Lexical Bundles: A Corpus -driven investigation of Academic Writing Teaching to ESL Undergraduates

Liu Kanglong[1] and Muhammad Afzaal[2]
[1]*Assistant Professor, Department of Chinese and Bilingual Studies,*
The Hong Kong Polytechnic University, Hong Kong.
[2]*Institute of Corpus Studies and Applications, Shanghai International Studies University, China,*
Foundation University Islamabad, Pakistan.

(Corresponding author: Muhammad Afzaal)

ABSTRACT: Teaching academic writing is a big challenge for teachers and ESL learners, more particularly in non-native countries. Lexical bundle' is relatively a new term in the field of applied linguistics. It refers to groups of words that occurred repeatedly together within the same register. The current study investigates the effects of teaching lexical bundles on the writing performance of 34ESL undergraduate students at a university in Pakistan, as well as their attitudes' concerning the role these fixed-word strings play in the development of Second language writing skills. Findings of a participant questionnaire revealed that the majority believe learning lexical bundles will develop their L2 academic writing skills. This study has implications for the field of corpus linguistics and Second language teaching, as it constitutes a corpus-driven study by investigating the role of lexical bundles on writing performance, and aids in the understanding of students' attitudes towards their writing needs.

I. INTRODUCTION

English as a foreign language learning is vital for non-native English-speaking countries where English is official language such as Pakistan, India, Sri-Lanka and Hong Kong etc. ESL learners face plenty of problems in the beginning such as cohesion, connectors, repetitions, construction of phrases, sentences and use of lexical items accurately in conveying their message in academic writing. Lexical bundles help the students to understand the patterns of language that are constructed by the speakers, [30].

A. Lexical bundles

Known as a chunk or cluster [15] the term 'lexical bundle' is relatively new in the field of applied linguistics, and may be defined as a sequence of at least two words which often occur together in a fixed-string while not being idiomatic [2]. Common examples of lexical bundles are phrases such as 'in the current study, 'as a result', and 'on the one hand'. Although lexical bundles occur with some frequency in language [5], as well as 10 point out that acquiring and using lexical bundles adequately does not occur as might be expected. Many scholars have concluded that even though professionals in academia incorporate myriad lexical bundles into their writing as a way to further their argument and convince readers, the same is not true of students who are writing in these same academic fields [5, 6 9, 16, 17]. The ability to construct coherent, cohesive academic texts is an important skill in order to be considered an expert in one's academic field. Therefore, it is necessary that students of higher education improve their academic writing ability in L2 and be aware of which phrases and constructions are most prevalently used by the expert writers in their field of study [14, 16]. This paper explores the effectiveness of lexical bundles on the improvement of academic writing performance.

B. Previous studies

The majority of studies conducting research on lexical bundles utilize a corpus-based method and are keen on defining which bundles are used in a certain academic field or on how lexical bundles vary in occurrence and kind among different disciplines, genres, registers, or level of writing skill [4, 11, 13, 20]. Furthermore, several studies have been carried out concerning various methods of instructing students on combinations of words which frequently occur together. In [24], the author offers various methods for introducing collocations to students while, [28] suggests some strategies that may assist L2 students in improving the size of their academic writing toolbox, including the use of these strings of recurrent word combinations.

In addition to the previously mentioned studies, a limited amount of previous research has focused on the effect of lexical bundles being explicitly taught in a classroom and whether or not ESL students view the instruction of bundles as an effective way to improve writing ability [10]. One such study carried out by [18], who introduced how to use various fixed-word expressions to a group of non-native speakers of Englishover a period of 10 weeks. On one hand, the findings of their study showed that the instruction period resulted in only subtle improvements in the students' usage of these fixed-word expressions, while on the other, it was found that the participants of the study did in fact have a disposition toward using the expressions they were taught. In a study done by [11], the participants, university students in a writing-focused history class, participated in five 20-minutes classes in which lexical

bundles were explicitly taught. Results of a pretest/posttest production task showed that there was no significant effect of the explicit instruction of lexical bundles. It was suggested by the author that the time limitation of only five 20-minute classes was a possible factor. However, it was reported that the participants showed an interest in and a better overall awareness of lexical bundles at the end of the study.

Another study which explored how teaching lexical bundles effects the writing ability of university students majoring in English was conducted [21]. In their paper, the authors investigated the effect of teaching lexical bundles on the writing performance of twenty Iranian Master's level Teaching English as a Foreign Language (TEFL) students. The participants were introduced and instructed in the most frequently used lexical bundles in their field of study and were given a pretest and posttest to find out whether using more lexical bundles resulted in greater performance on writing assignments. The authors suggested that the four 90-minute sessions were of 'significant help' to the participants writing ability.

C. Motivation and aim of the study

While the national language is Urdu, English is the official language. English is considered to be the language of the elite in both formal (education, work, etc.) and informal (personal interactions, entertainment, etc.) spheres of life [20]. As a result, English in Pakistan is a much sought-after language to master by many Pakistani people. Interestingly, despite its status and desirability, English is still considered to be a second language in the country [22]. In terms of education, English is not only a compulsory subject for undergraduate and postgraduate students, but also the primary medium of instruction. In fact, degrees in the sciences, humanities, and social sciences are only awarded after students have passed an English language exam [1]. Although English enjoys a high social status and is a requirement for many higher education students, there is still a lack of qualified English teachers in Pakistan17and, according to one scholar, "the excellence of the teachers, their qualification, above all, their expertise, all are disappointing" [25]. Thus, the motivation of this study stems from the contrast between the status of English in the university system, the lack of qualified English as a second language teachers, and the necessity of adequate academic writing skills in academia.

The aims of this study can be grouped into two categories. The first category is related to the effect of teaching lexical bundles on the writing performance of undergraduate students. The second concerns students' attitudes toward the helpfulness of bundles for academic writing. The first aim of this study is to investigate how significant the effect of teaching lexical bundles has on ESL undergraduate students' writing performance. For this paper, writing performance is based on four different criteria: content, structure, style, and grammar. Content refers to the quantity and complexity of ideas as well as their relevance to the central topic of the text. Structure pertains to the coherence and cohesiveness of the text (e.g. transitions, connectors, discourse markers). Style concerns the use of a variety of sentence structures that are both well-constructed and unique in L2. Lastly, grammar is focused on the quantity of grammatical errors. This definition of writing

performance and the criteria on which the assessment is based comes from the evaluation tool used in the current study, a 20-point grading rubric for academic writing from Tulane University, U.S.A.A second aim is to explore differences in writing performance by female and male participants in Pakistan. This is motivated by the emergence of data suggesting that female adolescents perform better than males on reading and writing activities [31]. This extends to second language learning activities that measure abilities such as: vocabulary, speaking, listening, reading and writing. Several studies have noted that the among second language learners, females perform better than their male counterparts in terms of rhetorical ability, [12, 13, 23, 26, 32].

The third aim is to find out the extent to which students are exposed to lexical bundles. This is relevant given the aforementioned status of English in Pakistani universities and their importance in the composition of academic texts. The final aim is to investigate Pakistani undergraduate students' attitudes toward the helpfulness and importance of lexical bundles for improving their academic writing performance. Currently, there are no known studies investigating the effect of teaching lexical bundles on the academic writing ability of undergraduate English majors in Pakistan. The current study attempts to fill this gap in the literature.

D. Research questions and hypothesis

Based on the motivation and aims above, this study tries to answer the following research questions.
1. What is the effect of teaching lexical bundles on the writing performance of second language undergraduate students? How large is the effect?
H_0:Teaching lexical bundles to second language undergraduate students has no effect on their writing performance.
$H\alpha$: Teaching lexical bundles to second language undergraduate students has an effect on their writing performance in L2.
2. What is the effect of gender on the participants' writing scores?
H_0: Gender has no effect on writing scores.
$H\alpha$: Gender has an effect on writing scores.
3. To what extent are undergraduate students exposed to lexical bundles by their instructors in their academic writing in the second language?
4. What are the attitudes of Pakistani undergraduate students toward the helpfulness and importance of lexical bundles for improving their academic writing skills?

In order to assess significant differences, inferential statistical analysis was carried out on questions (1) and (2) in the form of paired-sample t-tests, with Cohen's d being used to measure effect size. For questions (3) and (4), descriptive statistics were generated due to their qualitative nature.

II. METHODOLOGY

A. Participants

The study selects one class of 34undergraduate students (17 females, 17 male) for the participation. All participants were English majors taking a course on academic writing at Education University in Multan, Pakistan. These participants have already passed the foundation courses of English language in their third

semester. Due to the previous discussion of the English language requirements at the undergraduate level in Pakistan, the participants are expected to have a solid foundation of English language skills. Because the entire group of 34 participants underwent the same treatment (i.e. an instruction session on lexical bundles), and there is no control group (i.e. a group who does not undergo the treatment), this study can be categorized as a quasi-experimental one-group pretest-posttest design.

B. Materials

The materials used to conduct the study were: 1) a pretest writing assignment completed by participant before the teaching session on lexical bundles, 2) a posttest writing assignment given after the session, and 3) a questionnaire based on the one given in [21] which contains 16 items and is aimed at eliciting the participants' attitudes toward the helpfulness of lexical bundles. A 5-point Likert scale was used and all items were written in English. Internal validity of the questionnaire was confirmed by three different university instructors see [21]. Moreover, a pilot study of 10 students calculated the reliability value to be 0.76 using the KR-21 formula Pretests and posttests were graded by a professor not involved in this research paper.

C. Procedures

Data for this study was collected over a period of two months in three different sessions. In the first session the participants were instructed to write a short essay of 500 – 750 words on 'The importance of vocabulary in English language reading comprehension' (the pretest). In the second session, participants were introduced to lexical bundles by an instructor who first presented a power point presentation on what lexical bundles are, why they are important, the most frequently used bundles in the fields of applied linguistics and English literature, examples of lexical bundles in context, and the functional categories of bundles (the treatment). Immediately following the introduction to bundles, the participants completed several comprehension-check exercises, including: gap-fill exercises, matching exercises, and classification exercises. As a visual aid, the participants were also given a handout of the 40

most-frequent lexical bundles used by professionals in applied linguistics and literature according to a list compiled by [19]. In the third session, participants were again tasked with writing a short essay of 500 – 750 words on the same topic as the pretest 'The importance of vocabulary in English language reading comprehension' (posttest). On the posttest paper, the instructions encouraged the use of lexical bundles learned during the previous instruction session. After the posttest writing assignment, the questionnaires were distributed to gather information about attitudes toward the helpfulness and importance of lexical bundles and whether or not it is felt that they will aid in the ability to produce a more organized, well-structured text.

III. RESULTS

The research questions underpinning this study seek to discover 1) the relationship between teaching lexical bundles and the writing scores of EFL undergraduate students, 2) the relationship between gender scores, and 3) students' attitudes and experiences regarding the use of lexical bundles in their second language academic writing.

A. Pretest and posttest results

(i) Relationship between teaching lexical bundles and writing scores

In order to determine whether a significant difference exists between the pretest and posttest scores, a paired-samples t-test was conducted to compare the participants' writing scores before the teaching session on lexical bundles and after it. Figure 1 reports the mean, sample size, and standard deviation of both groups.

Table 1: Mean, sample size, and standard deviation of the pretest and posttest scores. p < 0.05.

Group	Mean	N	SD
Pretest	8.97	34	3.19
Posttest	12.26	34	4.41

The results of the t-test show there was a significant difference in the pretest score (M=8.97, SD=3.19) and the posttest scores (M=12.26, SD=4.41); $t(33) = 5.0947$, $p= 1.395^{-5}$.
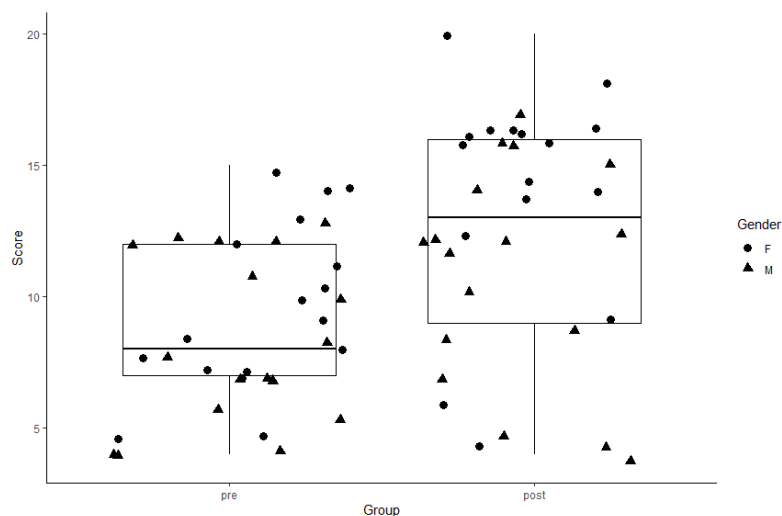

Fig. 1. Boxplots of distribution of scores by group. Data is jittered by gender so the quantity and distribution of scores.

Fig. 1 shows the distribution of writing scores by group. Male participants are indicated with a triangle and females with a circle. Results show that the median score of the posttests lies outside the of the pretest box indicating a likely difference between the groups. Findings also display a wider distribution of scores in the posttest scores compared to the pretest, meaning greater variability among scores in that category.

(ii) Effect size of teaching lexical bundles on writing scores
Although Cohen's (1988) interpretation of effect sizes, small (d= .2), medium (.5), and large (.8) is often used as a standard for reporting effect size, this study adopts [25] benchmark which is specifically tailored to research on second language acquisition. Because English is not the study participants' first language, this benchmark was chosen. [29] argue that Cohen's scale "underestimates the range of effects typically obtained in L2 research" and that it "should not generally be applied to L2 research". As an alternative, they propose the following scale for measuring effect size: small = (d = .40), medium = (.70), and large = (1.00). According to this scale, the effect size for the analysis of teaching

lexical bundles on the writing scores of the participants (d = .87) indicates a medium effect.

(iii) Relationship between gender and writing scores
To determine the significant difference between genders in pretest and posttest scores, additional paired-samples t-tests were performed. One tested the difference between genders in the pretests and the other the difference between genders in the posttests.

Table 2: Mean, sample size, and standard deviation of the pretest and posttest scores by gender. p < 0.05.

Group	Size	Male M	Male SD	Female M	Female SD
Pretest	34	8.35	3.20	9.59	3.14
Posttest	34	10.88	4.18	13.65	4.30

The results of the first t-test report no significant difference in the pretest scores of the females (M = 9.59, SD = 3.14) and the pretest scores of males (M = 8.35, SD = 3.20); t(16) = 1.2858, p = 0.2168. Results of the second test indicate a significant difference in the posttest scores of the females (M =13.65, SD = 4.30) and the posttest scores of males (M = 10.88, SD = 4.18); t(16) = 2.2544, p = 0.03854.
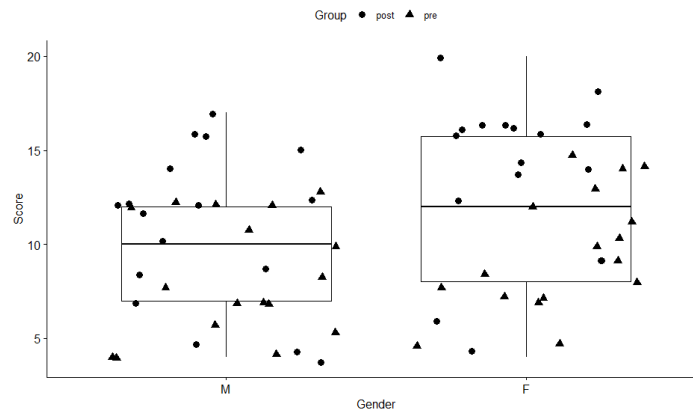

Fig. 2. Boxplots show distribution of scores by gender. Data is jittered by group so the quantity and distribution of scores is clearer.

The pretest scores in Fig. 2 are shown as triangles and the posttests as circles. Data shows the female group's median score was higher than the males. The results also reveal that scores of the female participants vary more than those of the males.

(iv) Effect size of gender on writing scores
Using [29] scale for effect sizes (small, d = .40; medium, d = .70; large, d = 1.00), analysis on the effect size of gender on pretest scores (d = .31) shows a small effect size. A small effect size was also reported concerning the effect of gender on posttest scores (d = .55).
To summarize, a significant difference was reported between the pretest and posttest groups. Additionally, whereas no significant effect was found between genders and pretest scores, the opposite was true of gender and posttests scores. A medium effect size was indicated on the effect of the treatment (i.e. the teaching session on lexical bundles) on scores, while the effect size of gender on both pretest and posttest scores was found to be small.

B. Questionnaire results
The aim of the questionnaire was two-fold. The major aim was to find out whether or not the participants held

positive views on the helpfulness and importance of lexical bundles concerning the development of their academic writing ability. A secondary aim was to assess their prior exposure to bundles. The first aim was addressed in items 2, 3, 4, 6, 7-16, while the second was done so in items 1 and 5.
Fig. 2 shows given to the participants after the posttest writing task. The first column displays the statement responded to by the participants. Descriptive statistics on the mean and standard deviation are included in the two columns which follow. The final column, '%', refers to the percentage of participants agreeing with the statement (e.g. 68% rated item 1 as a 4 (agree mostly) or 5 (strongly agree) on the Likert-Scale, meaning (68%) claimed to have little to no experience with lexical bundles prior to this study). A response of 1 or 2 on the Likert-Scale was considered a disagreement. A response of 3 (neither agree nor disagree) was likewise counted as disagreement the findings of the questionnaire because of its failure to agree with the statement thus detracting from the overall percentage of participants who agreed.

Table 3: Statistics of *Questionnaire Results*.

Item		Mean	SD	%
1	I didn't have much experience with lexical bundles before this program.	3.50	1.15	68%
2	I found this experience with lexical bundles satisfying.	4.25	0.75	90%
3	I will pay more attention to using lexical bundles in my future writings.	4.69	0.82	94%
4	I want to learn more about lexical bundles because my current knowledge about them and ability to use them is not enough.	4.41	0.92	87%
5	I haven't received sufficient help, training, and helpful advice from my writing instructors on appropriate use of lexical bundles.	3.06	1.51	35%
6	Advanced writing instructors should give special importance to teaching lexical bundles.	4.63	0.62	94%
7	Getting familiar with lexical bundles is mostly needed by students who want to write and publish in my field, i.e., applied linguistics, English, literature, translation, etc.	4.38	0.97	81%
8	Using lexical bundles helps me point out my ideas more clearly.	4.47	0.95	90%
9	Using lexical bundles in writing is meaningful and improves the organization of my writing.	4.56	0.72	94%
10	The application of lexical bundles promotes my writing interests.	4.44	0.68	84%
11	Using lexical bundles enhances my thinking ability.	4.56	0.66	90%
12	I believe that appropriate use of lexical bundles improves the quality of my writing.	4.81	0.85	90%
13	Knowing and using lexical bundles will respond to some of my needs in writing.	4.28	0.73	77%
14	By knowing lexical bundles, I will be better prepared to work through my future problems in writing.	4.63	0.87	90%
15	By using lexical bundles, I will be more successful in academic writing.	4.66	0.91	87%
16	Overall, I think lexical bundles are very important and useful for improving my writing ability.	4.84	0.93	81%

(i) Summary of questionnaire results

The majority of participants held positive views (e.g. viewing bundles as helpful and important) toward the learning of lexical bundles for the improvement of their academic writing skills. In other words, they generally believed studying lexical bundles will lead to better performance in academic writing. Participants gave items concerning helpfulness and importance an average rating of 4.5 (M = 4.54). This means that participants' attitudes toward the helpfulness and importance of lexical bundles is mostly positive. Explicitly, participants found the teaching of lexical bundles in the classroom both helpful and important for making gains in academic writing skills. Findings also show that some of the participants have in fact been exposed to lexical bundles. On average, participants gave a rating of 3.28 (M = 3.28) to items 1 and 5, which both concern prior exposure to bundles. This suggests that lexical bundles are neither completely non-existent nor a major theme in the English language classrooms of Pakistan. While the previous discussion describes the overall trends found among the participants, the following sections offers more details on the responses given to individual questionnaire items.

(ii) Questionnaire results by item

21 out of 31 participants (68%) said they had little to no prior exposure to lexical bundles (item 1).These findings are not completely surprising given that the participants are undergraduate students in "a predominantly ESL (English as a second language) country" [22]. It does, however, provide an interesting contrast with the large influence and elevated status of English in Pakistan's higher education institutions [27, 8, 6, 7] 13 of 31 (42%) agreed with the statement in item 5 that they had not received sufficient help, training, and helpful advice from my writing instructors on appropriate use of lexical bundles. The majority of responses regarding attitudes about the helpfulness and importance of studying lexical bundles were positive (items 2, 3, 6, 8, 9, 11, 12, 14 ≥ 90%; items 4, 16 > 85%; items7, 10, 16 > 80%; item 13 > 75%).

To recap the highlights of the survey, almost all (94%) of the participants indicated that they would likely pay more attention to bundles in the future, that it aids in their ability to organize a text, and teachers should pay special attention to them when teaching. Precisely (90%) said that it aids them in expressing ideas more clearly, enhances their thinking ability, improves their quality of writing, and better prepares them for future writings. Between (81%) and (87%) of participants expressed a desire to learn more about bundles, believe it will help them get published in their field, that it promotes their interest in writing, causes them to believe they will be more successful in academic writing, and share an overall positive attitude that lexical bundles are both important and helpful for improving their writing ability. (77%) think that knowledge of lexical bundles responds to some of their writing needs. Lastly, the majority of participants (68%) admitted no prior experience with bundles with some (42%) stating they hadn't received much instruction regarding them.

IV. DISCUSSION

This study investigated the effects of 1) teaching lexical bundles and 2) gender of ESL undergraduate students of writing performance in L2. It also sought to find out if students view the teaching of bundles as an important tool for their development as academic writers. Through a single-group pretest/posttest design implemented in a Pakistani university academic writing course involving 34 undergraduate students, analysis of the collected data found that the instruction session on lexical bundles had a significant effect on the participants writing scores, and that this effect was in the medium range. In addition, gender appeared to be a non-significant factor, with the effect being limited in size. Concerning the questionnaire given to the participants post-treatment (i.e. after the posttest), a significant gap was found between the frequency with which lexical bundles are taught to students and how much they feel it could aid their writing performance.

The most significant finding from the current study is the effect of teaching lexical bundles on the writing scores of the participants. In this study, the increase in writing scores after being explicitly taught about the importance and appropriate usage of lexical bundles was deemed significant. This finding is consistent with at least one former study that obtained similar results [21]. This is an important finding when contrasted with the results of the questionnaire; which found that the majority of participants had little to no prior experience with bundles while additionally expressing they believed bundles would help them become better writers. This is relevant for those who teach academic writing courses because it exposes areas in which course syllabi could be improved. However, there are several alternative explanations for the improvement on writing scores in the posttest. Being that the participants were enrolled in an academic writing course, the effect could be due to the fact that students taking such courses are expected to improve anyway. The improvement could also be a result of other changes in their writing ability, not related to lexical bundles (i.e. improved grammar, more varied sentence structures, usage of more complex vocabulary). A final explanation could be that in writing the posttests, the participants were simply recalling and 'polishing' their pretest compositions. Nevertheless, this could be an eye-opening insight for those seeking to improve the second language academic writing skills of their students.

Another important finding per the study is the relationship between gender and writing scores. Initially, there was little to no difference between the pretest scores based on gender, however, analysis concluded that gender did have an impact on the writing scores in the posttest, as the female participants tended to show greater improvement than males. This supports the claims of several other studies [12, 13, 23, 31] which suggest that females tend to perform better in terms of reading, writing, and rhetoric. This outcome is pertinent to teachers, as it indicates that male undergraduate students could require additional support in academic writing courses.

In regards to the questionnaire, the overall positive attitude toward lexical bundles raises an interesting point regarding the discrepancy between participants' prior exposure to lexical bundles versus their attitudes toward their helpfulness. As mentioned earlier, all items concerning attitudes about the helpfulness of lexical bundles in the development of academic writing skills was greater than (>75%), however, (68%) of participants reported having zero to nearly zero experience with bundles prior to this study. This finding is relevant for those who teach writing courses because it exposes possible gaps in the course planning, that is, areas in which academic courses on writing can be improved. Moreover, the questionnaire gives insight into what students believe may help them improve their academic writing. The major take away from this questionnaire is that there is gap between participants' positive attitudes toward the learning of bundles and the frequency at which (if any) they are incorporated into English academic writing courses in Pakistan.

One limitation of the current study was the lack of a control group. Without the inclusion of a such a group, it is difficult to ascertain the true effect that teaching lexical bundles had on the participants' scores. Had a true control group been utilized for comparison, a more accurate assessment of the significance of treatment and gender could have been given. Another limitation was the absence of biographical information on the participants (i.e. L2 proficiency, age, and study habits). Had information on the participants' backgrounds been known, a more in-depth analysis on the differences between groups could have been carried out, resulting in a clearer picture of what caused the change in scores. This study has practical implications for instructors and students of English related majors alike. For example, it was reported that after a teaching session on lexical bundles, there was an increase in the writing performance of the participants. Therefore, it may be worthwhile for instructors to consider including them in their academic writing course syllabi. Additionally, students seeking to improve their capacity as academic writers could look to studying lexical bundles as one method of developing their skills. Instructors may also take note that there are a number of studies (including this one) which suggest that male students struggle more with producing academic texts than their female counterparts. There was overwhelming support from questionnaire data for the idea that students believe lexical bundles will help them improve their writing performance. For future research, it is recommended that a control group be included for comparison. Finally, the inclusion of more biographical information on the participants, such as L2 proficiency, could be elicited in order to provide a better analysis of the differences between participants.

Lexical bindles are combined in a standard way to carry information in English language. These are classified into many categories such as connectors, adjectives, lexical verbs, and adverbs. Therefore, teaching of lexical bundles is a dire need to the students of academic writing to learn the construction of academic sentences which will be no doubts beneficial for them. [2] argues that 'the study of lexical bundle is important because they occur in sequence in different registers. In this paper, the focus is given on the words that create a cohesion in academic writing.

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