Learnability of Various Patterns of Lexical Collocations by Iranian Upper-Intermediate Learners of English

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Abstract
To investigate the effect of different patterns of lexical collocations on the recognition and production of Iranian upper-intermediate learners of English, 34 participants at Imam Khomeini International University (IKIU) in Qazvin were presented with receptive and productive tests of English collocations. To compare the participants' recognition of various patterns of lexical collocations, a one-way ANOVA procedure was used. Results indicated that the participants performed relatively better on 'adjective + noun' and 'noun + noun' patterns of lexical collocations, although the differences among the scores of the participants on the different patterns were not statistically significant. Another one-way ANOVA procedure was used to compare the participants' production of the same patterns. Analysis showed that of the seven patterns of lexical collocations investigated, the participants' performance on the 'noun + verb' pattern was significantly poorer than the other patterns.

Keywords: Lexical Collocations; Recognition of Collocations; Production of Collocations

Introduction
According to Otani (2005, p. 2), Saussure's claim that a word is defined by what surrounds it echoes the well-known Firthian phrase: "you shall know a word by the company it keeps"; it is here that the concept of collocation is manifested. Collocations might be defined as either "the way in which words co-occur in natural texts in statistically significant ways" (Lewis, 2000, p. 6) or "the co-
occurrence of lexical meanings of words with other surrounding lexical units” (Jing, 2008, p. 58). Similarly, Benson (1990) describes collocations as word combinations which are arbitrary and recurrent.

In general, collocations are of two major types: grammatical collocations which relate to the grammatical categories rather than meaning associations and lexical collocations which relate to word associations (Zarei, 2002). In the present study, the focus of attention is only on lexical collocations.

According to Nesselhauf (2003, pp. 223-224), "owing to the nature of collocations (i.e. the fact that they are fairly transparent), comprehension is normally unproblematic for learners, so that identifying the problems of learners must mean analyzing their production". However, several studies (Bahns & Eldaw, 1993; Howarth, 1998; Higuchi, 1999; Nesselhauf, 2003; Li, 2005; Huang, 2007; Hsu & Chiu, 2008; Zinkgraf, 2008) have shown that learners may have problems in dealing with both comprehension and production of collocations. The major objective of the present study, therefore, is to investigate the problems of Iranian upper-intermediate learners with the comprehension and production of different patterns of English lexical collocations.

Review of the Literature

Hsu (2002) holds that Firth describes the meaning of a word at the collocational level by focusing on the relationship between words on a syntagmatic level rather than a paradigmatic one. Zarei (2002) believes that this syntagmatic level refers to the ability of a word to combine with other words in the same string and that this defines a collocation. In the simplest definition, collocations refer to "an arbitrary and syntagmatic link between at least two lexemes (verbs, nouns, adverbs and adjectives), for example: commit a crime, blissfully unaware" (Zinkgraf, 2008, p. 93). Tutin (2008) claims that there are two main conceptions of collocations in the European tradition. First, in the British contextualist framework, collocations can be broadly defined as recurrent lexical elements which contribute to text cohesion. Secondly, in the continental tradition, collocations are referred to as "restricted lexical collocations" (p. 43) and considered as lexicalized phrases where two recurrent lexical elements have a syntactic relationship.

The literature on collocations includes various claims about the role of collocations in language learning. Hill (2000, p. 16) claims that "it is possible that
up to 70% of everything we say, hear, read or write is to be found in some form of fixed expression”. Nation (2001) also acknowledges the significance of collocations by stating that "language knowledge is collocational knowledge” (p. 318).

In the linguistic and lexicographic literature, the term 'collocations' is often discussed in contrast with free word combinations and idioms. Hsu (2002) proposes that if we consider a continuum for word combinations in which idioms are situated on one extreme and free word combinations on the other, collocations fall somewhere in the middle. It means that collocations are "the combinations of the syntagmatic restrictions of idioms and the semantic transparency of free word combinations” (p.18).

Siepmann (2005a, p. 418) holds that free word combinations are combinations of two semantically autonomous words, whereas collocations are the combination of a semantically autonomous and a semantically dependent lexical item. Nesselhauf (2003) makes a distinction between collocations and idioms on the basis of the notion of restricted sense. Based on her definition, collocations (e.g. *take a picture*) are those combinations in which only one of the words like the verb is restricted and the other word, e.g. the noun, is used in an unrestricted sense. In other words, the verb can only be combined with certain nouns (*take a picture/photograph*; but not *take a film or movie*). But in idioms (e.g. *sweeten the pill*), both words (the verb and the noun) must be used in a restricted sense, so it is either impossible or only possible to an extremely limited degree to use substitution.

According to Siepmann (2005b), collocations have been approached from three main angles. These include the semantically-based approach, the frequency-oriented approach, and the pragmatic approach. Siepmann claims that the semantically-based approach emphasizes the lexical relationship between the collocational constituents. The frequency-oriented approach looks at statistically significant co-occurrences of two or more words. In the pragmatic approach, the grammatical irregularities and non-compositionality of such expressions are functionally subordinate to pragmatic regularities which determine the relationship between the situational context and linguistic forms (Feilke, 2003, cited in Siepmann, 2005b).
Collocational problems

Many scholars maintain that collocational knowledge differentiates native speakers from second language learners (Nesselhauf, 2003; Li, 2005; Huang, 2007; Hsu & Chiu, 2008). Erroneous utterances such as *the manager of the university, *to take fish, *heavy tea and *to be bad in something are not due to poor lexical or grammatical knowledge. These problems arise partly from lack of knowledge about the company that words keep, i.e., collocations. One form of collocational problem is when two words are synonyms or near synonyms like baggage and luggage, but only one of them can be modified by an adjective like emotional. This means that substitution of the words which are synonymous does not always produce acceptable combinations. This is an intralingual problem. The other type of problem is interlingual; that is, problems caused by the differences between collocations from one language to another. Pearce (2001) gives an example of this problem: a clear road in English is a free road in Greek. Similarly, a heavy drinker in English is a strong glass in Greek. This problem occurs because of the negative transfer of L1 features.

Categories of Collocations

According to Zarei (2002), there are two general types of collocations including grammatical and lexical collocations. Grammatical collocations are the combination of a content or dominant word (verb, noun or adjective) and a grammatical or function word (preposition or structural pattern). In contrast to grammatical collocations, lexical collocations do not contain grammatical elements. Lexical collocations consist of a group of words with a certain meaning which occur together. Lexical collocations also include words which have "an approximately equal status" (Jänecke & Lindner, 2006, p. 6).

Lewis (2000) believes that "lexical collocations are the combination of two equal lexical components (e.g. an evasive answer), while grammatical collocations combine a lexical word, typically a noun, a verb or an adjective with a grammatical word" (p. 133). Benson, Benson and Lison (1997) divide lexical collocations into the following categories.
Table 1

<table>
<thead>
<tr>
<th>Categories of Lexical Collocations</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Verb + Noun (creation)</td>
<td>e.g.: make impression, compose music</td>
</tr>
<tr>
<td>2. Verb + Noun (eradication)</td>
<td>e.g.: break a code, reverse a decision</td>
</tr>
<tr>
<td>3. Adjective + Noun</td>
<td>e.g.: strong tea, weak tea</td>
</tr>
<tr>
<td>4. Noun + Verb (an action)</td>
<td>e.g.: bees buzz, bomb explodes</td>
</tr>
<tr>
<td>5. Noun + Noun</td>
<td>e.g.: a pack of dogs, a box of matches</td>
</tr>
<tr>
<td>6. Adverb + Adjective</td>
<td>e.g.: strictly accurate, sound asleep</td>
</tr>
<tr>
<td>7. Verb + Adverb</td>
<td>e.g.: argue heatedly, appreciate sincerely</td>
</tr>
</tbody>
</table>

Words can combine with each other under one of these categories. The present study seeks to investigate which of the above kinds of collocations are more problematic for Iranian upper-intermediate learners of English to comprehend and produce.

Several studies have investigated the collocational knowledge of EFL learners. Bahns and Eldaw (1993) assessed the collocational knowledge of German advanced EFL learners. In their study, which focused on 15 verb-noun collocations in English, Bahns and Eldaw used a translation and a cloze task. They came to the conclusion that EFL learners have insufficient knowledge of English collocations.

Farghal and Obiedat (1995) compared the collocational knowledge of 34 advanced EFL learners and 23 English language teachers in Jordan. Two different questionnaires were administered to these two groups. A fill-in-the-blank test, in English, was given to the participants in the first group and a translation test, in Arabic, was administered to the teachers in the second one. They found that not only advanced EFL learners but also English language teachers were deficient in their collocational knowledge.

Gitsaki (1996) investigated the relationship between the collocational knowledge of Greek EFL learners and their level of proficiency. 275 learners at three proficiency levels participated in the study. Three types of tasks were used: essay writing elicited the free production of collocations while translation and fill-in-the-blank tasks measured the accuracy of the learners' collocational knowledge.
in cued production tasks. Analysis of the data showed that learners' collocational knowledge increased as the level of proficiency increased.

Howarth (1998) compared English native speakers' writing with near-native ones. The writings of the students were given to a native speaker evaluator. The participants were postgraduate students with different backgrounds at British universities. Analysis of the data revealed that both native speakers and near-native speakers had problems in semantic and syntactic areas, but only near-native speakers made wrong choices and used nonstandard collocations.

The findings of Barfield's (2002) study support Bahns and Eldaw's (1993) viewpoints. Barfield conducted a similar study with Japanese learners of English. He had two groups in which ten students participated. The experiment focused on the learners' use of verb-noun collocations. Based on the collocational errors of the learners, he concluded that insufficient knowledge of the verb component of a collocation impeded the recognition of collocations.

Zarei and Koosha (2003) looked at Iranian advanced learners' problems with the production of English lexical collocations. Their study was divided into two phases: in the first phase, they focused on the collocational errors which were extracted from 2400 pages of materials produced in English by Iranians. By analysing the list of collocational errors extracted from the production of 27 high-proficiency level Iranians, they found five patterns of collocations which were more problematic. In the second phase, six cued production tasks were given to 64 participants. Their analysis led them to conclude that about 55% of the time, Iranian advanced learners of English had difficulties in their production of English collocations.

In a similar study, Nesselhauf (2003) analysed 32 essays which were written by German speaking learners of English. She used three steps in her investigation. The first step was based on extracting the verb-object-noun combinations from the essays. Then, she classified them on the basis of their degree of restrictions, i.e. free combinations (F), restricted collocations (RC) and idioms (I) and, in the last step, she evaluated their acceptability in English. She extracted 1072 verb-object-noun combinations from the learners' essays, and divided them into 846 free combinations, 213 restricted collocations, and 13 idioms. She found that about 255 out of 1072 of these combinations had several mistakes and that the most frequent
mistake was the wrong choice of verbs. She found that the most important reason in making these mistakes was related to the influence of the learners’ first language.

The result of Nesselhauf's (2003) research was confirmed in Zinkgraf's (2008) study, in which he analysed the inappropriate verb-noun collocations which Spanish EFL university students produced in their writing. Zinkgraf collected the verb-noun miscollocations which the 102 learners created in their writing assignments (essays, reviews and reading comprehension) and analysed these errors to find their source. The results showed that learners had a deficiency in producing acceptable collocations and that the influence of the learners’ mother tongue was the major reason for such errors.

Li (2005) investigated how Taiwanese learners of English used collocations in their writing. Li gathered and read two compositions of each participant. Then, she identified, categorized and analysed their collocational errors. As a result, she found 189 collocational errors (122 errors were grammatical collocational errors and 67 errors were lexical). She showed that the number of grammatical collocational errors which the participants made was far greater than the number of lexical collocational errors. She believed that the most important source of these errors was the ignorance of rule restrictions.

Siik (2006) used two lexical collocation tests before and after a treatment to measure the effect of teaching lexical collocations on the collocational knowledge of 28 Malaysian EFL learners. He also employed pre-and-posttest essay writing to examine the relationship between the participants’ collocational knowledge and the quality of their writing. The experimental group used the Lexical Approach, while the control group focused on individual words. Results showed that collocational knowledge of the learners improved in the experimental group.

Huang (2007) conducted a study on the relationship between the collocational competence of EFL learners and their proficiency. The participants in the experimental group received collocational instruction. Before they received instruction, Huang administered a pretest and compared the results with those of a posttest in reading proficiency which was given to the students in both the experimental and control groups at the end of instruction. The aim of the post-test was to measure the development of the students’ reading proficiency. In the comparison between the students’ pre- and post-tests, Huang found out that the
students who were in the experimental group made greater progress in their reading proficiency than those in the control group.

Hsu and Chiu (2008) verified the extent to which the knowledge and use of lexical collocations in English related to the speaking proficiency of EFL learners. They found that there was a significant correlation between Taiwanese EFL learners' knowledge of lexical collocations and their speaking proficiency. The findings also showed that no significant correlation existed between the learners' use of lexical collocations and their speaking proficiency. In addition, it was concluded that there was no significant correlation between the subjects' knowledge and the use of lexical collocations.

Juknevičienė (2008) compared the ability of Lithuanian learners of English to produce the collocations of high-frequency verbs or de-lexicalized verbs (e.g., have, take, do, give) and native ones. Data for this research were extracted from the essays which were written by the native and non-native learners. The number of collocations of de-lexicalized verbs, which were collected from the native learners' essays, was 386 while that of non-native ones was 263. Lithuanian learners of English used collocations less than the native speakers and created erroneous collocations by resorting to their L1 knowledge in creating English collocations.

From the studies mentioned above, it can be concluded that English language learners, either intermediate or advanced, have problems in producing English collocations. One of the major reasons for this problem, as mentioned above, is their lack of collocational awareness. According to Higuchi (1999), one way to solve the lack of this awareness is by highlighting the role of collocations in EFL classrooms and teaching them from the early stages of instruction. To make more informed decisions as to how to provide learners with instruction, however, one needs to have a clearer picture of the nature of collocational problems and the way they might affect the linguistic performance of language learners. The aim of the present study, therefore, is to find out which of the patterns of lexical collocations pose the greatest level of challenge to Iranian learners' comprehension and production of English collocations. It is an attempt to answer the following research questions:
1. Are there any significance differences in the recognition of various patterns of lexical collocations by Iranian upper-intermediate learners of English?
Are there any significance differences in the production of various patterns of lexical collocations by Iranian upper-intermediate learners of English?

**Method**

**Participants**
The participants in the present study were 34 male and female BA level senior English language translation students at Imam Khomeini International University (IKIU) in Qazvin, Iran. Initially, there were 39 participants. However, data from five of the participants were excluded from analyses either because their proficiency level was different or because they failed to complete their cooperation by being absent for one of the exams.

**Instruments**
The data collection instruments utilized in this study included the following: A TOEFL proficiency test containing 60 items in multiple-choice format was used to determine the participants' level of proficiency. Two post-tests were also used: a multiple-choice test of collocational knowledge, containing 56 items, was administered to measure the recognition of various collocational patterns. A fill-in-the-blank test, consisting of 111 items, was given to the participants after the recognition test in order to gauge their production of the collocational patterns. Both tests were largely adapted from Zarei (2002).

**Procedures and Data Analysis**
Initially, to homogenize the participants, a 60-item multiple-choice proficiency test (TOEFL) was administered. Results showed that, apart from a few students who answered most of the questions correctly, the scores of the other participants were close. Next, the multiple-choice posttest was given to the participants to measure their recognition (Appendix A). Finally, the production test of lexical collocations was administered in fill-in-the-blank format to measure the participants' production of different patterns of lexical collocations (Appendix B). In this test, sentences with a blank were given to the participants to complete. This test took around 80 minutes. Since there were unequal numbers of items on each pattern of collocations, items were weighed differently so that in each pattern the maximum possible score was 30.

To answer the research questions and to analyse the data, two independent one-way ANOVA procedures were utilized, one to investigate the possible differences
in the recognition of different patterns of lexical collocations and the other to investigate the production of the same patterns.

Results and Discussions
The first research question sought to investigate the differences in the recognition of various patterns of lexical collocations. To this end, a one-way ANOVA procedure was used. Descriptive statistics, including the mean, standard deviation, etc. are given in Table 2.

Table 2
Descriptive Statistics on the Learners’ Recognition of Lexical Collocation

<table>
<thead>
<tr>
<th>Pattern</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb + noun 1</td>
<td>34</td>
<td>00</td>
<td>20.00</td>
<td>9.50</td>
<td>5.81</td>
</tr>
<tr>
<td>Verb + noun 2</td>
<td>34</td>
<td>00</td>
<td>25.00</td>
<td>8.33</td>
<td>8.20</td>
</tr>
<tr>
<td>Adj + noun</td>
<td>34</td>
<td>2.78</td>
<td>22.22</td>
<td>13.64</td>
<td>5.40</td>
</tr>
<tr>
<td>Noun + verb</td>
<td>34</td>
<td>00</td>
<td>20.83</td>
<td>8.94</td>
<td>5.72</td>
</tr>
<tr>
<td>Adv + adj</td>
<td>34</td>
<td>00</td>
<td>25.00</td>
<td>7.72</td>
<td>6.89</td>
</tr>
<tr>
<td>Verb + adv</td>
<td>34</td>
<td>00</td>
<td>16.67</td>
<td>8.66</td>
<td>5.83</td>
</tr>
<tr>
<td>Noun + noun</td>
<td>34</td>
<td>00</td>
<td>25.00</td>
<td>13.11</td>
<td>6.89</td>
</tr>
</tbody>
</table>

A glance at Table 2 shows that pattern three (adjective + noun) has the highest mean, followed closely by the last pattern (noun + noun). The mean score on the fifth pattern (adverb + adjective) is noticeably lower than that of the other groups. Still, to see whether or not the observed differences are statistically significant, the one-way ANOVA procedure was utilized, yielding the following results.

Table 3
ANOVA on the Learners’ Recognition of Lexical Collocations

<table>
<thead>
<tr>
<th></th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1158.90</td>
<td>6</td>
<td>163.15</td>
<td>3.91</td>
<td>0.07</td>
</tr>
<tr>
<td>Within groups</td>
<td>9636.82</td>
<td>231</td>
<td>41.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10795.73</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3 indicates that the differences among the means of the seven groups of lexical collocations are not statistically significant. This means that different patterns of lexical collocations have no significant effect on the learners’ recognition. Despite this, as Table 2 shows, the performance of the participants on
'adjective + noun' and 'noun + noun' patterns is noticeably better than that of the other patterns. In other words, these categories of lexical collocations are relatively easier for the learners to recognize than the other patterns. The significance level in Table 3 (0.07) confirms this trend.

The aim of the second question was to investigate the differences among the participants in their production of different patterns of lexical collocations. To this end, another one-way ANOVA was used. Table 4 contains the descriptive statistics.

<table>
<thead>
<tr>
<th>Pattern</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb + noun 1</td>
<td>34</td>
<td>3.03</td>
<td>21.21</td>
<td>12.03</td>
<td>5.19</td>
</tr>
<tr>
<td>Verb + noun 2</td>
<td>34</td>
<td>0.00</td>
<td>22.22</td>
<td>11.00</td>
<td>5.50</td>
</tr>
<tr>
<td>Adj + noun</td>
<td>34</td>
<td>1.59</td>
<td>20.63</td>
<td>9.94</td>
<td>4.42</td>
</tr>
<tr>
<td>Noun + verb</td>
<td>34</td>
<td>3.00</td>
<td>20.83</td>
<td>11.00</td>
<td>5.79</td>
</tr>
<tr>
<td>Noun + noun</td>
<td>34</td>
<td>2.56</td>
<td>19.66</td>
<td>11.33</td>
<td>4.22</td>
</tr>
<tr>
<td>Adv + adj</td>
<td>34</td>
<td>0.00</td>
<td>22.22</td>
<td>11.27</td>
<td>5.88</td>
</tr>
</tbody>
</table>

It can be seen that the last category of lexical collocations (verb + adverb) causes fewer problems for Iranian upper-intermediate learners of English. It can also be seen that the mean score of the participants on the fourth pattern (noun + verb) is conspicuously lower than that of the rest. Another one-way ANOVA was utilized to see the extent to which the observed differences among the means are statistically significant. The results of the analysis are presented in Table 5.

<table>
<thead>
<tr>
<th>Sum of squares</th>
<th>DF</th>
<th>Mean</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>1485.13</td>
<td>6</td>
<td>247.52</td>
<td>8.90</td>
</tr>
<tr>
<td>Within groups</td>
<td>6421.15</td>
<td>231</td>
<td>27.79</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7906.29</td>
<td>237</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
As can be seen in Table 5, the observed F value and the significance level are indicative of significant differences among the groups. The post-hoc comparisons of means helped locate the differences as shown in the following table.

<table>
<thead>
<tr>
<th>Number of Comparisons</th>
<th>Group (I)</th>
<th>Group (J)</th>
<th>Mean Difference (I-J)</th>
<th>Std. Error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Verb+noun1</td>
<td>Verb+noun2</td>
<td>1.48</td>
<td>1.28</td>
<td>.970</td>
</tr>
<tr>
<td>2</td>
<td>Verb+noun2</td>
<td>Adj+noun</td>
<td>.36</td>
<td>1.27</td>
<td>1.000</td>
</tr>
<tr>
<td>3</td>
<td>Adj+noun</td>
<td>Noun+verb</td>
<td>4.67</td>
<td>1.26</td>
<td>.039*</td>
</tr>
<tr>
<td>4</td>
<td>Noun+verb</td>
<td>Noun+noun</td>
<td>-5.82</td>
<td>1.27</td>
<td>.003*</td>
</tr>
<tr>
<td>5</td>
<td>Noun+noun</td>
<td>Adv+adj</td>
<td>.05</td>
<td>1.28</td>
<td>1.000</td>
</tr>
<tr>
<td>6</td>
<td>Adv+adj</td>
<td>Verb+adv</td>
<td>-3.11</td>
<td>1.27</td>
<td>.435</td>
</tr>
<tr>
<td>7</td>
<td>Verb+adv</td>
<td>Verb+noun2</td>
<td>3.84</td>
<td>1.27</td>
<td>.178</td>
</tr>
<tr>
<td>8</td>
<td>Verb+noun1</td>
<td>Adj+noun</td>
<td>1.84</td>
<td>1.26</td>
<td>.909</td>
</tr>
<tr>
<td>9</td>
<td>Verb+noun2</td>
<td>Noun+verb</td>
<td>5.03</td>
<td>1.28</td>
<td>.021*</td>
</tr>
<tr>
<td>10</td>
<td>Adj+noun</td>
<td>Noun+noun</td>
<td>-1.14</td>
<td>1.26</td>
<td>.991</td>
</tr>
<tr>
<td>11</td>
<td>Noun+verb</td>
<td>Adv+adj</td>
<td>-5.76</td>
<td>1.28</td>
<td>.004*</td>
</tr>
<tr>
<td>12</td>
<td>Noun+noun</td>
<td>Verb+adv</td>
<td>-3.05</td>
<td>1.26</td>
<td>.450</td>
</tr>
<tr>
<td>13</td>
<td>Adv+adj</td>
<td>Verb+noun2</td>
<td>.72</td>
<td>1.26</td>
<td>.999</td>
</tr>
<tr>
<td>14</td>
<td>Verb+adv</td>
<td>Adj+noun</td>
<td>4.20</td>
<td>1.26</td>
<td>.090</td>
</tr>
<tr>
<td>15</td>
<td>Verb+noun1</td>
<td>Noun+verb</td>
<td>6.51</td>
<td>1.27</td>
<td>.000*</td>
</tr>
<tr>
<td>16</td>
<td>Verb+noun2</td>
<td>Noun+noun</td>
<td>-.78</td>
<td>1.28</td>
<td>.999</td>
</tr>
<tr>
<td>17</td>
<td>Adj+noun</td>
<td>Adv+adj</td>
<td>-1.09</td>
<td>1.27</td>
<td>.994</td>
</tr>
<tr>
<td>18</td>
<td>Noun+verb</td>
<td>Verb+adv</td>
<td>-8.87</td>
<td>1.26</td>
<td>.000*</td>
</tr>
<tr>
<td>19</td>
<td>Noun+noun</td>
<td>Verb+noun1</td>
<td>-.69</td>
<td>1.27</td>
<td>1.000</td>
</tr>
<tr>
<td>20</td>
<td>Adv+adj</td>
<td>Verb+noun1</td>
<td>-.75</td>
<td>1.28</td>
<td>.999</td>
</tr>
<tr>
<td>21</td>
<td>Verb+adv</td>
<td>Verb+noun1</td>
<td>2.35</td>
<td>1.26</td>
<td>.750</td>
</tr>
</tbody>
</table>

*the mean difference is significant at the 0.05 level

The figures in Table 6 indicate that although the participants' performance on patterns 1, 2, 3, 5, 6 and 7 is not significantly different, they have performed significantly worse on pattern number 4 (noun + verb). In other words, the 'noun +
verb' pattern is the most problematic pattern of lexical collocations for Iranian learners' production.

In short, the above results indicate that Iranian upper-intermediate learners of English have fewer problems with the recognition of lexical collocations like 'noun + noun' and 'adjective + noun' while they experience greater difficulties in the production of the 'noun + verb' pattern. This probably implies that those patterns of lexical collocations that pose greater levels of challenge to Iranian learners, including those mentioned above, demand increased levels of attention. In other words, both syllabus designers and teachers can make use of the findings of the present study to prepare and present materials that can raise the learners' awareness of the collocational properties of lexical items.

The results of the present study are in accordance with a number of previous studies (e.g. Bahns & Eldaw, 1993; Howarth, 1998; Higuchi, 1999; Nesselhauf, 2003; Li, 2005; Huang, 2007; Hsu & Chiu, 2008) which support the present findings in that they all emphasize the learners' problems with the production of lexical collocations. But the patterns which cause problems for learners in this study slightly differ from those of other studies. For instance, in Zarei's (2002) study, the 'noun + noun' pattern was the most difficult pattern for advanced Iranian learners, whereas this study suggests that the 'noun + verb' pattern is the most problematic. One of the possible reasons for such differences may be partially attributable to the different linguistic background of the participants in this study in comparison with other studies. Another possible reason could be the differences in the proficiency level of the participants in this study. It is possible that higher proficiency-level learners, due to longer exposure to certain patterns, develop greater familiarity with those patterns compared to other patterns which are less frequent. This, of course, requires that we first understand the frequency with which each of the patterns studied here occur in English. In other words, the performance of the participants in the present study on the different patterns of lexical collocations could be partially related to the frequency with which each pattern occurs in authentic texts. If, for instance, corpus analyses were done, or if their results were available, better and more informed judgements could be made as to how frequency of exposure to certain patterns could affect learners' performance on receptive and productive tests. Nevertheless, these areas of conflict are probably indicative of the need for further research.
Learnability of Various Patterns of Lexical Collocations by Iranian...

Received 13 June 2010
Revised version accepted 8 September 2010

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Learnability of Various Patterns of Lexical Collocations by Iranian…


Appendix A
Recognition Test of Lexical Collocations

A. Choose the adjective that can best collocate with the given nouns.

1. a/n _____ joke
   a. morbid  b. sick  c. diseased  d. unwholesome

2. a/n _____ colour
   a. sickly  b. ill  c. morbid  d. diseased

3. a/n _____ curiosity
   a. ill  b. sick  c. sickly  d. morbid

4. a/n _____ food
   a. unwholesome  b. diseased  c. morbid  d. sickly

5. a _____ expenditure
   a. lavish  b. generous  c. profuse  d. lush
a. generous    b. profuse    c. lush    d. lavish
7. ____ apologies
   a. profuse    b. generous    c. lavish    d. lush
8. ____ green grass
   a. lush    b. profuse    c. lavish    d. generous

B. Choose the verb(s) which do NOT normally collocate with the bold noun.

9. He _____ an argument with the barman and was thrown out of the hotel.
   a. got into    b. had    c. made    d. both a & c
10. He had to do two jobs to _____ his debts.
     a. pay up    b. pay of    c. clear    d. both a & b
11. Someone _____ the suggestion that we should have an auction.
     a. came up with    b. presented    c. put forward    d. both b & c
12. The scientists failed to _____ any firm conclusions from the study.
     a. arrive at    b. decide    c. draw    d. both a & b
13. The company _____ a deal with the union after lengthy negotiations.
     a. agreed    b. struck    c. came to    d. both b & c
14. A meeting has been _____ for next week.
     a. programmed    b. arranged    c. scheduled    d. both a & c
15. The supervisor refused to _____ the blame for the accident.
     a. accept    b. receive    c. shoulder    d. both b & c
16. He _____ his fingers nervously on the desk as he spoke.
     a. tapped    b. drummed    c. rattled    d. both b & c
17. We _____ on a trip to a nearby island on a fishing boat.
     a. did    b. took    c. went    d. both a & b
18. I put up my hand to _____ my eyes from the sun.
     a. shade    b. shield    c. shelter    d. both a & c

C. Choose the appropriate adverbs that can best collocate with the given adjectives.

19. I’m not _____ concerned by the latest figures.
    a. excessively    b. unduly    c. extremely    d. greatly
20. She is _____ proud of her achievements.
    a. justly    b. exactly    c. precisely    d. accurately
21. He seems _____ unaware of the trouble he’s caused.
Learnability of Various Patterns of Lexical Collocations by Iranian...

a. completely  b. totally  c. obviously  d. blissfully
22. The world of fashion is _____ fickle.
   a. obviously  b. notoriously  c. openly  d. overtly
23. The street was _____ silent after the explosion.
   a. mysteriously  b. strangely  c. eerily  d. frighteningly
24. She seemed _____ composed, despite the pressure.
   a. outwardly  b. apparently  c. evidently  d. seemingly
25. Her voice sounded _____ familiar to me.
   a. strangely  b. oddly  c. unusually  d. surprisingly
26. The former chairman was _____ absent from the guest list.
   a. obviously  b. clearly  c. frankly  d. conspicuously

D. In each sentences, choose the adverb that is NOT a common collocate of the verb.

27. She argued _____ about her right to compensation.
   a. hotly  b. heatedly  c. fiercely
28. They will _____ defend their rights.
   a. heatedly  b. fiercely  c. hotly
29. He grinned _____ at her.
   a. wolfishly  b. owlishly  c. sheepishly
30. I _____ confessed to having forgotten the map.
   a. sheepishly  b. ruefully  c. woefully
31. His frugal lifestyle contrasted _____ with her wife extravagance.
   a. markedly  b. starkly  c. brutally
32. Her tragic story _____ illustrates how vulnerable children can be.
   a. starkly  b. brutally  c. markedly

E. Choose the BEST alternative.

33. The taxi _____ to a halt at the _____ crossing.
   a. brought/ pedestrian  b. screeched/ zebra
   c. screamed/ zebra  d. brought/ foot
34. I _____ petrol and had to _____ a lift to the nearest garage.
   a. finished the/ hitch  b. used up the/ hitch-hike
   c. ran out of/ thumb  d. finished the/ hitch-hike
35. There's always ____ traffic on the motorway, so I usually take the ____ roads.
   a. busy/minor                          b. strong/back
   c. heavy/small                        d. busy/small

36. I realized it was a ____ street, so I had to ____ a U-turn.
   a. one-direction/ do                  b. single-way/carry out
   c. single-way/make                    d. one-way/ do

37. The demonstration ____ traffic to a standstill, and some drivers began to ____ their horns in frustration.
   a. brought/toot                      b. reduced/hit
   c. slowed/toot                       d. reduced/sound

38. A car suddenly ____ in front of me and I had to ____ the breaks.
   a. pulled out/tread on               b. started out/hit
   c. turned out/slam                   d. started out/slam

39. She was ____ from driving for a year after failing on ____ test.
   a. banned/a breath                  b. disallowed/a breathalyzer
   c. disqualified/alcohol            d. banned/alcohol

40. The stolen car hit ____ vehicle and ____ flames.
   a. an approaching/burst into        b. an oncoming/burst into
   c. a contraflow/caught             d. an approaching/blew up

41. He got ____ marks in the listening tests.
   a. full                        b. maximum               c. top                  d. both a & c

42. We have to ____ a vocabulary test every Friday.
   a. do                          b. make                      c. write               d. both a & b

43. She's busy ____ for her exam.
   a. reviewing              b. revising                  c. studying           d. both b & c

44. How many students have ____ the course?
   a. enrolled                  b. signed up for       c. undertaken       d. both a & b

45. She was always ____ lessons; no wonder she ____ the exam.
   a. losing/crashed                        b. missing out/failed
   c. skipping/flunked                   d. losing/flunked

46. He suffers badly from exam ____ , which affects his concentration ____.
   a. nerves/span                          b. stress/time
   c. nerves/length                      d. worries/span

47. The teacher ____ a difficult exam but ____ it leniently.
   a. made up/checked                   b. set/corrected
   c. set/ marked                       d. wrote/corrected
48. We were supposed to _____ the essay by Friday but I _____ in late.
   a. do/ delivered it  
   b. do/ gave it  
   c. compose/ handed it  
   d. wrote/ delivered it

49. Several villages have been _____ by the _____ floods in the decades.
   a. inundated/ deepest  
   b. soaked/ severest  
   c. soaked/ deepest  
   d. inundated/ severest

50. The city was _____ by _____ earthquake shortly after midnight.
   a. affected/ an enormous  
   b. affected/ a massive  
   c. struck/ a massive  
   d. struck/ an enormous

51. The forest fires, _____ by warm winds, _____ out of control for weeks.
   a. fanned/ ragged  
   b. blown/ ragged  
   c. blown/ flared  
   d. fanned/ flared

52. The volcano, which has been _____ for 50 years, began _____ late last night.
   a. dormant/ erupting  
   b. dormant/ exploding  
   c. inactive/ erupting  
   d. inactive/ exploding

F. In each question, which of the following items is NOT possible.

53.   a. a strong exam  
   b. a strong woman  
   c. a strong cheese  
   d. a strong cigarette

54.   a. a heavy smoker  
   b. heavy rain  
   c. heavy metal  
   d. a heavy problem

55.   a. fair hair  
   b. a fair decision  
   c. a fair beer  
   d. a fair result

56.   a. a rich company  
   b. a rich desert  
   c. a rich car  
   d. a rich text file
Appendix B
Production Test of Lexical Collocations

A. Fill in the blanks with suitable verbs.
1. He … her and did not let her finish her speech.
2. The strike … the production.
3. The thieves … the house looking for valuables.
4. Please don’t … through my papers, you will put them out of order.
5. She was … of all her jewelry while she slept.
6. The troops are … ing and looting wherever they go.
7. Our house was … while we were on holiday.
8. He took an … that he would never help her again.
9. It surprised me to … of her decision.
10. During the election about 28 million people … their ballots.
11. You … a film on TV, but you … it in the cinema.

B. Supply proper adjectives. Follow the model.
EX: as light as a feather.

```
as … as a bat  as … as a bee
as … as a bell  as … as a daisy
as … as an eel  as … as a mule
as … as an owl  as … as brass
as … as a priest as … as a lamb
as … as a wolf  as … as a scarecrow
```

C. Use adjectives that can go with the given nouns and can be translated as ‘

```
Some … butter   some … cream
Some … eggs    some … milk
... bacon     ... brains
what a … weather  I have a … tooth.
A … cabbage
```

D. Fill in the blanks with appropriate measure words. Example: a box of matches
```
1. a … of soap  2. a … of sardines
3. a … of paper 4. a … of lamb
5. a … of beef  6. a … of bread
```
E. Fill in the blanks with suitable words having the general meaning of ‘group’.

a ... of fish  a ... of sheep
a ... of cows  a ... of whales
a ... of lions  a ... of beautiful girls
a ... of bananas  a ... of flowers
a ... of keys  a ... of thugs
a ... of newspapers  a ... of sticks
a ... of grapes  a ... of nerves
a ... of chairs  a ... of dishes
a ... of hills

F. Supply words that have the general meaning of ‘head’ or ‘boss’

the ... of the bank  the ... of the department
the ... of the college  the ... of the university
the ... of the high school  the ... of the faculty
the ... of the police  the ... of staff
the ... of the hotel  the England football ...

G. Fill in the blanks with words which have the general meaning of ‘mass’ or ‘piece’

For example: a slice of toast
a ... of dough  a ... of wood
a ... of cake  a ... of glass
a ... of china  a ... of melon

H. Do you know what sounds these animals make?

dogs ... owls ... lions ... 
mice ... lambs ... donkeys...
crickets... camels ... bears ... 
apes ... bulls ... jackals ... 
pigeons ... ravens ... snakes ... 
turkeys...

I. Fill in the blanks with suitable verbs which can convey the meanings specified.
I (ﭘﻮﺳﯿﺪن) II (درﺧﺸﯿﺪن- ﺑﺮق زدن) 
Teeth … Stars …
Leaves … A candle flame … in the breeze.
Societies … A white-hot coal on a fire … .
Potatoes … A gold object … .
A diamond necklace … .

J. For each group, find an adverb which collocates with all the adjective in the group.

1. ____ aware, honest, shy, slow
2. ____ boring, funny, good, right
3. ____ different, odd, uncomfortable, uneasy
4. ____ competitive, independent, loyal, protective
5. ____ inaccurate, inadequate, offensive, unfair
6. ____ enthusiastic, inaccurate, optimistic, popular

K. Fill in the blanks with appropriate adverbs.

1. The vase fell over Sarah's head and, unfortunately, she was hurt ____.
2. He committed so many crimes. I want him to pay ____ for everything he's done!
3. Somebody should wake that man up. He's really snoring ____.
4. I'm sorry. I ____ forgot your birthday. Please forgive me.
5. You are ____ stubborn! Why can't you ever agree with what I say?
6. There's so much fog outside. I can ____ see the car in front of me!
7. Drive ____. It's raining and we don't want to have an accident.
8. Why are you giving me your broken computer? I don't want it; it's ____ useless.
9. The research findings ____ suggest that learners learn more effectively when given positive feedback.