Drawing pedagogic implication*, was more dominant in the L2 writer corpus, with 14 bundles, as compared with only 7 bundles in the NS corpus. This higher inclination depicts that L2 users were more reliant upon the use of formulaic expressions in presenting implications of their research. The pedagogical implication serves as an important element in writing RA conclusions, where a writer has the chance to provide contribution to his field of specialization and become a credible researcher in the discourse community. In order to attain such credibility, the L2 writers are required to organise their language in a way that asserts the academic voice. Overreliance on lexical chunks could lead to diluted writing. Thus, there needs to be a balance between the use of prefabricated chunks and that of "owned" language that has the ability to hold the reader engagingly.

Another finding was that each group of authors seemed to utilise different sequences of words in this step to draw pedagogical implications of their study. As such, nearly all the L2 bundles in this step were those which had already been used in other moves, except for *the present study can*. In contrast, native authors employed a wider range of bundles specific to this step such as, *to be able to*, *EAP teachers need to, the role of the, as well as the,* and *be made aware of*, which were used to help provide implication for the studies:

> Ex. 15) Students could ***be made aware of*** disciplinary variations in discourse values manifested in research papers in academic writing courses. **(NS)**
> Ex. 16) In fact, for students ***to be able to*** write as professionals and contribute meaningfully to those scholarly conversations, they first need to immerse themselves in those conversations and be aware of them. **(NS)**

The only shared bundle in this step of the two groups was, *of the present study*. However, findings show that it occurred differently in the two corpora. In the NS corpus, apart from it occurring in Step 2 of Move 3 to show implication (example 17), it was also used in Move 1 to summarise the study (example 18):

Ex. 17) the implications of the results ***of the present study*** for teaching of negotiation skills would mean that it would useful to break down the teams goals for the 86 T. **(NS)**
Ex. 18) The aim ***of the present study*** was to determine whether the use of selected metatext categories – previews and reviews – is more limited in Slovene RAs than in English RAs. **(NS)**

In the L2 writer corpus, this bundle occurred in all the three moves. As already explained, together with occurring in Move 1 (example 9) and Move 2, Step 2 (example 10), it was also used in Step 2 of Move 3 to draw implications of the research:

Ex. 19) The findings ***of the present study*** can have implications not only for teachers and learners, but also for materials developers. **(NNS)**

## CONCLUSION

The present study aimed to compare the use of four-word lexical bundles in RA conclusions written by native English and non-native Iranian authors in applied linguistics and to find the relationship between lexical bundles and the moves and steps in which they were used. By using a corpus-driven approach, the conclusions of the two groups were analysed and compared in terms of frequency of occurrence, structure as well as the communicative function each lexical bundle conveyed in relation to the rhetorical structure of the conclusions. Findings revealed that NS writers were generally more inclined to use formulaic expressions in writing conclusions. They were also more mature in employing those expressions for conveying particular discursive and genre-specific functions. However, the use of some bundles was more prominent in the writing of L2 authors. Structurally, they used more verb phrases to construct bundles, while conclusions written by NS writers contained more examples of dependent clause bundles.

Further analysis of the communicative functions of the bundles in the moves and steps revealed some similarities and variations between the two groups of conclusions. First, in both corpora, a number of bundles were not found to be used in any of the moves or steps. These bundles were typically used in the conclusion section to carry out some other functions than those related to move or step, such as organizing the language or giving reference. Previous studies have also found these functions to be prevalent in academic discourse (Biber et al. 2004). Second, the largest number of lexical bundles in the two groups occurred in Move 1, *summarizing the study.* This could reflect the significance of this move as being obligatory in writing RA conclusions. Many of these bundles were found to be used as a point of departure to initiate the communicative purpose of this move, whereas few others were used in the middle of the sentence containing the move. The least number of lexical bundles in the two groups was found in Move 2, *evaluating the study*. Finally, the two groups of writers performed differently with regard to the application of bundles in the two steps of Move 3, *deductions from the research*. The NS authors used more lexical bundles in Step 1, *recommending further study*, while in Step 2, *drawing pedagogic implication*, the number of bundles was found to be greater in the L2 writer corpus. Another linguistic variation reported in this study was that in each corpus, a number of bundles occurred in more than one move or step of a move. On the whole, the number of these bundles seemed to be higher in the L2 writer corpus, which reflects the control of a narrower range of formulaic language. For example, bundles such as *the results of the*, *of the present study*, *this study can be*, and *findings of this study* were used in all the three moves of the L2 conclusions.

With an exemplar-based view of language processing, learning could involve the ingestion of a set of formulaic chunks and with firm practice could be stored in the memory of a learner for long term use. The chunks could then be retrieved holistically at an appropriate time of use with the most efficient processing time (Bolinger 1976, Lewis 1993). There is a common consensus among the scholars that the formulaic chunks frequently used by native speakers can help mentor L2 learners. The more language learners are exposed to these chunks, the higher the probability of learning them. Findings in this study can be of great value to writing teachers working in English for Academic Purposes (EAP). As a result, EAP practitioners could develop academic writing by exposing language learners to frequently used formulaic bundles used by native speakers in academic settings made accessible through corpus investigation. In addition, findings of the present study can assist academic writing instructors in planning fruitful instruction on writing the conclusion section of RA. Making a connection between the organisational moves of RA conclusion and the communicative function of lexical bundles, as found in this study, could also inform EAP writers about the context of use of the bundles in conclusion. For example, bundles such as *the results of the,* or *it can be concluded* are necessarily related to a particular move which is used to summarise the findings of the study. The bundles provide a useful lead in to fulfill reader's expectations and the reader-writer relationship is enhanced. In addition, beginning writers could be cautioned about overreliance on certain bundles as writers also need to develop an individual style which shows maturity and the ownership of an academic voice.

Finally, cross-disciplinary investigations on the use of lexical bundles in RA conclusion or other sections can also be a motivating topic for future research in academic writing. Writing a conclusion for applied linguistics articles may be a very different endeavor for those in the pure sciences. Writing an effective conclusion for a research article is indeed a skillful act. The ability to use lexical bundles to sum up a research article would go a long way towards successful writing and successful reading at the same time.

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