



## Analysis of Collocations in a Book Chapter and Learners' Corpus and Teaching Implications

### Kalıplaşmış Sözcük Öbekleri Üzerine Bir İnceleme ve Öğretime Dair Öneriler

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**ABSTRACT:** Studies have often focused on words that should be learned, and investigations have been conducted on the lexical profiles of texts. Although there has been some interest in collocations, investigations have often concerned academic research articles. The academic texts freshman students normally read have been relatively understudied. This study aimed to identify the collocational profile of a book chapter, and the collocations used in students' writing examination papers in response to a question on the theme of the chapter. The first corpus included 3253 words while the second one included 4917. Results showed that 17.31% of Corpus 1 included collocational usages, with the types 'adjective + noun' and 'verb + adjective + noun' used most commonly. Corpus 2 showed a 7.69%-collocational coverage, heavily based on the type 'verb + noun'. Possible reasons for these differences are discussed, and recommendations are offered to increase learners' competence in using collocations.

**Keywords:** collocation, academic writing, book chapter, learners' corpus, vocabulary

**ÖZ:** Hangi kelimelerin öncelikle öğrenilmesi gerektiğine ilişkin araştırmalar oldukça fazladır. Buna bağlı olarak değişik metinlerde kullanılan kelimeler üzerine incelemeler yapılmıştır. Kalıplaşmış söz öbekleri de incelenmiştir. Ancak bu tür çalışmalar daha çok akademik araştırma türünde makaleler üzerinde yoğunlaşmış ve üniversiteye henüz başlamış öğrencilerinin okudukları metinler üzerine yapılan araştırmalara karşı ilgi sınırlı düzeyde olmuştur. Bundan yola çıkılarak yürütülen bu çalışmada birinci sınıf öğrencilerinin iletişim temalı bir derste okudukları bir kitap bölümünde kullanılan kalıplaşmış söz öbekleri incelenmiş ve öğrencilerin kendi yazıları ile karşılaştırma yapılmıştır. 3253 kelimedenden oluşan kitap bölümü incelendiğinde %17.31 oranında kalıplaşmış söz öbekleri kullanıldığı belirlenmiştir. 4917 kelimedenden oluşan öğrenci yazılarında ise %7.69'luk bir orana rastlanmıştır. Kitap bölümünde daha çok 'sıfat + isim' ve 'fiil + sıfat + isim' türünden söz öbekleri kullanıldığı belirlenmiştir. Öğrenci yazılarında ise temel olarak 'fiil + isim' türünden söz öbeklerine rastlanmıştır. Kullanımlar arasındaki farklara ilişkin muhtemel nedenler tartışılmakta ve öğrencilerin kalıplaşmış söz öbeklerini kullanımlarını geliştirmeye yardımcı önerilerde bulunmaktadır.

**Anahtar sözcükler:** kalıplaşmış söz öbekleri, akademik yazma becerileri, kitap bölümü, öğrenci yazıları, kelime öğretimi

### Introduction

Being able to speak a language does not specifically require the ability of ‘speaking’ per se, but may involve other receptive skills (i.e. listening and reading) and the productive skill of writing. Therefore, it seems most logical to take a holistic approach to ‘speaking’ a language, which requires speakers (or rather ‘knowers’) of a language to use these skills in combination. The holistic approach recognizes the importance of other micro levels of syntax, grammar, vocabulary knowledge, etc. One’s lack of skills in one area can be compensated for by his/her knowledge of other areas. This is particularly true for speakers of English as a foreign language. Although grammar knowledge is essential, flexible use of lexis can be more beneficial than being able to use the correct grammatical structures (Harmer, 1991). Comprehension of lexical items increases understanding, which helps learners notice grammatical patterns more easily (Ellis, 1997). In this sense, learners’ lexical competence can be said to nurture their grammatical competence. During grammar practice sessions, it may also be useful to highlight lexical items, which opens “a lexical way into the grammar of the language” (Selivan, 2011). In addition, lexical competence supports all four sub-skills (Nation, 2001), facilitates second/foreign language acquisition, and increases the learners’ overall communicative competence (Schmitt, 2000).

### Collocations

Given the importance of vocabulary for foreign/second language learning, several attempts have been made to devise vocabulary lists, some examples of which include several General Service Lists (West, 1953; Brezina & Gablasova, 2013; Browne, 2013), the University Word List (UWL) by Xue and Nation (1984), and the Academic Word List by Coxhead (2000). The discussion on the (lack of) usefulness of lists of words in isolation resulted in new approaches to learning/teaching lexis. Firth (1957, p. 179) argued “You shall know a word by the company it keeps”, underscoring the importance of the words which a particular lexical item accompanies. In a similar vein, Lewis (1997) argues that “instead of words, we consciously try to think of collocations, and to present these in expressions. Rather than trying to break things into ever smaller pieces, there is a conscious effort to see things in larger, more holistic, ways” (p. 204). Therefore, learners cannot depend solely on comprehending words in isolation. Their success is largely dependent on fluency in production, for which flexible use of collocations is a must (Dyk et al. 2016). With this sentiment, Lewis (1997) pays closer attention to collocations, which he categorizes as (very) strong (e.g. rancid butter), weak (e.g. white wine, red wine), and medium strength (e.g. hold a meeting, carry out a study). Sinclair (1991, p. 170), on the other hand, simply defines collocation as “the occurrence of two or more words within a short space of each other in a text.”

Noting that “up to 70% of everything we say, hear, read, or write is to be found in some form of fixed expression”, Hill (2000, p. 57) proposed the following categorization:

i.. adjective + noun

*a huge profit*

ii. noun + noun

- a pocket calculator*  
 iii. verb + adjective + noun  
*learn a foreign language*  
 iv. verb + adverb  
*live dangerously*  
 v. adverb + verb  
*half understand*  
 vi. adverb + adjective  
*completely soaked*  
 vii. verb + preposition + noun  
*speak through an interpreter*

### **Learner Difficulties with Collocations**

Considering the profusion of collocations in English, mastering them can be a formidable challenge for language learners. Difficulty can be caused by several factors. According to Deveci (2004), students' preconditioned habit of learning words in isolation, intralingual problems, making generalizations, negative transfer from mother tongue, and cultural interferences likely create barriers. For instance, in the context of Abu Dhabi, when asked to do a task students often say 'from my eyes' [min ayinu]. This would be incomprehensible to a native speaker of English who is not familiar with local culture. Another problem may arise when students make overgeneralizations. That is, a learner with higher levels of language proficiency may mistakenly believe that the quality of their academic writing can be enhanced by using fixed expressions such as proverbs and idioms, which are in reality rare in formal writing, such as academic writing (Howarth, 1996). For students relying on such fixed expressions, it may be a real challenge to use the much less fixed word combinations that make up collocations; this has been documented as an area of challenge in previous research, too (Nesselhauf, 2003).

### **Collocational Profiles of Academic Texts by Expert Speakers and Language Learners**

In order to identify how expert writers' use of collocations compares to that of language learners, some corpus analyses have been conducted by previous researchers. A recent study by Farooqui (2016), for instance, compared collocations in two corpora: one compiled from computer science academic journals and another compiled from dissertations written by native and non-native speakers of English. The results of this study revealed that noun collocations were overused in both corpora while verb collocations were of average use in both. In a study conducted by Cortes (2004), it was revealed that the most frequent formulaic sequences in published writing did not appear in student writing. Similarly, Granger (1998) found that students tend to overuse prefabricated word combinations and underuse native-like collocations. In their study investigating verb + noun collocations in writing, Laufer and Waldman (2011) found that students' use of this type of collocations was far too limited in comparison to that of native speakers. They also identified interlingual mistakes using collocations even in the writing of advanced level students.

### **Teaching Collocations**

One of the approaches to teaching vocabulary is explicit instruction which is based on diagnosis of the words students are required to learn, and presentation of and elaboration on their meanings followed by practice sessions to develop students' successful use of them (Hunt & Beglar, 2002). Explicit vocabulary instruction helps "students acquire in-depth knowledge they need in order to understand the meaning of words they will encounter while reading [and listening]" (Hanson & Padua, 2011, p. 10). Recent empirical evidence indicates positive results from explicit instruction for EFL students' competence in using collocations at the sentence and paragraph levels (Asaei & Rezvani, 2015; Karami, 2013).

Another approach is incidental learning, which occurs "as a by-product of other cognitive exercises (e.g. reading/listening) involving comprehension" (Gass, 1999, p. 319). Ahmad (2011) notes that incidental mental processing and retention is enhanced by incidental vocabulary learning, which actively engages students in the process of deciphering the meaning with the help of the clues provided. The cognitive process that requires them to think and rethink about these words encourages students to transfer them to their long-term memory. Ahmad (2011) also points out that incidental vocabulary learning enables students to notice common lexical sets and related grammatical patterns. Ellis (1997) also states that collocations are normally learned unconsciously unlike the semantic features of lexical items. Taken together, these studies indicate that exposure to lexis in academic texts can help students to notice and acquire prominent word combinations with an overall positive effect on their lexical competence.

In regards to collocation instruction, Nesselhauf (2005) suggests that in writing courses, students' use of collocations could be improved in two different ways. The first one is a systematic approach focusing on the deviant collocations in student papers. The fact that students confuse certain collocations suggests that they have not become fully aware of the differences between the uses of words in different collocations or the meanings of collocations in different contexts. In the systematic approach, students' attention is drawn to such instances, and comparisons are made for clarification purposes. For example, collocations such as 'get in contact' versus 'come into contact' and 'enter school' versus 'enter the school' can be compared to highlight (slight) differences in meaning. Collocations can also be compared with reference to both their figurative and literal meanings (e.g. 'hit the nail on the head'). Another approach, according to Nesselhauf, is to take the topic of an essay. In this approach, instruction focuses on frequent collocations related to this topic. Students are taught these collocations before they write the essay in order to encourage them to use the collocations at their disposal with immediate effect.

### **Researcher's Context and Rationale for the Study**

This research was conducted in the context of Khalifa University of Science and Technology, the Petroleum Institute (KUST-PI), Abu Dhabi in UAE. KUST-PI is a university offering engineering degrees. The English and Communication Department,

where this research was undertaken, offers two courses (COMM101 and COMM151) to freshman students with the aim of furnishing them with the communication and academic literacy skills required for them to be successful engineers. In both courses, students are involved in one-term-long project-based courses. In COMM151, however, they are also engaged in seminars related to communication topics such as effective listening, interpersonal communication, intrapersonal communication and intercultural communication. Students read and discuss these topics at length, and are administered written assessments requiring them to reflect on these topics in relation to their experiences. This process engages the students in reading academic texts inside of and outside of the classroom. They also display their writing skills in the assessments. Although there is normally no explicit teaching of language, the activities and tasks involved in the process require students to use lexis productively. Prior to embarking on their freshman studies, students are required to get a satisfactory result from a language proficiency test (which is normally 6 from IELTS). This indicates their ability, at the threshold level, to comprehend academic texts. Having passed the prerequisite COMM101, the students in COMM151 are expected to exhibit higher levels of language skills. However, it is not uncommon for the Communication Department faculty together with other faculty to complain about students' language writing abilities in general. The problem may partly be due to the lack/limited amount of form-focused instruction. This is despite the extensive feedback they are given on their written assignments. Another reason may be the assumption that receiving at least 6 from IELTS guarantees students' language skills at the productive level. This assumption may be problematic given the fact that students need ample exposure to language items before they can be said to have learned them. Also, the overall focus in the department seems to be on the gist and the main ideas in the seminar texts, without dwelling much on micro-level language components like collocations. The heavy load in the course further exacerbates the situation by stripping the faculty of extra time to spend on language.

It also appears that after students start their freshman studies they are often given the responsibility of improving their English language through self-directed learning. However, many freshman students may not be fully ready for self-directed learning. Therefore, they may need some guidance on micro-level language components. Although vocabulary learning seems to be a central part of these students' English language studies, it seems to be limited to learning vocabulary in isolation. Drawing students' attention to collocations in their assigned texts may be the first step towards further improving their lexical competence. With this purpose, it is important to identify various collocation types used in assigned texts. Earlier research, however, appears to be limited to certain type(s) of collocations used in texts. It is important to have a fuller picture of the collocations used in academic texts, particularly course-books since these are the main text types freshman students are required to read. Previous research, on the other hand, has generally focused on research articles, which are not always the priority at the freshman level. It is hoped that the current study can fill this gap in the literature. Once freshman students are trained to notice and use collocations typical of academic texts, they will gain more accuracy and fluency in English for academic purposes.

Additionally, although Arab students' use of lexis in academic contexts has drawn some interest from researchers (Deveci, 2015; Al Murshidi, 2014; Dougherty, 2010), there seems to be a lack of interest in their use of words in combination at a productive level. This limits our understanding of Emirati students' fluency in production, which is another reason why this study was conducted.

### **Research Questions**

This research aims at answering the following questions.

1. What is the collocational profile of the corpus derived from the COMM151 seminar text on effective listening?
2. What is the collocational profile of the corpus derived from the COMM151 students' examination papers?
3. How do the two corpora compare in terms of collocational density?

## **Methodology**

### **Research design**

In this small-scale exploratory study, a descriptive research design was adopted with the aim of determining collocation types in an academic text as well as in student reflective writing examination papers. Occurrences were analyzed quantitatively, which provided information on the frequency of the collocations in the two corpora. The statistical comparisons between the data sets provided information on similarities and differences in these corpora. A chi-square test was used to make a statistical comparison between the data sets. A p-value of less than 0.05 was considered significant.

### **The corpora**

The corpora was comprised of one seminar text adapted from a book chapter (A Primer on Communication Studies. n.d) and a corpus of students' reflective writing examination papers in COMM151 at PI. The former (Corpus 1) had a total of 3253 running words excluding picture descriptions and figures, while the latter (Corpus 2) had a total of 4917 running words.

### **The analysis procedures**

An online vocabulary profiler and frequency analyzer software available free of charge was used in this study. (see [http://www4.caes.hku.hk/vocabulary/tools\\_cp.htm](http://www4.caes.hku.hk/vocabulary/tools_cp.htm)). Also, Hill's (2000) classification of collocations was used to classify the collocations in the corpora. This was first done manually by the researcher himself. Then, a second language expert was consulted to check the accuracy of the coding. Similarly, the student mistakes were identified and then cross-checked with two English language instructors. In deciding whether students' use of collocations was accurate, grammatical mistakes such as tense, spelling and singular/plural forms were disregarded due to the focus of the study being on collocations, not whether or not they were used grammatically accurately.

### Findings

The first research question aimed at identifying the collocational profile of the text used in the COMM151 effective listening seminar. The results of the data analysis conducted for this purpose can be seen in Table 1.

**Table 1.** Collocational profile of the seminar text

Collocation Types	Corpus 1 (N= 3253 words)	
	f	%
verb + adj + noun	204	36
adj + noun	228	40
noun + noun	57	10
verb + adv	7	1
verb + prep + noun	52	9
adverb + adj	6	1
adv + verb	9	2
<i>Total</i>	<i>563</i>	<i>100</i>
<i>% of the corpus</i>	<i>17.31</i>	

As can be seen in Table 1, a total of 563 collocations was used in the text. This accounted for 17.31% of the 3253 words in the text. The most commonly used collocation type was that of adjective + noun (40%), followed by verb + adjective + noun (36%). The other collocation types, used with markedly lower frequencies, were types noun + noun and verb + prep + noun (10% and 9% respectively). It was also observed that the types adverb + verb, verb + adverb, and adverb + adjective were the least commonly used (2%, 1% and 1% respectively).

The second research question aimed at identifying the collocational profile of the student corpus, the results of which can be seen in Table 2 below.

**Table 2.** Collocational profile of the student corpus

Collocation Types	Corpus 2 (N= 4917 words)					
	Correct		Incorrect		Total	
	f	%	f	%	f	%
verb + adj + noun	242	91	25	9	267	71
adj + noun	61	94	4	6	65	17
noun + noun	24	96	1	4	25	7
verb + adv	10	100	0	0	10	2.5
verb + prep + noun	7	88	1	12	8	2
adverb + adj	2	100	0	0	2	0.5
adv + verb	0	0	0	0	0	0
<i>Total</i>	<i>346</i>	<i>92</i>	<i>31</i>	<i>8</i>	<i>377</i>	<i>100</i>
<i>% of the corpus</i>	<i>7.04</i>		<i>0.63</i>		<i>7.67</i>	

According to Table 2, the total number of collocations used by the students was 377, which accounted for 7.67% of the words in the corpus. Of these collocations, 346 (92%) were used correctly, while 31 of them (8%) had problems, deviating from their correct use and obscuring their meanings. The most commonly used collocation type was verb + (adjective) + noun with a total of 267 occurrences (71%). This was followed by the type adjective + noun with 65 occurrences (17%). The frequency of the other types was significantly lower. For instance, the noun + noun type was only used 25 times (7%); the

verb + adverb type was used 10 times (2.5%); and the verb + preposition + noun type was used just 8 times (2%). Beyond that, the adverb + adjective type occurred only twice (0.5%), and the adverb + verb type was non-existent. Although the students generally appeared to use their chosen collocations with accuracy, in general, they seemed to have less clarity about the verb + preposition + noun type, with a higher rate of inaccuracy (12%).

The third research question asked how the two corpora compared. The results can be seen in Table 3 below.

**Table 3.** Comparison of two corpora

Collocation types	Seminar text		Student papers**		$\chi^2$	p*
	f	%	f	%		
verb + (adj) + noun	204	36	242	70	97.4298	0.000
adj + noun	228	40	61	18	57.973	0.000
noun + noun	57	10	24	7	2.6832	0.1014
verb + adv	7	1	10	3	3.1669	0.0751
verb + prep + noun	52	9	7	2	18.3706	0.0000
adverb + adj	6	1	2	1	0.7644	0.4446
adv + verb	9	2	0	0	5.5864	0.0181
<i>Total</i>	563	100	346	100		
<i>% of the corpora</i>	17.31		7.69			

\*\* Only the correct uses were taken into consideration.

\*  $p < 0.05$

As is seen in Table 3, collocations were used 2.25 times more frequently in Corpus 1 than in Corpus 2 (17.31% vs 7.69%), indicating that the students were rather limited in their use of collocations. The students' use of collocation was dominantly concentrated on the type verb + (adjective) + noun (70%). This was followed by the type adjective + noun (18%). Although the author of Corpus 1 opted for these two types of collocations in general, their distribution in that text was quite similar (40% and 36%). The results of the chi-square test used to compare the data for these collocation types showed that the differences were at statistically significant levels ( $p = 0.0000 < 0.05$ ).

The noun + noun and verb + preposition + noun types were also used with similar frequency in the seminar text (10% and 9%). Although used much less commonly, the other types were each also detected in this text. It is important to note once again that the students made no use of the adverb + verb type, but it was used 9 times (2%) in the first corpus, revealing a statistically significant difference between the data sets ( $p = 0.0181 < 0.05$ ).

The words that were used as collocations were also compared. First, the similarities between them were identified. Table 4 shows these results.

**Table 4.** Collocations in common

Collocations	f	%	Collocations
verb +( adj ) + noun N=446	21	4.7	accept a message, achieve a goal, affect our/the ability, analyze information, ask follow up/further questions, become a good/better listener, evaluate a message, evaluate information, focus our listening on, give feedback, improve (my) listening (skill), make eye contact, pay (conscious) attention, present information, receive a message, receive information, reject a message,



			repeat information, rephrase information, retain information, send a message
adj + noun N=289	8	2.8	critical listening, different meaning, empathic listening, good concentration, main types, nonverbal communication, nonverbal message, relevant feedback
noun + noun N=81	6	7.4	eye contact, head nods, listening preparation, listening process, motivation for speaking, response preparation
verb + prep + noun N=59	2	3.4	focus on something, depend on something
verb + adv N=17	0	0	-
adverb + adj N=8	0	0	-
adv + verb N=9	0	0	-
<i>Total</i> ( <i>n=909</i> )	38	4.18	

Table 4 clearly shows that only 38 out of 909 collocations (4.18%) in the corpora were common, which indicates that the corpora largely differed in terms of collocations employed. The greatest similarity between the collocations in the corpora were in the verb + adjective + noun category, where there were 21 instances of similar collocations. The second category was that of adjective + noun which had 8 instances of similar collocations. This was followed by the noun + noun category (6 instances) and the verb + preposition + noun category (2 instances). The two corpora did not have similar uses of collocations in the three remaining categories.

Given the academic nature of the research context, the collocations detected in the two corpora were also studied from the perspective of the AWL words occurring in the texts. See Table 5.

**Table 5.** AWL words occurring in the collocations

Number of Collocations	f	%	AWL Words
Corpus 1 N=563	114	20.25	academic, accurate, achieve, acknowledge, adapt, affect, analyze, appropriate, aspects, assess, attach, awareness, benefits, biases, capability, capacities, channel, clarifying, communication, complex, components, concentrate, consequences, consist, construction, contact, context, contexts, contextual, contribute, create, cultural, defined, devices, diminish, distinct, distorted, dominance, dominate, edit, elements, eliminate, emphatic, enhance, environment, environmental, ethical, evaluate, evidence, explicit, facilitate, flexibility, focus, goal, identify, implications, inconsistent, infer, inhibit, initiate, instruction, intensity, interpret, irrelevant, isolation, issue, job, maintain, monitor, motivation, mutual, negative, negatively, normal, occur, passive, perceive, perspectives, physical, positive, potential, precise, previous, previously, primarily, prime, process, processing, professional, promote, psychological, ranging, reject, relevant, responding, response, retain, role, seek, selection, selective, significantly, sought, sources, specific, strategic, strategies, stress, structured, style, task, topic, visible, visual

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Corpus 2 N=346	68	19.65	academic, achieve, adjust, affect, analyze, aspects, assess, benefit, circumstances, colleagues, communicate, communication, complexities, concentrate, concentration, concept, conclusion, contact, context, cooperate, distinctive, element, eliminate, emphatic, environment, environmental, evaluate, expert, factor, focus, fundamental, goal, grades, ignore, impacts, infer, instructor, involve, isolate, issue, motivation, negative, negatively, obtain, occurrence, passive, positive, positively, process, professional, project, reject, relevant, require, respond, response, retain, role, scenarios, seek, sources, specific, strategic, styles, task, team, techniques, topics
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As can be seen in Table 5, more academic words were used in their collocational forms in Corpus 1 than in Corpus 2 (114 vs 68). This indicates that the students were about half as less likely to use academic collocations.

### Discussion

One of the aims of the research was to identify the collocational density of the book chapter the freshman students in this study were assigned. The results revealed that 17.31% of the 3253-word corpus was comprised of collocations. This is a significant finding indeed, suggesting that almost one fifth of an academic text is based on a variety of collocations. Although several studies have been conducted to identify certain types of collocations used in academic texts, to this researcher's knowledge, the literature lacks research on the overall collocational profile of academic texts. Therefore, this finding can be considered as a contribution to the field. It also appears that prior research has investigated certain types of collocations in research articles (e.g. adjective + noun), but not in book chapters. However, it seems that freshman students are normally required to read foundational academic texts like book chapters. Therefore, it may be more important for them to be familiarized with the type of lexis and collocations used in such texts first so that their reading comprehension is facilitated. This will also contribute to their use of similar collocations in their own writings.

This research also found that in academic writing the most commonly type of collocations was adjective + noun, followed by verb + (adjective) + noun. This is supported by previous research. For example, Ackermann and Chen (2013) also found that the adjective + noun type of collocation was the most common in their corpus, derived from a variety of academic sources such as lectures, seminars and journal papers.

Another aim of this research was to identify the types and frequency of collocations in the learners' corpus and compare them to those used in the baseline data derived from the book chapter used in the seminar. The results showed that out of 4917 running words in the student corpus, the percentage of collocations was 7.67, out of which 0.63 was faulty. The remaining 7.04% was much less frequent than the 17.31% of collocations used in the baseline data. It was also found that students' most preferred collocation type was verb + (adjective) + noun (70% vs 36%) whereas the most common type in the baseline data was adjective + noun (40% vs 18%). The other types of collocations were also significantly rarer in the student corpus, with the collocation type adverb + verb being non-existent. Although these collocations were not commonly used in the baseline data, their use enriched the profile of that text. The comparatively limited range of collocations in the student corpus points to students' lack of lexical dexterity and therefore inadequate

linguistic language proficiency. This is particularly important to note given the time spent on this text during the seminar prior to the exam, which was open-book. Considering these circumstances, the students might have been expected to notice the collocations in the text. However, the limited range of collocations produced and the mistakes made with some of them indicate that students may not always notice or use collocations effectively. This observation is in line with previous research that has shown that language learners may face formidable challenges in understanding and using collocations (Siyanova & Schmitt, 2008; Granger, 1998).

The results of this study also revealed that the frequency of collocations used with academic words in the two corpora differed significantly to the advantage of Corpus 1 (114 vs 68). This discrepancy between native speakers' and students' use of academic collocations was observed in previous research as well. For instance, Pollock (2010) found that students' frequency of academic collocations was 7.25 occurrences per 1000 words in comparison to 11.52 by native speakers. The discrepancy between the baseline data and the students' use of academic collocations was also apparent in the lack of variation in the words employed. That is, the students tended to rely on a limited range of academic words. Language learners' limited repertoire of collocations resulting in the repetition of similar word patterns was also identified in earlier research (Saad, 2009; Cobb, 2003). Students' tendency to use fewer academic words and rely more on general words also appeared in a prior study at the same institution this research was carried out (Deveci, 2015).

The students' limited flexibility in using collocations may be caused by several factors. The first one, as discussed above, may be learners' failure to notice the variety of collocations used in the texts they were assigned. This may be caused by a greater focus on content coming at the expense of form. Having been admitted to their freshman programs upon obtaining a sufficient TOEFL or IELTS score, these students may be expected to have mastered lexis, and therefore the instructional focus may be on content with limited or no attention paid to lexis and/or other language structures. The results of the current study indicate that this expectation may be faulty. In fact, there is empirical evidence from previous studies showing that neither TOEFL nor IELTS should be "the sole determining factor when identifying applicants with sufficient English language skills to succeed academically" (Lahib, 2016, p. i). Findings from research conducted on Malaysian and Indonesian students also showed that the evidence for the validity of IELTS as a predictor of academic success is rather limited (Dooey & Oliver, 2002). Second, the nature of the writing examination could be another factor influences students' choices of collocations. The exam question asked about a particular aspect of the seminar topic, which might have had an impact on the students' collocational choices. In addition, the limited time students were given for the exam could easily create tension that would impact their performance. It has been shown that second language learners' ability to retrieve appropriate language items from memory is reduced by language anxiety during a test (MacIntyre & Gardner, 1994).

### Conclusions and recommendations

The results of this study show that a significant proportion of the book chapter used for seminar purposes in the English and Communication Department at KUST-PI is comprised of collocations. This is important to consider when designing academic literacy course content. It appears that students in such courses would greatly benefit from instructional interventions aiming to raise their awareness of the wide range of academic collocations that commonly occur in proficient authors' discourse. This may be particularly important for freshman students who have not had much exposure to academic discourse yet. Those with higher proficiency exam scores at the beginning of their freshman studies might mistakenly be expected to notice collocations more easily. Although this may be the case with more frequent collocations, the more complicated ones may go unnoticed or unmarked in students' long-term memory for active usage. Therefore, EAP students need to be provided with opportunities to first notice and then actively use collocations in a flexible fashion. Incidental learning per se will not suffice to achieve this.

Students may be helped to notice collocations in several different ways. One of these is to ask students to focus on particular types of collocations in an assigned text. Pairs or groups of students may be assigned specific types, the results of which can later be shared in an open-class forum. However, students first need training on what (academic) collocations are and how they are used. Mind that some collocations may be more difficult to identify than others. For instance, for lower level students, a collocation in a relative clause (e.g. 'we combine the visual and auditory *information we receive* and try to make meaning out of it') may be harder to notice than the same collocation in a simpler sentence (e.g. 'we often *receive information* visually.')

Another noticing activity can be in the form of concordance lines derived from the assigned texts. For example, the below-given concordance lines from the book chapter analyzed in this research display different collocational usages of the word 'message.'

We evaluate the worth of a	<b>message</b>	by making a value judgment ab
about whether we think the	<b>message</b>	or idea is right/wrong or des
information, you rephrase the	<b>message</b>	into your own words. For exam
of analyzing or evaluating a	<b>message</b>	based on information presente
critical listener evaluates a	<b>message</b>	and accepts it, rejects it, o
ific task or the content of a	<b>message</b>	in order to address feelings.
be attentive to an incoming	<b>message</b>	Additionally, we are often c
ins as someone is receiving a	<b>message</b>	and hasn't had time to engage
in the sender. In terms of	<b>message</b>	construction, poorly structur
to cognitively process a	<b>message</b>	(Hargie, 2011). Listening als
able to recall the speaker's	<b>message</b>	or offer a competent and rele
y goals for listening to this	<b>message</b>	?" 2. "How does this message
biases, and think beyond the	<b>message</b>	Becoming a Better Empathe
overlooks the importance of	<b>message</b>	construction and feedback. Sp
your listener navigate your	<b>message</b>	and use relevant examples.

Students could be asked to identify the most frequently occurring collocation type, and record it in a table like the one below.

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rephrase			
evaluate	a		
receive	the	message	
process	your		
listen			
navigate			
think	beyond		

---

Another type that seems to be used frequently is noun + (preposition) + noun, as is seen in the table below.

---

	worth		
the	content	of	a message
	importance		

---

To help students actively use collocations when writing or delivering an academic speech, Nesselhauf's (2005) topic approach can be adopted. For assessment purposes, on the other hand, special attention can be paid to the variety, sophistication and accuracy of collocations. Considering students' general tendency to work harder for better grades, this may encourage them to improve their lexical competence in general and collocational flexibility in particular.

It would also be good to help students notice how their use of collocations compares to texts they often read in their courses, as indicated by Nesselhauf's (2005) systematic approach briefly described in the background to this study. For this purpose, they may be asked to revise their written outputs to try to incorporate collocations into their assigned texts. Attention can specifically be paid to academic words and their collocational companions.

These, and other alternative educational practices, will no doubt improve language students' competence not only in writing but also in other sub-skills. However, similar practices can be adopted by faculty in other discipline-specific courses, too. Students who are non-native speakers of English in any course would benefit from form-focused instruction tailored to their specific course. The same can also be the case for native-speakers of English who are not very familiar with academic discourse in general, and writing in particular.

### **Limitations of the study and suggestions for further research**

One of the limitations of this study is that it included only one book chapter which limited its corpus size. Future researchers could investigate collocations used in a bigger corpus. For this purpose, a whole book could be investigated. Alternatively, different book chapters on the same topic could be used. Comparative investigations could also be carried out. To this end, books or book chapters studied by freshman students versus senior students could be compared.

Another limitation of this study is related to the profile of the students included in this study. First, the relatively small number of students in the study limited the size of the student corpus. Future studies could increase this size by targeting a higher number of students. Also, only male students were included in this study. It may be a good idea to include female students as well and identify if gender plays a role in students' use of collocations.

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Other studies could also consider comparing collocations in spoken and written discourse in academic contexts.

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