

INSTRUCTED COLLOCATIONS LEARNING AND SPOKEN PROFICIENCY: SOME CONCLUSIVE INSIGHTS

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Abstract

The present study explores lexical collocations and their relation to speaking proficiency of Taiwanese EFL college students learning English for academic purposes (i.e., EAP). The data is obtained from 92 English majors at a national university of science and technology in southern Taiwan. The results show that (a) direct collocation instruction promotes the subjects' performance on their speaking fluency tests, outscoring the other two instruction types; (b) the advanced level students seem to benefit most as they outperformed the other three groups after receiving each of the three instruction types (i.e., lexical collocations, single-item vocabulary, and no instruction); and (c) no significant difference can be found between the high-intermediate and intermediate groups with regard to their post-instruction performances. Therefore, the current study concludes that direct collocation instruction deserves immediate attention and calls for a series of systematic studies to be done on the possible connection between lexical collocations and English proficiency of EFL learners.

Keywords: lexical collocations, speaking proficiency, Taiwanese college learners

1. Introduction

1.1 Development of Collocational Studies

In the field of applied linguistics and TESOL, it is now widely accepted that longer, multi-word, phrase-like lexical units constitute an essential portion of proficient language use (Schmitt, 2008; Wray, 2000, 2002). In recent years, the field has also witnessed tremendous efforts contributed to the understanding of lexical units. According to Ellis (2008), 529 in the 1980s and 709 papers in the 1990s investigating the phenomenon of 'phraseology' can be found from ProQuest-CSA database. It is becoming more apparent that these lexical units are paramount not only to language acquisition but also pedagogical practices (Schmitt, 2004). Terms like 'lexical phrases' (Nattinger & DeCarrico, 1992), 'formulas' (Ellis, 1994), 'multi-word items' (Moon, 1997), 'lexical bundles' (Biber, Johansson, Leech, Conrad, & Finegan, 1999), 'constructions' (Ellis, 2003, 2006), 'lexical patterning' (Schmitt, 2004), 'formulaic sequences' (Schmitt & Carter, 2004), 'restricted collocations' (O'Keeffe, McCarthy, & Carter, 2007), 'phraseological units' (Meunier & Granger, 2008) have been previously used to describe the longer chunks of words. Among these labels, collocations, perhaps the most discussed lexical units, lie in the center of the past studies.

Just like what Schmitt (2004) pinpointed, "these scholars have used a wide range of terminology...and the research has scattered across various fields. This led to a quite limited awareness of lexical patterning in the applied linguistics field..." (p. x). The same problem applies to the studies of collocations. While too many people are trying to capture and describe the uniqueness of collocations, all have approached from different perspectives and, therefore, reached conclusions which did not share harmony. For instance, researchers of three main trends: the lexical composition trend (Firth, 1957; Halliday, 1966; Sinclair, 1966), the structural pattern trend (Benson, 1985; Benson, Benson, & Hson, 1997), and the formulaic language trend (Nattinger & DeCarrico, 1992; Pawley & Syder, 1983) have begun their studies on collocations since the 1950s. The lexical composition trend looks at collocations as ways of describing word meanings at different levels. The structural pattern trend relies on grammatical patterns to describe word combinations as of collocations. The formulaic language trend recognizes collocations as a part of English vocabulary as it maintains that vocabulary can include longer and larger lexical chunks and such multiword units are treated as building blocks of lexicon.

For classroom teachers and learners, it is perhaps best to settle down with an operational definition for collocations which is of practical value. This paper attempts to create a learner-friendly definition of collocations first, and reports on the effects of direct collocation instruction on college EFL students' oral proficiency.

Very few studies have examined the relationship between the acquisition of collocations and EFL/ESL learners' general proficiency; fewer have looked into specifically the effects of direct collocation instruction on English language skills, such as listening, reading, writing, and speaking. To date, only five empirical studies, Tseng (2002, collocations and writing), Lien (2003, collocations and reading), Boers, Eyckmans,

Kappel, Stengers, and Demecheleer (2006, collocations and speaking), Hsu and Hsu (2007, collocations and listening), Lin (2007, collocations and reading), investigated if direct collocation instruction enhanced L2 learners' language proficiency. The findings reported are promising and encouraging. Whereas Tseng did not report any obvious improvement in her students' writing, the other four studies all revealed that teaching collocations brings positive influence on learners' knowledge of collocations as well as language skills. Based on the former empirical studies, the study hopes to uncover new insights from collocation-targeted instruction by addressing the following research questions:

1. Are there differences in Taiwanese college English majors' speaking fluency as a result of lexical collocation instruction, single-item vocabulary instruction, and no instruction?
 - 1a. Are there differences in Taiwanese college English majors' speaking fluency tested immediately after the three instruction types?
 - 1b. Are there differences in Taiwanese college English majors' gain of speaking fluency after the three instruction types?
2. Are there differences in Taiwanese college English majors' speaking fluency among the four English fluency levels as a result of lexical collocation instruction, single-item vocabulary instruction, and no instruction?
 - 2a. Are there differences in Taiwanese college English majors' speaking fluency tested immediately after the three instruction types among the four English fluency levels?
 - 2b. Are there differences in Taiwanese college English majors' gain of speaking fluency after the three instruction types among the four English fluency levels?

1.2 Defining and Classifying Collocations

Prior to Handl (2008) Nation (2001) has already proposed the same idea of using several sets of continua to define collocations. Although most of Nation's continua overlap, his "grammatically structured" (p.330) continuum can be added to Handl's dimensions to help collocations exclude word strings of quantitative nature like free-combination 'lexical bundles.' Any recurrent string of words, regardless of idiomaticity and structure, occurring at least 10 times per million words, according to Biber and Conrad (1999), are termed lexical bundles which give less attention to form and meaning (O'Keeffe et al., 2007). Handl and Nation's multi-dimensional definition can be therefore combined to define collocations as 'grammatically structured (as contrasted to free combination) word combinations which frequently co-occur within a short distance, carrying semantically transparent meanings (as contrasted to idioms).' As the present study intends to teach EFL students the concept of lexical collocations¹ in light of many previous studies (Aghbar, 1990; Bahns & Eldaw, 1993; Benson, et al., 1997; Hsu, 2005; Hsu & Chiu, 2008; Hsu & Hsu 2007), the learner-oriented and operational definition of lexical collocations is hence simplified as: Two to five² closely adjacent and grammatically correct content words of transparent meanings which recurrently co-occur³. This newly created definition of lexical collocations is adopted as a guideline for teaching as well as data collection and analysis throughout the entire study.

2. Review of Related Studies on English Collocations

2.1 Effects of Direct Collocation Teaching on the English Skills of Taiwanese EFL Students

Working with 94 senior high school Taiwanese students in a twelve-week period, Tseng (2002) taught her experimental group lexical collocations explicitly during classroom activities. She employed a questionnaire, an identical pre-/post-course fill-in-blank collocational knowledge test, and two essays to examine the differences of her students in the experimental group in contrast to the control group. Her results showed that EFL high school students clearly could not acquire collocations on their own. Teaching of collocations, in Tseng's case, was proved to have direct effects on broadening students' knowledge of collocations, although obvious improvement on writing was not reported.

Lien (2003) investigated the effects of collocations on Taiwanese college English majors' reading comprehension. She divided 85 students into three participant groups according to their academic levels, and provided each group in a random order three kinds of instruction: lexical collocations, single-item vocabulary, and no instruction, in three consecutive weeks. Immediately following each instructional

¹ The present study strictly focuses on lexical collocations, as emphasis will be placed on lexical collocations only. The two terms, 'lexical collocations' and 'collocations' will be used interchangeably.

² The 5-word span of a collocate is determined based on the suggestions of Kennedy (1998, 2008) and Read & Nation (2004).

³ Seven lexical collocation types are included in the *BBJ Dictionary* (Benson, et al., 1997). Their original type 1, 'verb + noun (creation)' and type 2 'verb + noun (eradication)' lexical collocations are grouped into lexical collocation type 1—verb + noun in this study. An additional 'noun + noun' type collocation recognized by Hausmann (1999) and Kimmes (2004) is adopted also. Altogether, seven types of lexical collocations are investigated in this study. They include: lexical collocation type 1—verb + noun, lexical collocation type 2—adjective + noun, lexical collocation type 3—noun + verb naming an action, lexical collocation type 4—noun 1 of noun 2, lexical collocation type 5—adverb + adjective, lexical collocation type 6—verb + adverb, and lexical collocation type 7—noun + noun.

treatment, an essay-question reading test was given to the students in order to measure their reading comprehension. Lien concluded: (a) collocational instruction enhanced her participants' reading fluency to some degree, (b) single-item vocabulary instruction, almost like no instruction, had no positive effect on the students' reading comprehension, and (3) upon receiving collocation instruction, the lowest level (i.e., sophomore) students performed even better than the other two higher levels. Lien further stated that knowledge of collocations deserved more attention because it might have encouraging influence on L2 students' fluency and it is not something non-native speakers can acquire without explicit teaching.

Also examining the effects of lexical collocations on Taiwanese EFL students' reading fluency development, Lin (2007) placed her focus on vocational high students. Adopting a control-versus-experimental model, she taught the two classes herself in an 18-week semester. Lin used one set of identical pre- and post-course test, consisting of a reading fluency and a collocation competence test, in order to measure her two student groups' language development. In addition, a delayed post-course reading test was given to the participants again one month later as a follow-up reading fluency check. Lin's findings were relatively encouraging as she found that the experimental group, with explicit and systematic collocation teaching, made significantly greater progress in the reading fluency test than its counterpart. She even reported direct collocation instruction was beneficial to EFL students of all proficiency levels, a finding contrasted to Lien's (2003) in which only the lowest level made more obvious improvement.

Hsu and Hsu (2007), adapting a research design similar to Lien's (2003), gave two groups of college English majors (i.e., sophomores and juniors) collocation, single-word, no instruction treatments and tested these students' listening comprehension reflected by a multiple-choice TOEFL model test. The results showed that the instructional treatments had more effect than the academic levels on the participants' performance of listening comprehension. The two groups both reacted best after receiving instruction which emphasized lexical collocations. Because the students' test scores after the single-word and no instruction were so close, Hsu and Hsu went on to claim "as a language learner, he/she may as well not receive any instruction at all as he/she is receiving single-item vocabulary instruction" (p. 26-27).

In short, the studies targeting Taiwanese EFL students yielded some meaningful results. For example, the majority of the research findings support that direct collocation teaching seems helpful to students' language fluency whether the instruction is one-time only or longitudinal. It is however difficult to determine if L2 students of higher or lower language levels would benefit more from the collocation-focused instruction.

2.2 Effects of Direct Collocation Teaching on the English Speaking Fluency of Belgian EFL Students

In a Belgian university, Boers et al. (2006) have also joined in the trend of studying the effectiveness of collocation teaching, which they called "putting a Lexical Approach to the test" (p. 245). They included both collocations and idiomatic expressions under the term, 'formulaic sequences,' defined by Wray (2002)⁴, in their classroom instruction with college English majors. In a 22-hour course, they provided authentic materials of formulaic sequences in reading and listening activities consistently to their experimental group whereas a conventional class of control group was taught alongside. In the end, the two student groups were evaluated in an interview by two blind judges on the oral proficiency while the same interview data were later rated by two additional judges mainly counting the valid formulaic sequences. The findings revealed by Boers and his colleagues (2006) were promising. The instructional method which raised EFL learners' awareness of formulaic sequences resulted in the increased number of such sequences tallied in the post-course interview. Boers and his colleagues also noted that the frequency of formulaic sequences correlated with the students' speaking proficiency scores. Their target learners were found to use a larger repertoire of English formulaic sequences and such feature enabled them to be recognized as proficient speakers by the teacher-evaluators.

The four empirical studies (Boers et al., 2006; Hsu & Hsu, 2007; Lien, 2003; Lin, 2007) conducted with EFL learners have given supports to the teaching of collocations as a rewarding part of classroom activities. Boers and his colleagues (2006) suggested their presented evidence can be regarded as an invitation for future investigation into the relationship between phrasal knowledge and language proficiency, and "for further evaluations of the effectiveness of proposed variants of the Lexical Approach" (p. 259). It is a possible direction to study whether Taiwanese college EFL learners' speaking fluency would also benefit from the same kind of collocational instruction. Therefore, the current study intends to investigate the effects of direct 'pre-speaking word instructions' (i.e., lexical collocation and single-item vocabulary instructions) on Taiwanese college English majors' oral proficiency. This study is certainly meaningful in providing new insights and findings of practical value, adding to the understanding of the lexical approach.

⁴ Wray (2002, p. 9) defined formulaic sequence as "a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be, prefabricated: that is, stores and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar."

3. Methodology

3.1 Study Setting and Subjects

The participants were 92 English majors enrolled in a national university of science and technology in Kaohsiung City, southern Taiwan during the fall semester of 2014–2015 academic year. Prior to the study, the researcher went to each class to explain the nature and possible benefits of this study and invite students to attend voluntarily. Originally, 102 students showed up in the beginning, but only 92 stayed throughout the entire study. The data of the 10 students who failed to complete this course were eliminated. Altogether the researcher recruited altogether 10 seniors, 22 juniors, 40 sophomores, and 20 freshmen (i.e., 80 females and 12 males, ages between 18 and 24) who voluntarily participated in this short-term class during their spare time. All the participants received a small amount of fee in the form of gift certificates for their time and contribution to the study.

3.2 Research Design

The present study was conducted in two stages. In the first stage, the participants were divided into four groups (i.e., low-intermediate, intermediate, high-intermediate, and advanced) according to their general language proficiency determined by a placement test. This test consisted of an institutional English proficiency exam (measuring grammar, listening and reading comprehension) and a simplified IELTS speaking test (measuring oral fluency). The institutional English exam was a multiple-choice model test and administered as a sit-in group test in a regular classroom. The simplified IELTS speaking test used in the current study was adapted from the second part of an IELTS speaking test¹. It was chosen because it is a form of monologue during which the test-taker freely composes his/her speech without interference. Because the speaking test was conducted in a lab where each student had access to a computer, everyone recorded his/her answer to a microphone upon seeing the question shown on the computer screen. The students' answer was immediately converted to and saved as audio files as soon as the test was completed. Unlike a normal face-to-face IELTS speaking test conducted between a student and an evaluator, this study made use of the recording facility, which enabled the researcher to collect the spoken data of a student group at one time.

In the second stage, every participant group was taught three sample texts for speaking, each of which with a different instruction focus—lexical collocations, single-item vocabulary, and no instruction—and given a simplified IELTS speaking test immediately after each instruction type. Similar to the placement test stage, instructional treatment was given to the students on a group-by-group basis; the oral test following each instruction type was administered in a computer lab as well where a group of students took the same test but each responded individually to a computer. The entire study lasted for four weeks. The research instruments and data collection procedure are presented in Table 1.

In fact, the present study can be compared and contrasted with the studies by Lien (2003) and Hsu and Hsu (2007) in many ways. First, all the three studies investigate the relationship between direct collocation instruction and Taiwanese college English majors' language fluency (i.e., Lien, reading; Hsu & Hsu, listening, this study, speaking). In terms of the research design, they all adapted a Latin Square (Furlong, Lovelace, & Lovelace, 2000; Winer, Brown, & Michaels, 1991) in presenting treatments to their subjects. Such design enables this study to control the differences between the three sample speaking texts used for teaching and the order of instructional treatments (Furlong et al., 2000; Lien, 2003). In addition, these three studies are all short-term, classroom-based courses taught by a researcher.

Nevertheless, the present study is also unique in its own way. It investigated the impact of collocation teaching on Taiwanese EFL learners' oral fluency, a language aspect not yet addressed particularly to the huge group of EFL students whose mother tongue is Chinese. Moreover, by implementing the placement test, this study hopes to find out if EFL learners' general proficiency level can be a key factor affecting their performance. This is a point not discussed previously since Lien (2003) and Hsu and Hsu (2007) arbitrarily grouped their subjects by academic levels. Lastly, other than measuring student performance immediately after each instructional treatment, this study also looks into the students' gain in speaking fluency detected between the speaking pretest (as a part of the placement test) and each post-instruction speaking test. By doing so, this study may be able to provide additional insights as to how collocation instruction helps EFL students of different language levels progress more precisely.

Table 1
Research Instruments and Data Collection Procedure of the Study

Week 1	Placement Test (60 min.)
	Simplified IELTS Speaking Pretest (Topic 1) (10 min.)

¹A standard IELTS speaking test is composed by three parts, part one and three are talks conducted between a test-taker and an evaluator.

	Low-intermediate	Intermediate	High-intermediate	Advanced
Week 2	Single-item Voca. Instruction (30 min.)	No Instruction (30 min.)	Lexical Collocation Instruction (30 min.)	Single-item Voca. Instruction (30 min.)
	Simplified IELTS Speaking Test (Topic II) (10 min.)			
Week 3	Lexical Collocation Instruction (30 min.)	Single-item Voca. Instruction (30 min.)	No Instruction (30 min.)	Lexical Collocation Instruction (30 min.)
	Simplified IELTS Speaking Test (Topic III) (10 min.)			
Week 4	No Instruction (30 min.)	Lexical Collocation Instruction (30 min.)	Single-item Voca. Instruction (20 min.)	No Instruction (30 min.)
	Simplified IELTS Speaking Test (Topic IV) (10 min.)			

Note. 'Voca.' stands for 'vocabulary;' 'min.' refers to 'minutes.'

3.3 Instruments

3.3.1 Placement test: Institutional English proficiency exam and simplified IELTS speaking test

The present study divided its participants by employing a placement test. This test consisted of an institutional English proficiency exam, measuring general language fluency, and a simplified IELTS speaking test, measuring speaking fluency. The participants' performance on the institutional English exam was graded and interpreted by a local private language school which had administered the same exam with tested validity and reliability. As for the data of the students' speaking test, they were rated in the form of audio files by two judges who are both experienced EFL teachers⁶.

3.3.2 Instructional treatments: Sample speaking texts used for teaching

The major instruments of the study were the four sample speaking texts selected from *Test Preparation Guide for IELTS Speaking and Listening*⁷ (Tseng, 2005), including "favorite food" (p. 117), "means of transportation" (p. 177), "learning a foreign language" (p. 193), and "perfect holiday" (p. 230). Although they were originally written as sample answers for test-takers to model, they were used as the teaching materials from which the researcher collected targeted words and lexical collocations. These four texts were selected if they (a) contained almost equal number of lexical collocations, (b) were close in the text length, and (c) approved by the researcher and the two speaking test judges as topics familiar to the target students. They are used accordingly (see Table 1) as the test topics for the speaking pre-test and the three post-instruction speaking tests (i.e., speaking pretest Topic I—"favorite food," speaking test Topic II—"means of transportation," speaking test Topic III—"language learning experience" (p. 193), and speaking test Topic IV—"perfect holiday") though the sample speaking text for the pretest was not taught to any students at all.

In terms of the two instructional treatments, i.e., collocation instruction and single-item vocabulary instruction, they were implemented by the researcher, following the procedure in Table 1. All the lexical collocations were selected based on the working definition proposed in this study. In contrast, single-item vocabulary was chosen from the "stronger lexeme" (Handl, 2008, p. 60) within a lexical collocation as it carries heavier meanings which might trigger its partner words or the so-called 'collocates.' Take the collocation, 'overcome difficulties' as an example. 'Overcome' was selected over 'difficulties' when teaching single-item vocabulary because it was regarded the stronger lexeme.

During a 30-minute teaching session, the researcher provided either the lexical collocation list or the target single-item word list to the students and informed them to form in groups to discuss the list first. The student groups were given another list of the collocations or words with the Chinese translations afterwards. Each small group was told to compose a sentence by using a target collocation or word. Groups then took turns presenting their sentences orally until they finished the list. When any group had difficulty understanding the Chinese translations, the researcher would provide assistance. In short, the major instructional difference was that the researcher did not offer possible lexical combinations as examples to the students when presenting the single-item vocabulary instruction treatment.

⁶ The inter-rater reliability was confirmed as the scores awarded by the two judges showed a correlation of 0.683, $p < 0.01$ by running a Pearson correlation coefficient.

⁷ The original book is written bilingually in English and Chinese, but it has no Chinese title.

As for the no instruction treatment, no teaching material, activity, or discussion was performed in the class. During this 30-minute period, all the participants conducted self-study before taking the speaking test.

3.4 Data Analysis and Statistical Procedures

All the data were tallied into Microsoft Excel and later computed by Statistical Package for the Social Science (SPSS) version 14. A preliminary analysis was first conducted by computing the descriptive statistics of the 92 Taiwanese college English majors' test performances. Later, a Repeated-Measure ANOVA and Post Hoc Multiple Comparisons (Bachman, 2004; Haslam & McGarty, 2003; Weiss, 2005) were employed to answer respectively the two research questions addressed in the study.

4. Research Results and Discussion

4.1 Analysis of Research Question One

Research question one asked: Are there differences in Taiwanese college English majors' speaking fluency as a result of lexical collocation instruction, single-item vocabulary instruction, and no instruction? This question is answered from two aspects by examining the 92 students' performance immediately after the instruction and their gain of speaking fluency detected between the pre- and three post-teaching speaking tests.

4.1.1 Student performance immediately after instruction

In order to determine whether the 92 students performed differently right after each instruction type, the means and the standard deviations from the students' holistic scores of speaking tests are presented in Table 2.

Table 2

Mean of Speaking Fluency after the Three Instruction Types

Instruction Type	Student No.	Mean of Speaking	Standard Deviation
Lexical Collocation	92	*5.09/9	.587
Single-Item Vocabulary	92	4.69/9	.952
No Instruction	92	4.47/9	.884

Note: * indicates the highest student score; in the IELTS exam, the highest score for speaking test is 9.

The data from Table 2 evidently show that the students' performances measured immediately after the lexical collocation instruction were the best. A Repeated-Measure ANOVA (see Table 3) was further adopted to see if the mean differences among the three instruction types were statistically meaningful. The results from Table 3 indicate that a significant difference existed among the participants immediately after receiving each of the three types of instruction, $F(1, 88) = 10446.979, p < .005$. Likewise, the results also show that the student performances among the four levels immediately after the three instructional types were significantly different, $F(3, 88) = 51.704, p < .005$.

Table 3

Repeated-Measure ANOVA for the Three Instruction Types

Source of Variation	df	F	Significance
Instruction Type	1	10446.979	.000***
Levels	3	51.704	.000***
Within Cells	88		

Note: *** $p < .0005$

Because there were significant differences in the subjects' performances after receiving each of the three instructional treatments, Post Hoc Multiple Comparisons, as shown in Table 4, were further carried out to compare the effects of instructional treatments on the subjects' performances of speaking tests.

Table 4
Multiple Comparisons of the Three Instructional Treatments on Speaking Fluency (N=92)

Group (I)	Group (J)	Mean Diff. (I-J)	Significance
Lexical Collocation	Single-item Vocabulary	.390	.000***
	No Instruction	.599	.000***
Single-item Vocabulary	Lexical Collocation	-.390	.000***
	No Instruction	.209	.000***
No Instruction	Lexical Collocation	-.599	.000***
	Single-item Vocabulary	-.209	.000***

Note 1: *** $p < .05$; 'Mean Diff.' = mean difference.

Table 4 suggests that the 92 students performed better in speaking tests after receiving either lexical collocation or single-item vocabulary instruction although lexical collocation instruction seemed to relatively helped more if compared to vocabulary instruction. In sum, regarding the student performance immediately after the three instrumental treatments, the data suggest that:

- (1) The pre-speaking direct word instructions (i.e., lexical collocation and single-item vocabulary instructions) were found to be beneficial to Taiwanese college English majors' oral proficiency;
- (2) The lexical collocation instruction, was regarded the best teaching choice, if contrasted to the single-item vocabulary instruction, because it had greater positive effects on the students' speaking skill.

4.1.2 Student improvement between the pre- and post-tests

To further investigate whether there were differences in the 92 students' gain of speaking fluency after receiving the three types of instruction, the means and the standard deviations from the students' gain between their pre-test and three post-instruction tests are presented in Table 5. The data from Table 5 indicate that the students' improvement of speaking performances was the best after the lexical collocation instruction. Therefore, it is necessary to carry out a Repeated-Measure ANOVA (see Table 6) to determine if the gain in the mean differences among the three instruction types were statistically significant.

Table 5
Gain in the Mean of Speaking Fluency after the Three Instruction Types

Instruction Type	Student No.	Mean of Speaking	Standard Deviation
Lexical Collocation	92	*0.801	0.041
Single-item Vocabulary	92	0.300	0.048
No Instruction	92	0.081	0.038

Note: * indicates the highest score.

Table 6
Repeated-Measure ANOVA for the Gain in the Mean of Speaking Fluency after the Three Instruction Types

Source of Variation	df	F	Significance
Instruction Type	1	189.940	.000***
Levels	3	.702	.553
Within Cells	87		

Note: *** $p < .0005$

The results from Table 6 show that there was a significant difference in their score improvement among the participants after receiving each of the three types of instruction, $F(1, 87) = 189.940, p < .005$. On the contrary, Table 6 presents that the students' gain in their speaking performances among the four levels after the three instructional types were not significant.

Table 7
Multiple Comparisons of the Three Instructional Treatments on the Gain of Speaking Fluency (N=92)

Group (I)	Group (J)	Mean Diff. (I-J)	Significance
Lexical Collocation	Single-item Vocabulary	.501	.000***
	No Instruction	.720	.000***
Single-item Vocabulary	Lexical Collocation	-.501	.000***
	No Instruction	.219	.000***
No Instruction	Lexical Collocation	-.720	.000***
	Single-item Vocabulary	-.219	.000***

Note 1: *** $p < .05$; 'Mean Diff.' = mean difference.

Again, as there were significant differences in the subjects' gain of speaking fluency after receiving each of the three instructional treatments, Post Hoc Multiple Comparisons, illustrated in Table 7, were further carried out to compare the effects of instructional treatments on the subjects' improvement of speaking tests. Table 7 suggests that the 92 students seemed to have improved most after receiving collocation instruction, although single-item vocabulary instruction was found to be also helpful. To sum up, between the pre- and post-tests, the participants would progressed as long as they had received direct 'word-targeted' pre-speaking instruction. Among the three instructional choices, lexical collocation can be prioritized as it seemed to help the participants improve most in the gain of speaking test scores.

In the study by Boers et al. (2006), similar findings were reported. Monitoring the improvement of their EFL students, Boers and his colleagues also found the experimental students who have received consistent teaching of 'formulaic sequences' ("standardized phrases such as collocations and idiomatic expressions" (p. 245)) outscored their control peers in the course-final interview. The two studies both found that collocation instruction had beneficial effects on the improvement of EFL learners' oral proficiency.

4.2 Analysis of Research Question Two

Research question two asked: Are there differences in Taiwanese college English majors' speaking fluency among the four English fluency levels as a result of lexical collocation instruction, single-item vocabulary instruction, and no instruction? Similarly, this question is answered from two aspects by examining the four student groups' performance immediately after the instruction and their gain of speaking fluency detected between the pre- and three post-teaching speaking tests.

4.2.1 Student performances among the four English fluency levels immediately after instruction

The means from the four student groups' holistic scores of speaking tests are presented in Table 8.

Table 8

Mean of Speaking Fluency after the 3 Instruction Types among the 4 Student Groups (N=92)

Instruction	Advanced	High-intermediate	Intermediate	Low-intermediate
Lexical Collocation	5.67*	5.09	5.08	4.57
Single-item Vocabulary	5.57	4.98	4.68	3.61
No Instruction	3.52	4.63	4.24	3.60
Averaged	3.59	4.9	4.6	3.93

Note: * indicates the largest score.

The data from Table 8 clearly show that the advanced group outperformed the other three regardless of any instruction type it immediately received. The results of a Repeated-Measure ANOVA (see Table 3 above) have shown that the student performances among the four levels immediately after the three instructional types were significantly different (i.e., $F(3, 88) = 51.704, p < .005$). It is therefore necessary to look into the Post Hoc Multiple Comparisons of the means of the four student groups.

Table 9

Multiple Comparisons of the Means of the 4 Student Groups with 3 Instruction Types (N=92)

Group (I)	Group (J)	Mean Diff. (I-J)	Significance
Advanced	High-intermediate	.689	.000***
	Intermediate	.921	.000***

	Low-intermediate	1.66	.000***
High-intermediate	Advanced	-.689	.000***
	Intermediate	.232	.076
	Low-intermediate	.971	.000***
Intermediate	Advanced	-.921	.000***
	High-intermediate	-.232	.076
	Low-intermediate	.739	.000***
Low-intermediate	Advanced	-1.66	.000***
	High-intermediate	-.971	.000***
	Intermediate	-.739	.000***

Note: *** $p < .05$

The results of Post Hoc Multiple Comparisons in Table 9 indicate that the advanced group responded best as the students in this particular group outdid their peers of the other three lower English fluency levels. In addition, Table 9 also shows that no significant difference was observed between the high-intermediate and intermediate groups and the students of the lowest fluency level seemed to perform worst when examining the four student groups' performances of speaking tests after the three instructional treatments. To conclude, the results from statistical analysis revealed that a significant difference among the students of four fluency levels existed as a result of immediately receiving three types of instruction.

4.2.2 Student improvement between the pre-and post-tests among the four English fluency levels

To further study whether there were differences in the gain of speaking fluency after the three instruction types among the students of four fluency levels, the means from the students' gain between their pre-test and three post-instruction speaking tests are presented in Table 10. The data from Table 10 reveal that the students of the lowest fluency level were found to improve most in their gain of speaking performances. However, the results from a Repeated-Measure ANOVA, in Table 6, previously have indicated that the students' gain in their speaking performances among the four levels after the three instructional types were not statistically significant. Post Hoc Multiple Comparisons were hence unnecessary. The reason why the differences in the gain of speaking performances among the four student groups were insignificant could be due to the fact that the length of the study was short. It could be difficult to see the students' obvious improvement in their speaking performances measured by the four speaking tests during the four-week period.

Table 10

Gain in the Mean of Speaking Fluency after the 3 Instruction Types among the 4 Student Groups (N=92)

Instruction	Advanced	High-intermediate	Intermediate	Low-intermediate
Lexical Collocation	0.55	0.5	0.98*	1.17**
Single-Item Vocabulary	0.53	0.52	0.24	-0.09
No Instruction	0.12	-0.02	-0.04	0.3
Averaged	0.4	0.33	0.39	0.45

Note: ** indicates the largest score; * refers to the second largest score in the table.

4.2.3 Summary on the student performances among the four fluency levels

In short, the identified differences in the Taiwanese college English majors' performances among the four fluency levels as a result of the three instructional types can be summarized as follows:

- (1) The lexical collocation instruction improved the students' speaking fluency more recognizably than the other two types of instruction across all four fluency levels;
- (2) In terms of the speaking performance measured immediately after instructions, the advanced group performed best whereas the low-intermediate group scored the worst, and no significant difference was found between the high-intermediate and intermediate groups;
- (3) With regard to the gain of speaking performance, the intermediate and low-intermediate groups seemed to have improved most, even though the differences among the four fluency levels were not significantly enough;

5. Conclusion

5.1 Pedagogical Implications

The present study investigates the effects of direct collocation instruction on 92 Taiwanese college English majors' speaking proficiency. The results show that (a) the treatment of collocation instruction promotes the subjects' performance on their speaking fluency tests, outscoring the other two instruction types; (b) the advanced level students seem to benefit most as they outperformed the other three groups after receiving each of the three instruction types; and (c) no significant difference can be found between the high-intermediate and intermediate groups with regard to their post-instruction performances.

The present study has provided several invaluable pedagogical implications. For instance, direct instruction of lexical collocations was regarded beneficial to English majors with advanced language fluency. In regular speaking courses, EFL teachers of college settings can actually add in this type of 'collocation-focused' pre-teaching activities while teaching learners of higher English fluency, such as seniors and juniors enrolled in English departments. In addition, this study, similar to the one by Boers et al. (2006), has found that college English majors made significantly observable progress in their oral proficiency as long as they received collocation instruction. The same type of instruction may be provided to college EFL learners of different L1s word-wide. This concurs with the findings of Luoma (2004) and Towell, Hawkins, and Bazergui (1996) in which they reported 12 learners who used a range of lexical phrases were perceived to be more fluent second language speakers. If class time is limited, what we ought to choose as a priority to teach our students should be lexical collocations.

5.2 Limitations of the Study and Recommendations for Future Studies

First of all, the length of instructional treatments was perhaps the most obvious limitation. As each instruction type was provided once within a limited time period, effects of direct instruction might not have been easily detected. Furthermore, the subject pool was somewhat limited and each subject was not randomly selected. At the research site, the senior and freshmen were relatively more difficult to recruit. It was the major reason that the current study adopted a standardized English proficiency test as a placement test prior to the grouping of subjects. Thirdly, the four speaking tests (i.e., pretest and 3 post-instruction tests) were not flawless. Unlike testing language skills of receptive nature, such as reading or listening, it was very challenging to find four speaking tests of the same level of difficulty. Measuring the gain in the four student groups' speaking performances was therefore difficult. This might have been the main reason that the present study could not find significant differences in the students' gain of speaking performances among the four levels after the three instructional treatments.

As the present study investigated the effects of collocation instruction on the speaking fluency of Taiwanese college English majors, many possible directions can be suggested for future research on collocations. This study was conducted in a 4-week period with a Latin Square design for treatments. The treatments were implemented in the same order and number of times (Furlong et al., 2000; Lien, 2003). An alternative design can be having two groups of English majors—an experimental and a control—attending a course of one complete semester. The subjects' performances on speaking fluency can be later compared upon the end of the experiment. The effects of instructional types may be more evidently examined along with the increased study time.

In addition, this study has found that the upper-level students, i.e., the advanced level group, performed best whereas the low-intermediate group did worst after immediately receiving lexical collocation instruction. The same study should be reduplicated with college English majors in Taiwan with the same EAP learning purposes to further determine whether only the advanced level EFL students of better language proficiency benefit from collocation instruction. By the same token, non-English majors whose language fluency is generally inferior to English majors can be included into the same study so that a more thorough picture of the instructional effects of lexical collocations on EFL learners should be presented.

References

- Aghbar, A. A. (1990, October). *Fixed expressions in written texts: Implications for assessing writing sophistication*. Paper presented at a meeting of the English Association of Pennsylvania State System Universities. (ERIC Document Reproduction Service No. 352 808)
- Bachman, L. F. (2004). *Statistical analysis for language assessment*. Cambridge: Cambridge University Press.
- Bahns, J., & Eldaw, M. (1993). Should we teach EFL students collocations? *System*, 21(1), 101-114.
- Benson, M. (1985). A combinatorial dictionary of English. *Dictionaries: Journal of the Dictionary Society of North America*, 7, 189-200.
- Benson, M., Benson, E., & Ilson, R. (1997). *The BBI dictionary of English word combinations*. Amsterdam: John Benjamins Publishing Company.

- Biber, D., & Conrad, S. (1999). Lexical bundles in conversation and academic prose. In H. Hasselgard & S. Oksefjell (Eds.), *Out of corpora: Studies in honor of Stig Johansson*. (pp. 181-190). Amsterdam: Rodopi.
- Biber, D., Johansson, S., Leech, G., Conrad, S., & Finegan, E. (1999). *Longman grammar of spoken and written English*. Harlow: Pearson Education Limited.
- Boers, F., Eyckmans, J., Kappel, J., Stengers, H., & Demecheleer, M., (2006). Formulaic sequences and perceived oral proficiency: putting the Lexical Approach to the test. *Language Teaching Research*, 10(3), 245-261.
- Ellis, N. (2003). Constructions, chunking, and connectionism: The emergence of second language structure. In C. Doughty & M. Long (Eds.), *Handbook of second language acquisition* (pp. 63-103). Oxford: Blackwell.
- Ellis, N. (2006). Cognitive perspectives on SLA: The Associative Cognitive CREED. *AILA Review*, 19: 100-121.
- Ellis, N. (2008). Phraseology: The periphery and the heart of language. In F. Meunier & S. Granger (Eds.), *Phraseology in foreign language learning and teaching*. (pp. 1-14). Amsterdam: John Benjamins.
- Ellis, R. (1994). *The study of second language acquisition*. Oxford: Oxford University Press.
- Farghal, M., & Obiedat, H. (1995). Collocations: A neglected variable in EFL. *IRAL*, 33 (4), 315-333.
- Firth, J. R. (1957). Modes of meaning. In J. R. Firth, *Papers in linguistics 1934 -1951* (pp. 190-215). Oxford: Oxford University Press.
- Furlong, N. E., Lovelace, E. A., & Lovelace, K. L. (2000). *Research methods and statistics: An integrated approach*. Fortworth: Harcourt College Publishers.
- Halliday, M. A. K. (1966). Lexis as a linguistic level. In C. E. Bazell, J. C. Catford, M. A. K. Halliday & R. H. Robins, (Eds.), *In memory of J. R. Firth* (pp. 148-162). London: Longman.
- Handl, S. (2008). Essential collocations for learners of English: The role of collocational direction and weight. In F. Meunier & S. Granger (Eds.), *Phraseology in foreign language learning and teaching*. (pp. 43-66). Amsterdam: John Benjamins.
- Haslam, S. A., & McGarty, C. (2003). *Research methods and statistics in psychology*. London: Sage Publications Ltd.
- Hausmann, F. J. (1999). Collocations in monolingual and bilingual English dictionaries. In I. Vladimir, & D. Kalogjera (Eds.), *Languages in contact and contrast: Essays in contact linguistics* (pp. 225-236). Berlin: Mouton de Gruyter.
- Hsu, J-Y. (2005). The effects of direct collocation instruction on the English proficiency of Taiwanese college students in a business English workshop. *Soochow Journal of Foreign Languages and Cultures*, 21, 1-39.
- Hsu, J-Y., & Hsu, L-C. (2007). Teaching lexical collocations to enhance listening comprehension of English majors in a technological university of Taiwan. *Soochow Journal of Foreign Languages & Cultures*, 24:1-32.
- Hsu, J-Y., & Chiu, C-Y. (2008). Lexical collocations and their relation to speaking proficiency of college EFL learners in Taiwan. *Asian EFL Journal*, 10(1): 181-204.
- Kenny, G. (1998). *An introduction to corpus linguistics*. New York: Pearson Longman.
- Kenny, G. (2008). Phraseology and language pedagogy: Semantic preference associated with English verbs in the British National Corpus. In F. Meunier & S. Granger (Eds.), *Phraseology in foreign language learning and teaching*. (pp. 21-42). Amsterdam: John Benjamins.
- Kimmes, A-M. (2004). *An investigation of the usage and collocability of English verbs of thinking based on the online edition of the New York Times*. Unpublished master thesis, Southern Connecticut State University, New Haven, Connecticut, USA
- Lien, H-Y. (2003). *The effects of collocation instruction on the reading comprehension of Taiwanese college students*. Unpublished doctoral dissertation, Indiana University of Pennsylvania, Pennsylvania.
- Lin, Y-P. (2007). *The effects of collocation instruction on the development of reading proficiency of vocational high school students in Taiwan*. Unpublished doctoral dissertation, National Kaohsiung Normal University, Taiwan.
- Luoma, S. (2004). *Assessing speaking*. Cambridge: Cambridge University Press.
- Moon, R. (1997). Vocabulary connections: Multi-word items in English. In N. Schmitt, & M. McCarthy, (1997). (Eds.), *Vocabulary: Description, acquisition and pedagogy* (pp. 40-63). Cambridge: Cambridge University Press.
- Meunier, F., & Granger, S. (2008). (Eds.), *Phraseology in foreign language learning and teaching*. Amsterdam: John Benjamins.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nattinger, J., & DeCarrico, J. (1992). *Lexical phrases and language teaching*. Oxford: Oxford University Press.
- O'Keefe, A., McCarthy, M., & Carter, R. (2007). *From corpus to classroom: Language use and language teaching*. Cambridge: Cambridge University Press.
- Pawley, A., & Syder, H. (1983). Two puzzles for linguistic theory: Nativelike selection and nativelike fluency. In J. C. Richard & R. W. Schmidt (Eds.), *Language and communication* (pp. 191-225). New York: Longman.

- Read, J. and Nation, I.S.P. (2004) *Measurement of formulaic sequences*. In N. Schmitt (ed.) *Formulaic Sequences* (pp. 23-35). Amsterdam: John Benjamins.
- Schmitt, N. (2004). (Ed.). *Formulaic sequences*. Amsterdam: John Benjamins.
- Schmitt, N. (2008). Instructed second language vocabulary learning. *Language Teaching Research*, 17(3), 329-363.
- Schmitt, N., & Carter, R. (2004). Formulaic sequences in action: An introduction. In N. Schmitt (Ed.), *Formulaic sequences* (pp. 1-22). Amsterdam: John Benjamins.
- Sinclair, J. (1966). Beginning the study of lexis. In C. E. Bazell, J. C. Catford, M. A. K. Halliday & R. H. Robins. (Eds), *In memory of J. R. Firth* (pp. 410-430). London: Longman.
- Towell, R., Hawkins, R., & Bazergui, N. (1996). The development of fluency in advanced learners of French. *Applied Linguistics*, 17:84-119.
- Tseng, F-P.(2002). *A study of the effects of collocation instruction on the collocational competence of junior high school students in Taiwan*. Unpublished master thesis, National Taiwan Normal University, Taiwan.
- Tseng, T-Y.(2005). *Test Preparation Guide for IELTS Speaking and Listening*. Taipei: Jinni Publishing Co., Ltd
- Weiss, N. A. (2005). *Introductory statistics*. Boston: Pearson Education, Inc.
- Wray, A. (2000). Formulaic sequences in second language teaching: Principle and practice. *Applied Linguistics*, 21(4): 463-489.
- Wray, A. (2002). *Formulaic language and the lexicon*. Cambridge: Cambridge University Press.