English collocation learning through meaning-focused and form-focused activities: Interactions of activity types and L1-L2 congruence

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Abstract
Since much of natural language consists of prefabricated chunks, learning words in isolation does not necessarily help L2 learners become successful communicators. Learners also have to acquire a large number of collocations to be able to produce and comprehend ideas accurately and fluently. Despite their importance, research on collocations has indicated that collocations are an inherent problem for L2 learners. Especially, collocations that do not have translation equivalents in L1 have been demonstrated to present more difficulty for learners than those which are congruent between L1 and L2 (hereafter, the former will be referred to as non-congruent collocations and the latter as congruent collocations). The present study compares collocation learning through meaning-focused and form-focused activities and aims to investigate (1) how meaning-focused and form-focused activities contribute to development in collocational knowledge and (2) whether congruent and non-congruent collocations benefit differently from the two types of activities. The results of the study showed that although no significant difference existed in the study time between the two conditions, the form-focused condition led to significantly higher posttest scores than the meaning-focused condition (78.1% vs. 2.3% in the verb + noun test and 84.0% vs. 22.4% in the verb test for the form-focused and meaning-focused conditions, respectively). The interaction between the learning conditions and collocation types was also significant in scores for the verb test: while the form condition was equally effective for both the congruent and non-congruent items, the posttest scores for the non-congruent collocations were significantly lower than those for the congruent ones in the meaning-focused condition in the verb test. The present experiment seems to constitute support for the observation that collocations, especially, non-congruent items, cannot be acquired easily through mere exposure and are amenable to form-focused, intentional learning.

1. Introduction
In the field of second language acquisition (SLA), there has been much research on vocabulary acquisition, especially since the 1980’s. Despite the abundance of publications, researchers have observed that previous research suffers from a number of limitations. Above all, it has been pointed out that most studies have adopted too narrow a definition of what constitutes vocabulary acquisition. Many studies to date have assumed that a word is acquired when a subject demonstrates the ability to match an L2 word with its meaning, usually in a translation task or a multiple-choice test (Jiang, 2004a, 2004b; Pigada & Schmitt, 2006; Waring & Nation, 2004; Waring & Takaki, 2003).

Although such an operational definition is understandable given methodological constraints,
this sort of narrow view of vocabulary acquisition is unfortunate since the traditional definition of lexical acquisition recognizes individual words as the only significant units of meaning and underestimates the role of formulaic sequences (Coady & Huckin, 1999; Jones & Haywood, 2004; Read, 2004; Schmitt & Carter, 2004; Waring & Nation, 2004), or multi-word units that appear to be stored and retrieved as a chunk from memory (Wray, 2002). Since much of natural language consists of prefabricated chunks, learning words in isolation does not necessarily help L2 learners become successful communicators. They also have to acquire a large number of formulaic sequences to be able to produce and comprehend ideas accurately and fluently (Nattinger & DeCarrico, 1992; Pawley & Syder, 1983; Wray, 2000, 2002).

Despite their significance, little is known about how formulaic sequences are acquired by L2 learners. The present study aims to fill this gap by investigating how collocations, one type of formulaic sequences, are learned through two types of tasks, namely, meaning-focused and form-focused tasks. A possible interaction of types of tasks and collocations will also be examined to test whether different types of collocations benefit differently from meaning- and form-focused tasks.

2. Previous research

2.1 The role of formulaic sequences in L2 learning

Formulaic sequence is an umbrella term and includes various types of prefabricated chunks such as idioms, collocations, and sentence frames (Wray, 2000). The recent developments in corpus linguistics have shown that instead of exercising the creative potential of syntactic rules of a generative grammar, native speakers of English frequently utilize formulaic sequences. It is now acknowledged that formulaic sequences serve several important functions not only for native speakers but also for L2 learners. Firstly, these prefabricated units are essential for fluency in language production. In normal English speech, speakers produce two to three words per second (Hulstijn, 2001), which requires extensive processing effort. Since the human brain is better at memorizing rather than processing, speakers attain fluency by utilizing prefabricated units. Formulaic sequences, which are retrieved from memory as whole units, require less processing effort than creative utterances constructed from scratch and allow the speaker to produce language fluently (Kuiper, 2004; Nesselhauf, 2005; Schmitt & Carter, 2004; Wray, 2000; 2002). Secondly, many formulaic sequences are associated with a certain pragmatic or interactional function such as a fluency device (so to speak), a topic marker (let me start by/with …), or a politeness marker (I wonder if you’d mind; Nattinger & DeCarrico, 1992; Pawley & Syder, 1983; Wray, 2000; 2002). The mastery of these devices is indispensable to developing pragmatic competence.

2.2 Collocations and L2 learners

This study will bring collocations, one particular type of formulaic sequence, into focus. Collocations are defined as arbitrarily restricted lexeme combinations that “co-occur in natural text
with greater than random frequency” (Lewis, 1997, p.8) and follow certain syntactic patterns such as verb + noun, adjective + noun, and verb + adverb (Granger, 1998; Howarth, 1998; Nesselhauf, 2003, 2005). Research on collocation acquisition seems particularly promising not only because such items are an essential part of formulaic sequences but also because collocational knowledge is a prerequisite for successful communication (Bahns & Eldaw, 1993; Howarth, 1998; Koya, 2002; Murao, 2004; Nesselhauf, 2003, 2005) and constitutes one of the most important aspects of vocabulary depth in several models of mental lexicon (Ellis, 2001; Henriksen, 1999; Nation, 2001).

In spite of the increasing recognition of collocational knowledge as an indispensable part of L2 proficiency, research on collocations has indicated that collocations are an inherent problem for L2 learners (Bahns & Eldaw, 1993; Howarth, 1998; Murao, 2004; Nesselhauf, 2003, 2005). Especially, collocations that do not have translation equivalents in L1 have been demonstrated to present more difficulty for learners than those which are congruent between L1 and L2 (hereafter, the former will be referred to as non-congruent collocations and the latter as congruent collocations). For instance, in Japanese, we take contact (連絡をとる) and pay sacrifice (犠牲を払う) while in English, we make contact and make sacrifice. These non-congruent collocations present more challenges for L2 learners than congruent items such as take responsibility (責任をとる) or pay attention (注意を払う) when other variables that affect the difficulty of the collocations are controlled (Bahns & Eldaw, 1993; Granger, 1998; Koya, 2002; Murao, 2004; Nesselhauf, 2003, 2005).

2.3 Teaching of collocations

When it comes to the teaching of collocations, there seem to exist two conflicting views. While some researchers argue that most collocations can be learned incidentally through message-focused activities such as extensive reading (Ellis & Sinclair, 1996; Nation, 2001), others advocate teaching collocations explicitly through form-focused activities that are conducted primarily for collocational development,rote-memorization or mechanical drills for instance (Bahns & Eldaw, 1993; Nesselhauf, 2003, 2005; Murao, 2004, among others). Especially, non-congruent collocations that do not have translation equivalents in L1 are believed to be amenable to intentional learning through form-focused tasks (Bahns & Eldaw, 1993; Koya, 2002; Murao, 2004; Nesselhauf, 2003, 2005).

Although there is disagreement among the researchers over the contributions that meaning-focused and form-focused activities make for the development of collocational knowledge, no studies have ever directly compared collocation learning under the two activities, and the claims made so far regarding the relative effectiveness of meaning- and form-focused learning remain speculative. Empirical studies have compared vocabulary learning under meaning- and form-focused tasks and discovered that the latter lead to significantly higher retention than the former, suggesting that lexical acquisition is conditional upon the quality and quantity of the information processing of target items (Hill & Laufer, 2003; Laufer, 2003; Laufer & Shmueli, 1997; Paribakht & Wesche, 1997). However, since previous research has mostly used individual words as target items, it
is not yet clear whether we will find a similar result for collocation learning. Several researchers have also 
asserted that non-congruent collocations cannot be acquired easily through mere exposure and 
deserve form-focused learning (Bahns & Eldaw, 1993; Koya, 2002; Murao, 2004; Nesselhauf, 2003, 2005). Yet, we are still short on empirical evidence for such a claim. With the limitations of the 
previous research in mind, the present study compares collocation learning through meaning-focused 
and form-focused tasks and aims to investigate the following two research questions:
RQ1: How do meaning-focused and form-focused tasks contribute to development in collocational 
knowledge?
RQ2: Do congruent and non-congruent collocations benefit differently from meaning-focused and 
form-focused tasks?

3. Method
3.1 Target items
16 verb + noun collocations were selected as target items from several sources such as Bahns & 
Eldaw (1993), Koya (2002), and Murao (2004). The 16 target items were comprised of eight 
congruent and eight non-congruent collocations (See Table 1 for the list of target items). Two groups 
of items were matched for factors such as frequency, the number of letters, or degree of restriction so 
that the only difference between them would be the L1-L2 congruence factor. Two weeks before the 
study session, the subjects took a pretest that required them to translate these collocations from 
Japanese into English. On the pretest, no one exhibited prior knowledge of any of the target 
collocations.

3.2 Participants
The participants were 28 Japanese first-year university students. Participants were assigned 
either to Group A or Group B based on their TOEIC scores so that there would be no significant 
difference in scores on the TOEIC test, t (26) = 0.04, n.s. The 16 target collocations were divided into 
Items X and Items Y (Table 1), and the two groups of subjects learned different sets of collocations 
under the meaning-focused and form-focused conditions (Table 1).

<table>
<thead>
<tr>
<th>Table 1: Item assignment for Group A and B</th>
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<tbody>
<tr>
<td>Items X</td>
</tr>
<tr>
<td>Group A</td>
</tr>
<tr>
<td>Group B</td>
</tr>
</tbody>
</table>

Note. Items X = congruent: do business, get certificate, give sentence, take pulse, non-congruent: do 
damage, make pact, pay visit, put restriction, Items Y = congruent: do survey, give blow, pay 
heed, take measure, non-congruent: make sacrifice, pay compliment, put pressure, set example.
3.3 Materials

In this experiment, all the experimental procedures were administered on an individual basis with computer software which was programmed by the present author with Microsoft Visual Basic for Excel (See Appendix for the source codes of the software). The program consists of two components: the meaning-focused and form-focused conditions. In the former, the subjects were presented with short English passages containing target collocations and asked to answer comprehension questions about the passages. In the latter condition, the program required the learners to type and practice the target collocations.

In the program, the subjects were first required to study under the meaning-focused condition (Figure 1). In this condition, the program displayed eight short passages each of which contained one of the target collocations. The passages were taken from the Daily Yomiuri, an English newspaper. The average length of the passages was 61.2 words (SD = 4.8). The learners were requested to read a passage and answer a multiple-choice, comprehension question about each passage. There were four options: the correct answer, two distractors, and the option “I don’t know.”

![Figure 1: A screenshot of the program (the meaning-focused condition)](image)

The comprehension questions were created in a manner such that the subjects could not come up with the correct answer unless they understood what the target collocation meant. By so doing, the aim was to verify that all the learners noticed and understood the target collocation correctly, increasing the learners’ chance of learning them incidentally. L1 glosses were provided for words that were outside
the most frequent 2000 word families (West, 1953) so that the presence of unknown words would not disrupt reading comprehension.

When the subjects chose an option and clicked on the OK button, the program automatically displayed the correct answer to the comprehension question in a feedback window (Figure 2).

![Figure 2: The feedback window (the meaning-focused condition)](image)

The feedback window consisted of the comprehension question, the correct answer for the question, the reading passage, and a Japanese translation of the whole passage. The Japanese translation of the passage was given to ensure that the subjects understood the whole passage including the meaning of the target collocation. When the learners closed the feedback window, the next question was provided. Sequencing of items was controlled by a sequencing algorithm called the Low-First Learning Method (Mizuno, 2000). The reading task ended when all the eight items reached their preset retirement criterion determined by the algorithm.

In the form-focused condition, the participants were presented a Japanese translation as a cue and requested to type the corresponding English collocation in the white box (Figure 3). When the learners did not know the answer, they were instructed to click on the OK button leaving the answer box blank.
As in the meaning-focused condition, the program displayed the corrective feedback window when the OK button was clicked (Figure 4). The feedback window included the correct English collocation, a reading passage containing the target collocation, and a Japanese translation for the passage. The passage in the feedback window was exactly the same as that which the subjects in the meaning-focused condition read. This was done to make sure that learners in both conditions were exposed to the same input and that the only difference between the two conditions would be the types of tasks. This allows us to assume that the different outcomes obtained under the two conditions resulted solely from differences in learning conditions, not the quality of the input they received. As in the meaning-focused condition, sequencing of items and the retirement criterion for the target collocations were controlled by the Low-First Learning Method (Mizuno, 2000).
3.4 Procedure

The following figure illustrates the global design of the experiment.

![Figure 5: The global design of the experiment](image)

1. Pretest
   Firstly, a pretest was administered to ascertain whether the participants had prior knowledge of the target collocations (See 3.1 Target items for details).
2. Overall instructions
   Two weeks after the pretest, the learners participated in the study session. At the beginning,
the researcher gave overall instructions about the experiment. All the details of the experiment were explained with the exception of the posttest after the meaning-focused condition. The test was administered without prior notice in order to prevent intentional learning of collocations in the meaning-focused condition.

3. Practice: the meaning-focused condition

The subjects practiced using the meaning-focused component of the program with two sample collocations (drink water and play piano).

4. The meaning-focused condition

The subjects were first required to study under the meaning-focused condition (Figure 1). They read eight short passages each of which contained one of the target collocations and answered comprehension questions about the passages.

5. Distractor task

After completing the meaning-focused condition, the participants answered 10 two-digit additions as a distractor task.

6. Immediate posttest (verb + noun test and verb test)

The subjects took two types of tests: the verb + noun test and the verb test. In the first type of test, the subjects were required to recall the eight target English collocations from Japanese translations. A short context sentence, which was different from what the subjects encountered during the learning session, was also given. In the second test, in addition to the Japanese translation and context sentence, the correct noun for the collocation was provided as a cue. The subjects were asked to supply the appropriate verb that would go with the noun. Ordering of the test items was randomized for each subject. In scoring the posttest, a full one point was given for a correct response. Any misspelling was regarded as an incorrect answer, and no partial credit was given. Examples of the two tests are given below:

(Verb + noun test)

Cue: 判決を与える
Context sentence: They decided to ( ) a life ( ) to the criminal.
L1 Translation: 彼らはその犯罪者に対して、終身刑の判決を与えることに決定した。
Answer: give, sentence

(Verb test)

Cue: 判決を与える
Context sentence: They decided to ( ) a life (sentence) to the criminal.
L1 Translation: 彼らはその犯罪者に対して、終身刑の判決を与えることに決定した。
Answer: give

7. Practice: the form-focused condition
The subjects practiced using the form-focused component of the program with two sample collocations (*drink water* and *play piano*).

8. The form-focused condition

The participants were presented a Japanese translation as a cue and requested to type and practice the corresponding English collocation (Figure 3).

9. Distractor task

The participants answered 10 two-digit additions as a distractor task.

10. Immediate posttest (verb + noun test and verb test)

The subjects took the two types of posttests: the verb + noun test and the verb test (See above).

11. Questionnaire

The subjects filled in a questionnaire, which requested them to evaluate the computer program used in the experiment and provide some background information about themselves.

4. Results

The results of the study showed that although no significant difference existed in the study time between the two conditions, *t* (27) = -0.12, *n.s.*, the form-focused condition led to higher posttest scores than the meaning-focused condition (78.1% vs. 2.3% in the verb + noun test and 84.0% vs. 22.4% in the verb test for the form-focused and meaning-focused conditions, respectively).

![Figure 6: Average posttest scores for the meaning-focused and form-focused conditions](image)

In order to test whether the difference was statistically significant, the average scores were compared with a Wilcoxon's signed-ranks test. The analysis revealed that in the verb + noun test, the average score for the form-focused condition was significantly higher than that for the meaning-focused condition for both the congruent, *Z* = -4.73, *p* < .001, and non-congruent items, *Z* = -4.69, *p* < .001. No significant difference existed between the scores for the congruent and non-congruent items either in the meaning-focused, *Z* = -1.34, *n.s.*, or the form-focused condition, *Z* = -0.99, *n.s.* In the verb test,
once again, the form-focused condition led to superior learning than the meaning-focused condition for both the congruent, \(Z = -4.20, p < .001\), and non-congruent items, \(Z = -4.61, p < .001\). Regarding
the interaction between the learning conditions and collocation types, a different trend emerged: while
no significant difference was detected between the scores for the congruent and non-congruent items
in the form-focused condition, \(Z = -2.43, n.s.\), the learners recalled significantly more congruent
collocations than non-congruent items in the meaning-focused condition, \(Z = -3.97, p < .001\).

In summary, the form-focused condition resulted in a higher collocational gain than the
meaning-focused condition regardless of the types of collocations or tests. The effect of L1-L2
congruence factor was observed only in the verb test for the meaning-focused subjects: in the verb
test, congruent collocations yielded a significantly higher score than non-congruent ones while the
form-focused condition was equally effective for both the congruent and non-congruent items (See
Nakata, 2006, for further analysis and discussion).

5. Conclusion

The present experiment seems to constitute support for the observation that collocations,
especially, non-congruent items, cannot be acquired easily through mere exposure and are amenable
to form-focused, intentional learning, the claim made often by previous literature but rarely
examined empirically. Yet, as the duration of the present experiment is relatively short, we should
be cautious about drawing pedagogical implications from the results. Even though collocation
learning under the meaning-focused condition yielded only a small gain in the learners’ collocational
knowledge, the cumulative gain might be enormous when they read regularly and repeatedly.
Besides the short duration of the treatment, the present study suffers from several other limitations.
Firstly, in the present experiment, only the immediate posttest was given. Future research needs to
administer a delayed posttest to examine whether the effectiveness of the form-focused learning is
retained. Secondly, as it would be impractical to try to teach every collocation explicitly, it seems
worth investigating what kinds of vocabulary interventions might promote incidental collocation
learning during reading.

References

Second Language Acquisition, 21, 181-193.
instruction (pp. 33-68). Cambridge: Cambridge University Press.


Appendix
Source codes for the program used in the experiment

' In Visual Basic for Excel Version 6.0
Private Sub OKButton_Click()
If i = 0 Then
    Call FirstSetting 'When the "OK" button is clicked for the first time, start initializing.
    GoTo Question
End If
Select Case Qtype
Case 1
    ' In the form-focused condition, do the following:
    Feedback.Explanation.Text = Cells(i, 95 + 10 * Qtype + 3) & ": = " & Cells(i, 95 + 10 * Qtype + 4)
    Feedback.English.Text = Cells(i, EngArticleColumn)
    Feedback.Japanese.Text = Cells(i, JapArticleColumn)
    Feedback.AdditionalLabel.Visible = True
    Feedback.CommandButton1.Left = 186
    Feedback.BriefContext.Text = Cells(i, 95 + 10 * Qtype + 1) & ChrW(10) & Cells(i, 95 + 10 * Qtype + 2)
    FonFAns = Cells(i, 95 + 10 * Qtype + 4)
    ' Judge whether the learner answered the item correctly/incorrectly
    If AnswerBox.Text = Cells(i, 95 + 10 * Qtype + 4) Then
        Call CorrectAns 'When the answer is correct...
    Else
        Call WrongAns 'When the answer is incorrect...
    End If
    ' Record the learner's response.
    If AnswerBox.Text <> "" Then
        ItemInput(Cells(i, ItemID), Session) = AnswerBox.Text
    Else
        ItemInput(Cells(i, ItemID), Session) = "-----" 'Blank answer.
    End If

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AnswerBox.Text = "" 'Clear the answer box for the next item.

Case 2

' In the meaning-focused condition, do the following:
Feedback.English.Text = Cells(i, EngArticleColumn)
Feedback.Japanese.Text = Cells(i, JapArticleColumn)
Feedback.Explanation.Font.Size = 12
Call MCJudge

End Select

ItemEndTime = Now()
ItemStudySec = DateDiff("s", ItemStartTime, ItemEndTime)

ItemTime(Cells(i, ItemID), Session) = ItemStudySec 'Record the study time for the item.
Call TotalInfoDisp 'Display information about the learning session.

Question:
Call LFSequencing

Select Case Qtype

Case 1

' In the form-focused condition, do the following:
TypeFrame.Visible = True
DirectionBox.Font.Size = 10: QuestionBox.Font.Size = 20
QuestionBox.Caption = Cells(i, 95 + 10 * Qtype + 3)
TempText = Cells(i, 95 + 10 * Qtype + 1): Call DoubleSubst(TempText):
HintBox.Caption = TempText:
PromptBox.Caption = Cells(i, 95 + 10 * Qtype + 2)

Case 2

' In the meaning-focused condition, do the following:
Call MCGenerate
QuestionBox.Font.Size = 14
QuestionBox.Caption = Cells(i, EngArticleColumn)
HintBox.Caption = Cells(i, 95 + 10 * Qtype + 2)

End Select

ItemStartTime = Now()
EndofQ:

End Sub