Developing Web-based Lessons on Collocations for Khon Kaen University Students

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งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาผลสัมฤทธิ์การเรียนรู้เรื่องการปรากฏร่วมของคำของนักศึกษา มหาวิทยาลัยขอนแก่น โดยการเรียนรู้ผ่านสื่อบทเรียนผ่านเว็บ และศึกษาทัศนคติของนักศึกษาที่มีต่อการเรียนผ่านเว็บ กลุ่มตัวอย่างที่ใช้ในการวิจัยครั้งนี้คือ นักศึกษาสาขาวิชาภาษาอังกฤษ ชั้นปีที่ 2 คณะมนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัยขอนแก่น จำนวน 33 คน ที่ลงทะเบียนเรียนในรายวิชา 411 242 การเขียนภาษาอังกฤษ 2 ในภาคการศึกษาที่ 2 ปีการศึกษา 2555 เครื่องมือที่ใช้ในการวิจัยได้แก่ 1) แบบทดสอบก่อนเรียนและหลังเรียน 2) บทเรียนผ่านเว็บ เรื่องการปรากฏร่วมของคำ 3) แบบสอบถาม และ 4) แบบสัมภาษณ์ ผู้วิจัยใช้โปรแกรม SPSS ในการวิเคราะห์ข้อมูลทางสถิติเพื่อหาค่าร้อยละ (percentage) ค่าเฉลี่ย (mean) ส่วนเบี่ยงเบนมาตรฐาน (S.D.) และการทดสอบค่า t (t-Test) นอกจากนี้ ผู้วิจัยได้ใช้สูตร Kuder–Richardson (KR–20) เพื่อหาค่าความเชื่อมั่นของแบบทดสอบก่อนเรียน

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This study aims to study the achievement of KKU students’ knowledge of collocations by learning through web-based lessons and to investigate students’ attitudes towards web-based lessons on collocations. The participants of the study were 33 second year English major students who enrolled in 411 242 English Writing II in the second semester of academic year 2012 at the faculty of Humanities and Social Sciences in Khon Kaen University. The research instruments were comprised of 1) the pretest and the posttest, 2) web-based lessons on collocations, 3) the questionnaire, and 4) the interview. SPSS program was employed to analyze the statistics including the percentage, mean (\( \bar{X} \)), standard deviation (S.D.), and t-Test. In addition, Kuder–Richardson (KR–20) formula was used to find the reliability of the pretest and the posttest (collocation test at a
Content analysis was also employed to analyze the interview. The findings of the study showed that the mean score of the collocation test at a sentence level in the posttest was significantly higher than that of the pretest at \( p < 0.05 \) level. Moreover, the collocation used in students’ writing in the posttest was higher than in the pretest. The mean score of participants’ exercises of collocations was considered at a high level, and the effectiveness index (E.I.) was 0.68. In addition, from the analysis of the questionnaire and the interview, the study found that students had positive attitudes towards web-based lessons on collocations. They revealed that web-based lessons were useful, fun, and interesting for enhancing their knowledge and language proficiency. Students also recommended that web-based lessons were suitable to be integrated as a part of other courses.

**Keywords**: Collocations, Web-based lessons, Moodle

**1. Introduction**

The use of English is inevitably required due to the era of globalization (Graddol, 2006). In Thailand, English is considered as English as a Foreign Language (EFL) taught in schools due to the requirement of using English as a communication in workplaces and the future career advancement (Khamkhien, 2010; Wiriyachitra, 2002). However, Thai students have insufficient English proficiency comparing to other developing countries (Wiriyachitra, 2002). Several previous studies found that the major problem in language learning of Thai students was vocabulary (Chasin, 2007; Duadsuntia, 2008). Moreover, most teachers found that Thai students often make the errors of word combinations or collocations (Phoocharoensil, 2011). The errors of word combinations made by students can show their weakness and mistake in speech and writing with regard to “foreign flavor” (Darvishi, 2011). In addition, Thep-Ackrapong’s (2005)
revealed that Thai students have problems with vocabulary in written English because of the ignorance of some collocation restrictions. From the preliminary survey of this study, it was found that 68.3% of English major students in KKU considered vocabulary and phrases as the beneficial topics to learn. This agreed with Nation’s (2005) research, which indicated that vocabulary program is an important part to develop learners’ vocabulary knowledge. Furthermore, the survey revealed that 75% of them accepted that the lack of collocational knowledge is their problems and barriers in writing English. Thus, according to the students’ problems, learning collocations is essential for them in order to increase their vocabulary and enhance their English language writing proficiency.

McCarthy and O’Dell (2005) defined collocation as “a natural combination of words; it refers to the way English words are closely associated with each other” (p. 4). In other words, collocation can be included in word combinations that occur from what people communicate in real life situations; therefore, it is beneficial for learning collocations in order to make a meaningful context and communication. According to the BBI combinatory dictionary of English, collocations are categorized into two types, which are grammatical collocations and lexical collocations (Benson, Benson, & Ilson, 1986). Moreover, Wu and Chang (2004) stated that “collocations are pervasive in all types of writing and can be found in phrases, chunks, proper names, idioms, and terminology” (p. 4). In writing classroom, both types of collocations should be taught (Bazzaz & Samad, 2011; Fan, 2009). Therefore, this study will focus on both grammatical and lexical collocations as they can benefit to the written text.

In terms of writing, collocations can help learners to produce the natural sound like native people, to write properly, and also to be able to distinguish which one is written by the low-proficient writer or the proficient writer (McCarthy &
O’Dell, 2008). Furthermore, Zhang (1993 cited in Hsu, 2007)’s study revealed that the quality of university students’ writing depends on the quality of their collocational knowledge. Additionally, Hsu (2007) suggested that students should use a wide range of collocations because it can facilitate students in writing. Therefore, it is necessary for students to learn collocations in order to create the meaningful writing and communication.

In language learning, one of the important approaches is autonomous learning (Warner & Jones, 2011). Autonomous learning is based on constructivism theory (Wang, 2010). Learners should be more exposed to things beyond the classroom and have chances to develop their ability to be responsible for what they have learnt by themselves (Ahmad, Yaakub, Rohani, & Rahim, 2004). One of the methods that can help to promote language learning and to enhance students to be an autonomous learner is the use of technology (Wang, 2010). Some previous studies found that technology is useful for language learning (Hong, Ridzuan, & Kuek, 2003; Lombardi, 2007; Warschauer, 1996). Thus, the use of technology should be adapted to language classroom in order to motivate learners to have the intention in language learning at their own pace.

It appears much research attempting to develop English language teaching and learning by using technology (Conroy, 2010; Yang & Chen, 2007). As a result, technology has increased the important role in education especially in language learning (Warschauer, 1996). Moreover, a number of previous studies revealed the positive impacts for using technology for language teaching (Conroy, 2010; Yang & Chen, 2007). Considering the specific tool of technology that can support the language learning, in this study, web-based learning will be used for teaching collocations. It is reported that web-based learning has the main advantage that students’ attendance, engagement, and motivation will be increased (Mohammadi, Ghorbani, & Hamidi, 2011).
Focusing on the specific software mainly used in this study, Modular Object-Oriented Dynamic Learning Environment (Moodle) is chosen for conducting this research. In regards to the most popular and useful software for web-based learning, Moodle is suggested for teachers (Rice & Nash, 2010; Robertson, 2008). Moodle is Free and Open Source Software (FOSS) and Course Management System (CMS) which can construct the courses in pattern of a web-based platform (Rice & Nash, 2010). According to Thai Ministry of Education (MOE), it indicated that learners, educational institutions, educational offices should gain the benefit from ICT equally in order to make lifelong learning as it has been developing and expanding this issue to all Thai education (Laohajaratsang, 2009). Additionally, from the preliminary survey, it was found that 76.67% consider e-learning as a beneficial learning. Consequently, it is a good opportunity to extend and develop Moodle for Thai learners in university level.

The argumentative writing was employed in this study because it is considered as an important writing type which the writers could use their reasons and evidence to support their opinions for convincing their readers that opinions are correct (Oshima & Hogue, 2006). The argumentative writing is also accepted to be the significant challenge to the college writing classrooms around the world due to the reflection of current curricular reforms in universities (Newell, Beach, Smith, & VanDerHeide, 2011). Moreover, as students learn collocations in this study, they would have a chance to show their ability in using collocations to provide their critical thinking, judgment, and vocabulary use (Clay, 2001) through their argumentative writing.

Although collocations are beneficial to learn, there are a small number of studies investigating collocations (Nesselhauf, 2003). Previous studies found that collocations are necessary for language learning especially for writing skill.
(Darvishi, 2011; McCarthy & O’Dell, 2005; Robertson, 2008). However, there is not much research studying collocations (Xiao & McEnery, 2006). Besides, Thai research studies on collocations have been found less (Phoocharoensil, 2011). In addition, there are a very small number of studies investigating collocations and technology together (Amer, 2010; Wu, Franken, & Witten, 2010). Thus, this research employs the benefits of using technology in learning collocations by using web-based learning according to the purposes of the study: (1) to study the achievement of KKU English major students’ knowledge of collocations by learning through web-based lessons; (2) to determine the effectiveness (E1/E2) and the effectiveness index (E.I.) of web-based lessons on collocations; and (3) to investigate the students’ attitudes towards using web-based lessons on collocations. Additionally, these purposes were formed to be the research questions of the study as follows:

1. To what extent can web-based lessons help students to improve their knowledge of collocations?
2. What are the effectiveness (E1/E2) and the effectiveness index (E.I.) of web-based lessons on collocations?
3. What are students’ attitudes towards using web-based lessons on collocations?

In conclusion, as the preliminary survey revealed the problems of KKU English major students in learning vocabulary related to problems in using collocations in the traditional classroom, and students’ perceptions about the usefulness in using e-learning; thus, this study aims to develop web-based lessons which are constructed by Moodle (e-learning) on collocations for KKU students in order to create motivation in learning language. This study also investigates students’ attitudes towards using web-based lessons to examine how they effect and enable students to learn collocations. It may imply some pedagogy for
teachers and also help students learn collocations effectively in order to practically use them for their writing.

2. Research Methodology

Participants

The participants of the study were chosen by a purposive sampling technique. They were 33 English major students (from regular and special programs) who enrolled in 411 242 English Writing II in the second semester of the academic year 2012 at the faculty of Humanities and Social Sciences in Khon Kaen University.

Research design

This study employed the experimental research. One group pretest-posttest design was conducted. Participants were provided with the pretests before learning through web-based lessons. Then they did the posttests to measure their achievement. Research procedure was conducted for eight weeks. In respect to this design, it aimed to examine what participants had gained or known more after using web-based lessons on collocations.

The criteria of choosing types of collocations were based Phoocharoensil’s (2011) study which revealed that Thai students had problems with six mostly frequent types of collocations. As a result, this study examined these six types of collocations based on Phoocharoensil (2011), which are considered as problematic collocations for Thai students as shown in Table 1.
Table 1: Types of Collocations Used in This Study

<table>
<thead>
<tr>
<th>Collocations</th>
<th>Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lexical collocations</td>
<td>1. Verb and Noun</td>
</tr>
<tr>
<td></td>
<td>2. Adjective and Noun</td>
</tr>
<tr>
<td></td>
<td>3. Noun and Verb</td>
</tr>
<tr>
<td>Grammatical collocations</td>
<td>4. Adjective and Preposition</td>
</tr>
<tr>
<td></td>
<td>5. Preposition and Noun</td>
</tr>
<tr>
<td></td>
<td>6. Verb and Preposition</td>
</tr>
</tbody>
</table>

Regarding the selections of collocations, 50 texts of argumentative writing were selected from the internet-based source (www.ToeflEssays.com). Then the list of grammatical and lexical collocations gained from TOEFL argumentative writing was checked by three English native speakers for the validity. After that, the researcher created web-based lessons to teach six types of collocations by using Moodle. Various exercises based on six types of collocations created by Hot Potatoes were also used for being the supplement to web-based lessons. The pretests and posttests (the collocation test at a sentence level and the collocation test in context) were constructed based on six types as well. In addition, the questionnaire and the interview were developed and provided to participants after learning via web-based lessons. Nevertheless, all instruments were checked by the experts and then taken to try out with three non-participants before the real testing to ensure the validity and reliability of the study.

Research Instruments

The research instruments employed in this study are:

1. The pretests and the posttests

There were two paper-based tests which were equivalent in the level of difficulty. To clarify, the two tests which were the collocation test at a sentence
level and the collocation test in context were employed for each pretest and posttest. The collocation test at a sentence level aimed to examine the collocation knowledge. The researcher developed 30–multiple–choice test with four alternatives for being the collocation test at a sentence level. Moreover, the collocation test in context (argumentative writing) aimed to examine students’ collocation knowledge before and after the treatment. The collocation test in context was used to measure students’ ability in using language on a provided topic about the argument which allows students to show their ability in analyzing the issue, the critical thinking, writing styles, and vocabulary (Clay, 2001).

2. Web–based lessons on collocations

They were constructed by the researcher with colorful pictures and well–patterned design to teach six types of collocations which are (1) verb and noun, (2) adjective and noun, (3) noun and verb, (4) adjective and preposition, (5) preposition and noun, and (6) verb and preposition by using Moodle. Furthermore, various exercises based on six types of collocations created by Hot Potatoes were also used for being the supplement to web–based lessons. These web–based lessons were constructed within a host page of KKU Moodle shown as one of English subjects of the language field in the Faculty of Humanities and Social Sciences (411 242 English writing II). The diagram of learning collocations on web–based lessons is shown below.
Figure 1: The Diagram of Web-based Lessons on Collocations
3. Questionnaire

The questionnaire was used to investigate the attitudes of participants towards using web-based lessons on collocations. The students themselves were required to answer the questions and fill in a form of information according to instructions. The questionnaire consisted of two parts which are the respondents’ general information and their attitudes towards using web-based lessons on collocations. The second part contained 15 statements designed purposely to discover students’ attitudes. Some of these statements were adapted from Basal, Gural, and Sevindik (2012). In addition, the end of questionnaire included an open-ended question to encourage suggestions.

4. Interview

The interview was used to find out participants’ attitudes towards learning collocations via web-based lessons which were apart from the answers gained from the questionnaire. In addition, the study employed the semi-structured interview as it has an advantage that lies in the correctness of information which is compared and also the in-depth information gained from the interviewees. Some participants who were classified as the low, medium, and high proficiency in their collocation knowledge (selecting from the results of participants’ scores in the collocation test at a sentence level) were selected to be interviewed in order to gain students’ opinions in depth after they finished learning collocations towards using web-based lessons.

All research instruments were checked by the experts, tried out with non-participants, and then improved before using in the data collection.

Data Collection

This study was conducted during the second semester of the academic year 2012 at the computer lab at the faculty of Humanities and Social Sciences in Khon Kaen University. This study was processed by the integration of teaching
collocations towards using web–based lessons. In order to explain the procedure clearly, it is segmented into 8 weeks as follows:

Week 1  Prior to the treatment, participants were provided with the orientation part that guided them how to use web–based lessons constructed by Moodle. Participants were introduced to the objectives of the study and the instructions via Moodle in order that they would understand clearly what they should know about learning collocations towards using Moodle. Then the pretests which were the collocation test at a sentence level and the collocation test in context were provided to participants before studying with Moodle.

Week 2–7 Participants learned web–based lessons: lesson 1–6 (1 lesson/week)

Week 8  When participants finished learning all web–based lessons, they took the posttests which were the collocation test at a sentence level and the collocation test in context in order to examine students’ collocation knowledge towards using Moodle. Then the questionnaire was distributed to all participants. Finally, some participants who were classified as the low, medium, and high proficiency in their collocation knowledge (selecting from the results of participants’ scores in the collocation test at a sentence level in the posttest) were selected to be interviewed in order to gain students’ opinions in depth after they finished learning collocations towards using web–based lessons.

3. Results

The results of the study were examined and reported statistically and descriptively based on each instrument of the study.

1. Pretests and Posttests (collocation test and writing test)

In order to ensure the reliability coefficient of the collocation test at a sentence level (pretest and posttest), Kuder–Richardson (KR–20) formula was
used in the study after the try-out. The results of KR–20 was found to be 0.89/0.85 for the pretest and the posttest, respectively, which revealed that the collocation test was reliable (more than 0.7) and acceptable. Moreover, the collocation test in context was approved by the experts. Therefore, they were taken to use in the treatment.

As the collocation test at a sentence level and the collocation test in context were used for being the pretest and the posttest, the results of each test were reported respectively. The collocation test at a sentence level was reported statistically by using SPSS to find out the p-value (t-Test) comparing the mean score between the pretest and the posttest. In the collocation test in context, the frequency of the collocation use between the pretest and the posttest were reported. In addition, the analysis of the collocation test in context was reported descriptively in terms of the correctness and incorrectness of collocation use in each type.

1) The collocation test at a sentence level

Table 2: The Comparison between the Mean Score of the Collocation Test at a Sentence Level (Pretest and Posttest)

<table>
<thead>
<tr>
<th>Tests</th>
<th>Students</th>
<th>Mean score (x)</th>
<th>S.D.</th>
<th>t-Test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>33</td>
<td>16.42</td>
<td>3.33</td>
<td>-12.023</td>
<td>**0.000</td>
</tr>
<tr>
<td>Posttest</td>
<td>33</td>
<td>25.67</td>
<td>3.36</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**p < 0.05

Table 2 showed that the mean score (x) of the pretest (the collocation test at sentence level) was 16.42, and the standard deviation was 3.33. After learning through web-based lessons, the mean score of the posttest was 25.67, and the standard deviation was 3.36. The results revealed that the posttest scores
were higher than the pretest scores, and this indicated that the participants did the posttest better than the pretest. The t–test was −12.023 and p–value was 0.000. To sum up, there were significant differences at the 0.05 level in the subjects’ performance in learning collocations through web–based lessons.

2) The collocation test in context

For the collocation test in context, 1) the participants’ frequency of collocation use in the pretest and the posttest and 2) the analysis of the correct and incorrect collocation use were analysed. The analysis of the correct collocation use was shown in Table 3 below.

Table 3: The Total of Frequency of the Correct Collocation Use in the Collocation Test in Context (Pretest and Posttest)

<table>
<thead>
<tr>
<th>Writing tests</th>
<th>Total of frequency of the correct collocation use</th>
<th>1. Pretest</th>
<th>2. Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total of frequency of the correct collocation use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Pretest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>153</td>
<td>102</td>
<td>11</td>
</tr>
<tr>
<td>Mean</td>
<td>4.67</td>
<td>3.40</td>
<td>1.22</td>
</tr>
<tr>
<td>2. Posttest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>142</td>
<td>14</td>
</tr>
<tr>
<td>Mean</td>
<td>5.63</td>
<td>4.44</td>
<td>1.17</td>
</tr>
<tr>
<td>Different value (Posttest–Pretest)</td>
<td>27</td>
<td>40</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 3 indicated that if considering the different value of the correct collocation use in each type, the use of collocation type 2 was increased mostly (different value = 40), and type 3 was used least (different value = 3). For the collocation type 2, students might have better understanding after the treatment as
it is the least difficult type, so students used them mostly. This is relevant to a previous study by Abadi (2003) which claimed that adjective + noun collocation was the least difficult subcategory for lexical collocations. Also, Abadi indicated that grammatical collocations are more difficult to acquire than lexical collocations. The findings showed that the present study is consistent with Abadi’s study as students made more correct use of lexical collocations than grammatical collocations.

In addition, the collocation use was considered in two aspects: grammar and meaning (based on the context). In the posttest, it was found that participants used some collocations which appeared in the web-based lessons in their writing. For example, for the sentence “In addition, teachers can give feedback online.” in the posttest, the participant no. 10 used two types of collocations which were “In addition” (type 5) and “give feedback” (type 1) within a sentence. This indicated that the student knew how to apply their knowledge of collocations in the writing after learning via web-based lessons.

The incorrect collocation use in the collocation test in context (pretest and posttest) was also considered according to two main aspects: grammar and meaning. The findings showed that participants made errors in their writing in the pretest and the posttest in various aspects. However, after they learned collocations via web-based lessons, the participants had an improvement and wrote better in their writing in the posttest as it was found that they used more correct collocations which appeared in the web-based lessons in their posttest. In addition, the errors were less frequently found in the posttest. Considering the incorrect collocation use based on grammar (Andersen, 2011; Eggenschwiler & Biggs, 2001), the errors found in this study were concerned with verbs, modals, articles, fragments, parallelism, punctuations, spelling, and so on.
Moreover, the incorrect collocation use based on meaning was found in all types of collocations. The sentence which had the wrong pair of collocations could change the meaning of the context and could be also considered as improper collocations for the context. Thus, if participants use collocations in the wrong pair, those collocations will be considered as the incorrect collocation based on meaning and not be counted in the collocation test in context. For example, “People can use technology to reach information in another country with just one click” (participant no. 1, type 1), “reach” was the wrong pair of “information”, but the right one should be “seek, look for, or get information”.

In summary, for the collocation test in context, it showed that the frequency of collocation use in all types in the posttest was higher than in the pretest. In other words, participants increased the use of collocations in the posttest. Furthermore, collocation type 2 was found to be mostly used (different value = 40), and the least used one was collocation type 3 (different value = 3). Overall, the findings revealed that the participants learned and used more collocations which appeared in web–based lessons in the posttest of the collocation test in context.

2. Web–based lessons on collocations

The results revealed that the students’ scores of exercises had the average at 85.63 out of 100. This means that they had a high level of understanding of collocations on average. In addition, if considering the posttests (the collocation test at a sentence level and the collocation test in context), most students’ scores and writing production were positively improved. In other words, they had better understandings of collocations after learning via web–based lessons.

In addition, the effectiveness (E1/E2) and the effectiveness index (E.I.) were used to test and evaluate the effectiveness of web–based lessons for this study. From the try–out in one to one testing (3 non–participants), the effectiveness (E1/E2) and the effectiveness index (E.I.) of web–based lessons were found to
be 80.50/88.90 and 0.75, respectively. E2 and E.I. were higher than the standard criteria of 85 and 0.5, accept the value of E1. Although the result of E1 (80.50) was lower than 85, it was permitted to be lower than the standard criteria in a period of 2.5%-5% (Promwong, Netprasert, & Sinsakul, 1997). Thus, as the E1 was in the period of 2.5-5% of 85, it was considered to be effective for the study. For the results from the field testing (1:100), they revealed that E1/E2 of web-based lessons on collocations was 85.6/86, and the E.I. was 0.68. To conclude, these results were considered effective for this study because the E1/E2 has the standard criteria as 85/85 (Promwong et al., 1997), and the E.I. has the standard criteria as 0.5 and above (Goodman, Fletcher, & Schneider, 1980).

3. Questionnaire

The questionnaire findings revealed that most students expressed positive attitudes towards web-based lessons on collocations. That is, the students agreed that the web-based lessons could enhance and support their learning of collocations. The top three responses of students’ attitudes were “Learning collocations via web-based lessons is helpful for the argumentative writing” ($\bar{x} = 4.55$, S.D. = 0.71), “Learning collocations via web-based lessons brings new opportunities of language learning” ($\bar{x} = 4.36$, S.D. = 0.65), “I better understand collocations after I learn via web-based lessons” and “I am satisfied with learning collocations via web-based lessons” ($\bar{x} = 4.21$, S.D. = 0.74), respectively. Additionally, the advantages of and problems in learning collocations via web-based lessons of some students’ attitudes were reported in an open-ended question. Some students perceived the usefulness of web-based lessons on collocations in terms of anywhere anytime learning, useful for the writing course, enhancing enjoyment and motivation, gaining more knowledge, and suitable for being a part of any subject. However, few students revealed the
problems they faced while learning via web-based lessons, for example, the short
time given on each exercises, the quick score appearance, and the difficulty of the
lessons.

4. Interview

The results of the interview showed that all (low, medium, and high)
proficiency students had similarly positive attitudes towards web-based lessons on
collocations. The findings from the interview were analyzed according to
3 questions as follows:

1. How do you apply your knowledge of collocations in writing?
   Students reported that they could use collocations for writing essays,
   assignments, reports, or thesis project and also revealed that learning collocations
could make their writing understandable for native speakers.

2. How do web-based lessons support you in learning collocations?
   Students revealed that they felt comfortable when they learned via
   web-based lessons as they can learn collocations anywhere and anytime they want.
   Students also enjoyed while learning collocations via web-based lessons.
   Additionally, they perceived that web-based lessons were interesting and useful
   lessons due to colorful and beautiful pictures and gaining more knowledge. Since
   there were a number of exercises on web-based lessons, students felt challenging
   in doing them and needed more practice.

3. What are your problems in learning via web-based lessons? How do you overcome the problems?
   Most students encountered with technical problems such as the low
   speed internet, the log-in problem, and the quick score appearance. Moreover, as
   most students were new to collocations and KKU Moodle, some of students revealed
   that the lessons and exercises were quite difficult for them. Students solved these
   problems by reading collocation lessons carefully, using ‘Hint’ buttons, checking
their understanding before doing exercises, and increasing their knowledge of collocations from the useful websites. Besides, one student revealed that she had her own problem about an eye pain because of using a computer for a long time. She solved this problem by trying to note the important collocations on paper and checking her understanding later. However, students were not permitted to look on collocation lessons on their note while doing exercises.

4. Discussions and Conclusion

As this study was conducted to develop web-based lessons on collocations in order to study the achievement of students’ knowledge of collocations and to investigate students’ attitudes towards using web-based lessons on collocations, the results gained from data analysis were summarized based on the three research questions of the study as follows:

Research Question 1: To what extent can web-based lessons help students to improve their knowledge of collocations?

For the results from the pretests and the posttests (the collocation test at a sentence level and the collocation test in context) and web-based lessons on collocations, they reveal the improvement and attempt of students in learning collocations via web-based lessons. These results are consistent with Raksasab (2010) showing that students improved their learning by making good scores of the tests after learning idiomatic expression via Moodle. This showed that the web-based lessons on collocations can help students improve their knowledge of collocations effectively. This is also congruent with the previous studies of Gündüz (2005) and Jamieson and Chapelle (2010). Gündüz (2005) reported that web-based learning is considered to be a medium that can facilitate students in learning language through the computer. Besides, Jamieson and Chapelle (2010)
claimed that web-based instruction can help students to succeed in language learning.

For the collocation test in context, the results show that students had an attempt to use collocations in their writing in the posttest, and students used some collocations which appeared in the web-based lessons in their writing. With respect to their attempt, it will be beneficial for students’ writing if they know a wide range of collocations (Hsu, 2007). Regarding the web-based lessons on collocations, students had a high level of understanding of collocations on average and showed the improvement of the writing production. That is, they had better understandings of collocations after learning via web-based lessons. Overall, it can be concluded that the results from the pretests and the posttests and students’ scores in web-based lessons serve the research question 1 because the majority of students had an improvement of collocation use even though there were only some collocations in the web-based lessons used in the posttest of the collocation test in context. In addition, they had a high level of understanding of collocations on average. All results from web-based lessons are consistent with Roberson’s (2008) study which showed that Moodle (web-based lessons) can facilitate students’ L2 writing and enhance their writing ability. That is, web-based lessons can help students to improve their knowledge of collocations in this study.

**Research Question 2: What are the effectiveness (E1/E2) and the effectiveness index (E.I.) of web-based lessons on collocations?**

As previously mentioned, the results revealed that E1/E2 of web-based lessons on collocations was 85.6/86, and the E.I. was 0.68. These results were considered effective for this study as the E1/E2 has the standard criteria as 85/85 (Promwong et al., 1997), and the E.I. has the standard criteria as 0.5 and above (Goodman, et al., 1980).
Research Question 3: What are students’ attitudes towards using web–based lessons on collocations?

With respect to the investigation of students’ attitudes towards learning collocations via web–based lessons, the results of the questionnaire and of the interview were reported positively. These results are relevant to the previous studies such as Hong, Ridzuan, and Kuek (2003), Lai and Kritsonis (2006), and Son (2008). Hong et al.’s (2003) study found that the social influence of internet–based learning caused students to have positive attitudes and prefer to learn more activities on the internet (Son, 2008). In addition, the present study’s results are congruent with Lai and Kritsonis (2006) which reported that students feel more convenient when they use web–based learning as the social influence of internet–based learning caused students to have positive attitudes, such as satisfaction, playfulness, and performance expectancy (Liao & Hsieh, 2011). Additionally, this study agreed with Son (2008) showing that students are motivated to learn more activities on the internet as they had fun while learning collocations via web–based lessons, which is used to design the courses supporting a number of learning strategies and often used for “anywhere and anytime learning” (Sarica & Cavus, 2008). However, few students reported the problems they faced while learning collocations via web–based lessons.

In summary, web–based lessons are effective and beneficial for learning collocations. According to this study, if students are directed carefully and receive necessary collocation knowledge, their writing ability will be improved by the integration of technology to language teaching and learning.
5. Recommendations

This present study still has the limitations that should be improved for further research. For example, further research should be conducted with a bigger sample size, different target groups or levels of the study, collocations relating to speaking skill, and other types of writing such as comparison and contrast writing, narrative writing, persuasive writing, etc. Moreover, further research should be expanded by increasing the web-based lessons on collocations with rich functions such as pictures, graphics, animation, sounds or pronunciation of collocations, and other useful websites. The high speed internet should also be set and provided to decrease technical problems and frustration. In addition, further research should provide the retention (i.e., re-test) in order to examine students’ memory or what they can recall about collocations after finishing the treatment for two weeks or a month, for example.

Although this present study did not present the great number of students’ use of collocations which appeared in web-based lessons in their writing, students had an attempt to learn and use some collocations. Besides, their attitudes towards learning via web-based lessons were reported positively. In conclusion, web-based lessons are effective and beneficial for learning collocations. According to this study, if students are directed carefully and receive necessary collocation knowledge, their writing ability will be improved by the integration of technology to language teaching and learning.

References


