Multimedia-Assisted Language Learning

The Journal of the Korea Association of Multimedia-Assisted Language Learning

This journal was published with the support of the Korea Research Foundation (KRF),
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The Department of English, Kyung Hee University
1 Seocheon-dong, Kiheung-gu, Yongin-Si, Kyonggi-Do, Korea, 446-701
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The purpose of this study is to report the e-pal project based on a CMC tool, a Web-based BB system, and describe how vocabulary frequencies are different in learners of many different language groups who took part in a cross cultural e-pal project for four years. I divided the learners into three language groups which are Asian learners, Western European learners, and Central & South American ESL learners. *WordSmith* software Tools was used to create the high frequent wordlists, concordance lines and key words. The results show that (1) regardless of nationality, the most frequent top 10 words were all function words such as *I, the, to, and, is, in, a, of, my, and it*; (2) for the Korean sample, high-frequency words are *the, is, I, in, and, to, of, my, a, and you*; (3) the most frequent verb as a content word is *have*, regardless of the nationality. American ESL learners and Finnish learners overused the verb *have* relatively. Asian learners in particular are more likely to use *very, like, so, school, and think*. Western European learners preferred *like, go, very, this, time, and people*. Central and South American learners are fond of *like, people, very, all, and school*. (4) Relatively underused words by Korean learners are *I, we, and that*. A study of word frequencies in e-pal project corpora can shed more light on the characteristics of English learners with different cultural and educational backgrounds.
I. INTRODUCTION

Corpus-based research perspectives are currently broadening our understanding of SLA (Second language Acquisition). Therefore, the more opportunities for SLA are provided with the relation to the corpus, the more learners can develop their inter-language on the basis of data-driven learning.

Corpora are important for applied linguistics because they offer a more reliable guide to language use than native speaker intuition. In addition, corpora are valuable for providing natural examples of words or grammatical features in context, which allow researchers to focus on patterns of language use. Therefore, the type of this study is close to objective, quantitative and analytic research.

The purpose of this study is to report the e-pal project based on a CMC tool, a Web-based BB system, and describe how vocabulary frequencies are different in many different language-group learners who took part in a cross cultural e-pal project for four years. I divided the learners into three language groups, which are Asian learners, Western European learners, Central & South American ESL learners. WordSmith computer software Tools was used to create the high frequent wordlists, concordance lines and key words. This research can give insight into grammar and vocabulary teaching and provide realistic information about high frequency words found in the cross-cultural e-pal project.

II. LITERATURE REVIEW

1. Corpus-based Research

The corpus, a collection of text that is stored and accessed electronically, represents a new and different perspective in terms of frequency, phraseology and collocation. Recently, the fields of using corpora are grammar-related reference books, ideology and culture, translation, stylistics, forensic linguistics, and plagiarism (Hunston, 2002).

Many corpus-based linguistic studies have been conducted since the first language corpus, the Brown, which was begun in 1962. Representative corpora amounting to a million are LOB (Lancaster–Oslo/Bergen Corpus) and Brown corpus.

Methods of investigating a corpus are first concordance lines. They represent only word-form. Second, the use of collocation. It shows the pattern of particular words and phrases in the way they co-occur. Third, corpus annotation. It is a method that puts
words into categories whether syntactic or semantic. What should be considered in corpus design are the criteria of size, content, representativeness and balance, permanence.


Ringbom (1998) makes use of seven Western European learner corpora from the International Corpus of Learner English (ICLE) data base (771,278 words), comparing them with each other and with the native speaker corpus. The study shows that a seemingly simple word frequency count may provide a perspective on the general characteristics of advanced learner language. The finding is that L1 transfer and its universal features have important effects on learning a foreign language. High-frequency verbs are be, have, do, can, and the most frequent main verbs are think, get, make, want, take, find, know, use, go, and live. Make is the most frequent verb form to NS (native speakers), followed by use, believe, feel. On the other hand, NNSs tend to use other verbs, especially think, get, find, want, and know. Among the frequencies of the top ten words (the, of, to, and, a, is, in, that, be, it), the and that are overused by NS.

Chang (2001) investigates English email types and vocabulary differences between NS and NNS. NNSs overuse more simple sentences rather than complex sentences than NS in exchanging email. She points out that email has the features of informal spoken language.

Kim (2002) and Altenberg and Granger (2001) report 15 high frequency verbs. A comparison between two frequency words show that overlapping verbs are have, think, make, get, say, go.

Biber and Conrad (2001) investigate 12 most common verbs that occur more than 1,000 times per million words across registers: say, get, go, know, think, see, make, come, take, want, give, and mean.

Granger and Tribble (1998) explore the relevance of learner corpus data to language classroom. NNS learners can assist language teachers as this allows teachers to confirm or disconfirm their intuitions about the way in which their students use the target language in comparison with other groups.

Milton (1998) analyzes an electronic inter-language corpus and argues that it can enhance the ability of learners to attend to lexical, grammatical and discoursal aspects of their writing.

Lee (2004) analyzes the learner corpora and investigates common patterns of learners’ errors in 60 essays written by Korean EFL students. Possible sources of errors fall into
two domains: interlingual transfer and intralingual transfer. The former may result from over generalization from the learners’ mother tongue. The latter are mostly due to over application of English rules and patterns.

2. CMC (Computer-Mediated Communication)

In recent years, CMC tools including email and electronic bulletin boards (BB) system have become popular already in language classrooms (Kamhi-Stein, 2000). In the middle 1990s, Korean English teachers began to integrate electronic communication into language teaching. For teachers of general second-language classes, there were the recognition of the importance of cultural exchange (Soh & Soon, 1991), and the desire to teach new learning skills to language minority students (Cummins & Sayers, 1990).

The benefits of CMC are seen in a great deal of research. Fotos & Iwabuchi (1998) found that email improves the participation of shy students. Moreover, implementing email projects in the L2 classroom reduces gender-related differences in classroom participation (Kamhi-stein & Browne-del Mar, 1997; Tella, 1992) and promotes student–student, as opposed to teacher–student interaction (Ady, 1999; Kern, 1996). Email projects also allow L2 speakers to improve their cross-cultural awareness (Ady, 1999; Kamhi-stein & Browne-del Mar, 1997). With the aid of text-based CMC, those with physical disabilities can have access to learning (Coombs, 1989). Another advantage of asynchronous CMC (web-based BB systems and email) is time-independent. Learners can participate in online discussions without being bound by time constraints (Kim, 2002).

In the next section, I will discuss the data and methodology and report the result.

III. METHOD

1. Research Questions

The purpose of this study is to examine high frequency words of each country that participated in cross-cultural e-pal projects from the year 2001 to 2004 and to compare high-frequency words among Asian, Western European and American learner corpora. International students from different countries exchanged their essays with the same topic from September to December each year. This has made possible a new, more concrete approach to the vocabulary features of learner language. Research questions are as follows.
1) What high-frequency words occur out of total corpora regardless of the nationality?
2) What high-frequency words occur in each different nationality?
3) What is the difference of frequent words found in Asian, Western European and
   Central and South American learner corpora?

2. Research Environment

1) Offline Environment

This is the text-base collaborative email exchange project for the purpose of
exchanging views on cultural differences as well as the similarities.

From the years 2001 to 2004, Y Korean college students majoring in computer
software participated in this e-pal project and S & H University students joined in 2004.

2) Online Environment

This e-pal project depends heavily on the WBB (web bulletin Board) system where
students from different cultural backgrounds meet. The host University is Meikai
University in Japan, where organizer Prof. Watanabe M. teaches. The features of the
project were password-protected, onymous and group-discussion, synchronous
communication. Users can use WBB only with ordinary browsers. (Figure 1)

http://hite.meikai.ac.jp/wbb/login.htm

![Welcome to the web bulletin board system at Meikai University](image)

Attention!

When your client computer is killed away for more than 15 minutes i.e.,
you did not press any button after not buttons shown on the page, your
WBB session will be canceled automatically by the server side.

[Figure 1] The Bulletin Board at Meikai University.

(1) Participating Schools

Korea : Yongin Songdam College, Sookmyung Women’s Univ. Hanyang Univ.

1) I am deeply grateful to Prof. Watanabe who distributed the comprehensive record of cross cultural
e-mail exchange project. His cooperation significantly enhanced the quality of this project. Without his
help, it would have been impossible to report this research.
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Germany: Berufsschule Schongau  
China: Hubei Polytechnology University, Shanghai Institute of Physical Education  
Finland: Malmi School of Business  
Taiwan: National Taipei Teachers College, National Chiayi University  
Japan: Meikai University, Yokohama National University, Obirin University  
Mexico: Colima University  
America: Houston University

(2) Writing Topics

E-pal project has three main phases of discussion.
① School Life (Sep.17–Oct.13) A short self introduction and school life  
② Daily Life (Oct.14–Nov.3) various aspects of students' domestic culture such as local festivals, local towns, local food, etc.  
③ Social Issues (World Peace) (Nov.4–Nov.24) Various domestic and international issues, such as environmental issues, regional conflicts, war, etc.

3. Data and Methodology

All students’ electronic written texts were selected from the e-pal project database from the year 2001 to 2004. I have made use of four Asian learner corpora, two Western European learner corpora, and two Central & South American ESL learner corpora, which are all raw electronic corpora.

Table 1 shows the size of each learner language corpora.

<table>
<thead>
<tr>
<th>[Table 1] The Size of Learner Corpora</th>
<th>Tokens</th>
<th>Types</th>
<th>type/token Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>28,773</td>
<td>3,558</td>
<td>12.37</td>
</tr>
<tr>
<td>Japan</td>
<td>120,934</td>
<td>7,210</td>
<td>5.89</td>
</tr>
<tr>
<td>Taiwan</td>
<td>55,641</td>
<td>4,126</td>
<td>6.49</td>
</tr>
<tr>
<td>China</td>
<td>17,842</td>
<td>2,058</td>
<td>11.53</td>
</tr>
<tr>
<td>Germany</td>
<td>9,715</td>
<td>1,345</td>
<td>13.84</td>
</tr>
<tr>
<td>Finland</td>
<td>4,118</td>
<td>1,005</td>
<td>24.41</td>
</tr>
<tr>
<td>Mexico</td>
<td>57,825</td>
<td>4,656</td>
<td>8.05</td>
</tr>
<tr>
<td>America(ESL)</td>
<td>48,258</td>
<td>4,554</td>
<td>9.44</td>
</tr>
</tbody>
</table>

Table 1 shows that the number of words in the Japanese corpus is the biggest. On the other hand, the Finnish corpus is the smallest. Types are the different words and tokens are repeated words. Type and token ratios show which country is using various
vocaularies. As shown in Table 1, Finland is the top and Germany is the second. Korea is the third. Japan is the last. WordSmith Tools can count the number of tokens and types automatically by the Wordlist tool in the WordSmith Tool. In addition, it can display concordance lines and compare two wordlists. WordSmith Tool is the research instrument in this study.

IV. RESULT & DISCUSSION

1) What High-frequency Words Occur Out of Total Corpora Regardless of the Nationality?

Figure 2 shows the most frequent top 10 words among total corpora by the wordlist. They are all function words rather than content words. I is the most frequent word in all corpora, followed by the, to, and, is, in, a, of, my, and it. It means most students who took part in the e-pal project were more conscious of grammar than lexical meaning.

On the basis of this result, we can compare the most frequent top 10 words out of total vocabulary with each country’s relative use percentage of the most frequent words by Wordlist. (Table 2)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Word</th>
<th>America</th>
<th>China</th>
<th>Finland</th>
<th>Germany</th>
<th>Japan</th>
<th>Korea</th>
<th>Mexico</th>
<th>Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I</td>
<td>2.97</td>
<td>4.25</td>
<td>3.79</td>
<td>3.90</td>
<td>4.07</td>
<td>2.67</td>
<td>3.18</td>
<td>4.45</td>
</tr>
<tr>
<td>2</td>
<td>THE</td>
<td>3.51</td>
<td>2.91</td>
<td>2.79</td>
<td>3.39</td>
<td>2.88</td>
<td>3.29</td>
<td>5.08</td>
<td>3.39</td>
</tr>
<tr>
<td>3</td>
<td>TO</td>
<td>3.05</td>
<td>2.55</td>
<td>2.50</td>
<td>2.17</td>
<td>2.46</td>
<td>2.30</td>
<td>2.36</td>
<td>2.77</td>
</tr>
<tr>
<td>4</td>
<td>AND</td>
<td>2.79</td>
<td>2.11</td>
<td>2.70</td>
<td>2.51</td>
<td>2.19</td>
<td>2.31</td>
<td>2.51</td>
<td>2.37</td>
</tr>
<tr>
<td>5</td>
<td>IS</td>
<td>1.65</td>
<td>1.88</td>
<td>1.97</td>
<td>1.45</td>
<td>2.43</td>
<td>2.74</td>
<td>2.26</td>
<td>1.66</td>
</tr>
<tr>
<td>6</td>
<td>IN</td>
<td>1.88</td>
<td>1.78</td>
<td>1.89</td>
<td>2.94</td>
<td>2.02</td>
<td>2.43</td>
<td>2.38</td>
<td>2.05</td>
</tr>
<tr>
<td>7</td>
<td>A</td>
<td>2.14</td>
<td>2.20</td>
<td>1.63</td>
<td>2.17</td>
<td>1.89</td>
<td>1.52</td>
<td>1.61</td>
<td>1.78</td>
</tr>
<tr>
<td>8</td>
<td>OF</td>
<td>1.93</td>
<td>1.32</td>
<td>2.06</td>
<td>X</td>
<td>1.52</td>
<td>1.85</td>
<td>2.29</td>
<td>1.38</td>
</tr>
<tr>
<td>9</td>
<td>MY</td>
<td>X</td>
<td>1.77</td>
<td>X</td>
<td>1.84</td>
<td>1.27</td>
<td>1.67</td>
<td>1.33</td>
<td>1.99</td>
</tr>
<tr>
<td>10</td>
<td>IT</td>
<td>X</td>
<td>X</td>
<td>1.24</td>
<td>X</td>
<td>1.31</td>
<td>X</td>
<td>X</td>
<td>0.91</td>
</tr>
</tbody>
</table>
This table shows overuse words and underuse words produced by learners who are from different countries. In Table 2, *I* (No.1) seems to be somewhat more used by Taiwanese, Chinese, and Japanese learners while *I* is less used by American ESL and Korean learners. *The* (No.2) is more used by Mexican, American ESL, and German learners while it is less used by Chinese, Japanese, and Finnish learners. *To* (No.3) is overused by American, Taiwanese learners while Korean and German learners used it less. *And* (No.4) is overused by American ESL learners, Finnish, and German learners. Korean learners overused the BE-verb *is* (No.5). *A* (No.7) is more used by Chinese, American, and German learners while it is less used by Korean, Taiwanese, and Japanese learners. *My* (No.9) is overused by German learners as well as Taiwanese, Korean and Chinese learners, while it is not used by American ESL and Finnish learners.

Biber, Conrad and Reppen (2000) emphasize that the number of words in each corpora is important for providing a reliable count of features in a text. Since the vocabulary size of Japanese corpus is the biggest, it can affect the frequencies to some extent. Therefore, another wordlist was created excluding the Japanese corpora. But the result was the same except for the 10th most frequent word *it*, which was replaced with *that*. *It* is not included in the top 10 most frequent words in most countries.

2) What High-frequency Words are Used in Each Different Nationality?

Figures 3 to 10 show high-frequency top ten words in each country.
The most frequent words are function words. Content words reveal little. One of the most interesting things is that the word *have* is ranked only in America and Finland.
sub-corpora in the top ten high-frequency words. It means American ESL learners and Finnish learners overuse the verb *have* relatively, compared with the rest of other learners. In order to classify the meaning of *have*, concordance lines in *Wordsmith* tool were used. Figure 11 shows the verb *have* concordance lines from America and Finland corpora. The verb *have* is overused when it means to possess (2) or used as an auxiliary verb (3). The meaning of *have* varies as follows.

(1) to eat (2, 3, 17)
(2) to possess (4, 5, 6, 7, 11, 12, 13, 15, 25, 30)
(3) auxiliary verb (10, 20, 23, 27, 28, 29)
(4) to receive (9, 16, 1)
(5) amount of time (14, 18, 19, 26)
(6) opportunity (8)
(7) idea, question (22)

In a concordance with 30 lines, the meanings of *have* is closer to the content word than the function word. Further research regarding the word class of *have* is requested.

<table>
<thead>
<tr>
<th>N</th>
<th>Concurrency</th>
<th>Sent</th>
<th>Tag/Wood No</th>
<th>File</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I will eventually have a Master's degree</td>
<td>16.563</td>
<td>st0-1 txt</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>For breakfast I usually have corn flakes or offer</td>
<td>3.237</td>
<td>main txt</td>
<td>62</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>For breakfast I usually have corn flakes or offer</td>
<td>3.592</td>
<td>main txt</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>300 years ago. So they have a very unique person</td>
<td>36.923</td>
<td>st0-1 txt</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2003. I am married and have two daughters, age</td>
<td>6.331</td>
<td>st0-1 txt</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>o from 6 to 13 40 I only have 2 subjets that day</td>
<td>28</td>
<td>main txt</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>end a few days ago. I have a real brother, e.</td>
<td>12.945</td>
<td>st0-1 txt</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>rough childhood or didn't have enough opportunti</td>
<td>33.205</td>
<td>st0-1 txt</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>a list of restaurants that I call Tivo</td>
<td>4.885</td>
<td>st0-1 txt</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>realise problems. Our town have become so strick o</td>
<td>12.569</td>
<td>st0-1 txt</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>I had a wedding is held. I have a friend who is dat</td>
<td>13.167</td>
<td>st0-1 txt</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>sent quite a lot of TV. I have many favourite TV</td>
<td>845</td>
<td>main txt</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>rate a cake. We do not have any legendaris or any</td>
<td>45.516</td>
<td>st0-1 txt</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>have a break and then we have another semester (</td>
<td>18.488</td>
<td>st0-1 txt</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>I as a student, I tried to have fun like the other p</td>
<td>19.175</td>
<td>st0-1 txt</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>a violent act, and should have a penalty of instanta</td>
<td>4.343</td>
<td>st0-1 txt</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>gathering. We normally have a meal that is on</td>
<td>21.863</td>
<td>st0-1 txt</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>pure Science major. I have about a year left u</td>
<td>36.230</td>
<td>st0-1 txt</td>
<td>70</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>travel after graduation. Have A Good Day! --</td>
<td>44.994</td>
<td>st0-1 txt</td>
<td>95</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>? Also, does everyone have to go to a different</td>
<td>13.108</td>
<td>st0-1 txt</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>big about you all. If you have any questions or w</td>
<td>18.713</td>
<td>st0-1 txt</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Victoria, Texas? If you have any questions, pli</td>
<td>25.591</td>
<td>st0-1 txt</td>
<td>59</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>21 year evenings students have their own ch</td>
<td>2.134</td>
<td>main txt</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>clothes are thanks to 60? Have you or do you go</td>
<td>36.708</td>
<td>st0-1 txt</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>s. The main reason we have the F and to allow</td>
<td>46.043</td>
<td>st0-1 txt</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>big class always when I have time. We both arc</td>
<td>2.574</td>
<td>main txt</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>after teaching pad time, I have decided that I want</td>
<td>18.320</td>
<td>st0-1 txt</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>big everyone's articles, I have decided to write ab</td>
<td>14.063</td>
<td>st0-1 txt</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>I totally all my life, and I have only date now bet</td>
<td>19.890</td>
<td>st0-1 txt</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>nish version. Do you have any websites about</td>
<td>2.650</td>
<td>main txt</td>
<td>67</td>
<td></td>
</tr>
</tbody>
</table>

[Figure 11] Have Concordance with 30 Lines from America and Finland Corpora
3) What High-frequency Content Words are Used Among Asian, Western European and Central and South American Corpora?

Asia (Korea, Japan, Taiwan, China)
Western Europe (Germany, Finland)
Central & South America (Mexico, America)

Figures 12, 13, 14 show high-frequency words of Asian, Western European, and Central and South American learners. In Figure 12, the top ten most frequent words among Asian English learners are the same as those of all corpora. The pronouns I (4.06%), my (1.60%), it (1.10%), and the verb is (2.23%) are overused by Asian learners. The, a, and, and in are less used relatively by Asian learners.
In Figure 13, the nine most frequent words are the same as those of all corpora. One different word is you (9). In (2.53%), a (2.01%), you (1.55%), we (1.03%) are overused by Western European learners.

In Figure 14, the top nine most frequent words produced by Central and South American ESL learners are the same as those of all learners. One different word is that (9). The (4.36%), and (2.64%), of (2.13%), that (1.54%) are overused by Central and South American ESL learners while I, my, it are less used.

On the basis of Figures 12, 13, 14, the high-frequency content words are created (Table 3).

![Table 3: High-frequency Content Words](image)

In Table 3, have is the most frequent content word among three language groups. Have, very, like are overused regardless of nationalities. So, think are overused by Asian learners. Asian learners in particular are fond of very, so, think. The verb think is assumed to have a strong association with the types of complement clause. The phrase I
think is overused. So is overused not only as a conjunction but also as an adjective. School, violence seem to be topic-related words. According to Altenberg and Granger (2001), the following verbs are likely to show up at the top of any corpus-based list of high frequency verbs (have, do, know, think, get, go, say, see, come, make, take, look, give, find, and use). The verb have is one of them. Kim (2002) studies the most frequently used verbs (have, think, like, do, make, want, get, and know) in the writings of the Korean EFL learners. The verb have is in this list as well.

According to Kwon’s research (2004), have, like, very, and go are included in the 50 high-frequency words only in reading part of the middle school English text books of the 6th and the 7th Korea National Curriculum, while so is excluded. As seen in Figure 11, have seems to be more used as a content word rather than a function word. The study on parts of speech of have is requested in further research.

Go, this are overused by Western European learners. Think is not included in the top ten frequency content words in the Western European group. Instead, Western European learners more often overused the verb know or like than think when they express their opinions and ideas or report the opinions. The reason so was less used by Western European learners can be L1 transfer. It may result from over-generalization from the learners’ mother tongue. Life (9), years (10) are topic-related words.

All, one are overused by Central American learners. Think is overused by Asian and Central and South American ESL learners. Violence is a topic-related word.

The Key-words program provided by Wordsmith tool was used to compare two pre-existing word lists, which are the Korean learner corpus and the other learners corpora. Figure 15 shows key words by comparing patterns of frequency of two word lists.

![WordList - [key words (keyness)]](figure15.png)

[Figure 15] Comparing Two Word lists (Key words)
Relatively less-used words by Koreans learners are *I, we, that, and think*. The following is an example of *that* from other students’ concordance lines.

<table>
<thead>
<tr>
<th>N</th>
<th>Concordance</th>
<th>Set</th>
<th>Tag</th>
<th>Word No</th>
<th>File</th>
<th>Mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>695</td>
<td>we always talked about that legend in the countr</td>
<td>43,594</td>
<td>sto-1.txt</td>
<td>93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>696</td>
<td>an evil spirit. remember that event, i was like. h</td>
<td>43,638</td>
<td>sto-1.txt</td>
<td>93</td>
<td></td>
<td></td>
</tr>
<tr>
<td>697</td>
<td>them. There are booths that are set up by differ</td>
<td>45,141</td>
<td>sto-1.txt</td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>698</td>
<td>ith each other and know that we are both trying t</td>
<td>41,525</td>
<td>sto-1.txt</td>
<td>89</td>
<td></td>
<td></td>
</tr>
<tr>
<td>699</td>
<td>everyone. And it seems that every year that my</td>
<td>8,071</td>
<td>sto-1.txt</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>700</td>
<td>with some of the ladies that worked down in the</td>
<td>22,601</td>
<td>sto-1.txt</td>
<td>52</td>
<td></td>
<td></td>
</tr>
<tr>
<td>701</td>
<td>voices. One other thing that I enjoyed was the f</td>
<td>46,529</td>
<td>sto-1.txt</td>
<td>99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>702</td>
<td>and family. For students that have children, spou</td>
<td>37,505</td>
<td>sto-1.txt</td>
<td>81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>703</td>
<td>and family. For students that have children, spou</td>
<td>36,537</td>
<td>sto-1.txt</td>
<td>83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>704</td>
<td>world peace. I do know that Saddam Hussein</td>
<td>46,875</td>
<td>sto-1.txt</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>705</td>
<td>issue. We have learned that pollution in not limit</td>
<td>46,028</td>
<td>sto-1.txt</td>
<td>97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**[Figure 16]** The Concordance Lines with *that*

In Figure 16, *that* is used as a relative pronoun and a conjunction. According to Lee (2004), EFL teachers tend to change the relative pronoun *that* into *when*, attempting to increase the grammatical accuracy, while native speakers completely accept the sentence “*The night that the typhoon hit Korea, I was busy preparing for an exam*” with no errors. Therefore, we need to focus on the use of *that* and encourage Korean students to use *that* more in authentic context.

V. CONCLUSION

A study of word frequencies in e-pal project corpora can shed more light on the characteristics of English learners with different cultural and educational backgrounds. The top 10 most frequent words are all function words such as *I, the, to, and, is, in, a, of, my, and it*. In case of Korean learners, high-frequency words are *is, the, I, in, to, and, my, of, a, and you*.

The most frequent content word is *have*. *Have, very, and like* are overused regardless of nationalities. One of the most conspicuous things is that content word *have* is included in top ten frequency words only by American and Finnish learners. It means American ESL learners and Finnish learners overused the verb *have* relatively. *Have* seems to be more used as a content word rather than a function word.

Asian learners in particular are very fond of the verbs *very, so, and think*. So is
overused not only as an adjective but also as a conjunction. Therefore, it can be said that learners with a particular L1 tend to use a particular word or phrase more or less frequently than other learner groups.

*Go, this* are overused by Western European learners. *Think* is not included in the top 10 high-frequency content words. *So* is also less used by the Western European group.

Relatively less used words by Koreans learners were *I, we, that, and think*. Therefore, we need to focus on the use of *that* and encourage Korean students to use *that* more in authentic context.

The limitation of this study is the small size of each learner corpus. Therefore, it would be difficult to make global generalizations about the result of the study. But this study on vocabulary frequency of different countries can help a teacher decide which items to emphasize in the classroom with regard to grammar. In addition, it can contribute to developing course materials and textbooks based on more accurate and empirical information about vocabulary frequency. I expect that corpus-based research can help the authenticity of material development and teachers’ understanding of interlanguage development.

The E-pal project based on bulletin boards does not aim to replace the face-to-face interaction. Rather, it can help the online interaction as a tool to improve the classroom activities. The internet is a useful tool for global communication and language learning, and a tremendous source for the application of corpora in applied linguistics.

**REFERENCES**


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Key words: high-frequency word, corpus linguistics, learner English, email, vocabulary

Author: Chung, Nam-Sook (Hanyang University): sshsm2@hanmail.net

received: May 2, 2006
accepted: July 15, 2006
The present study examined whether Internet chat could be a useful tool for developing EFL/ESL students’ understandings of English determiners. In chat conversations, frequent omissions of grammatical features of low communicative value (i.e. function words) are prevalent in order to save time effort. Despite this nature of chat, however, the written and synchronous, interactive nature of chat may provide potential for learning second-language (L2) function words. The present study compared the performance in chat conversations of 32 Korean university students for 4 weeks according to their meta-awareness and task type. For data analyses, all obligatory occasions for the use of core-determiners in the chat transcripts were identified and classified. Results showed that although meta-awareness during chat helped students significantly decrease the ratio of deletion of determiners, deletions of determiners were still prevalent throughout chat. Based on these results, it seems to be hard, in the chat mode, to ask students to focus on and use determiners, particularly articles.

I. INTRODUCTION

Internet chat is an increasingly popular form of communication throughout the world. Because of its unique nature (i.e. written yet synchronous/interactive), its application in second language acquisition (SLA) was recently pursued. While research shows that chat can be used to help students to obtain fluency (Bump, 1990; Kern, 1995; Oliva &
Pollastrini, 1995 Warschauer, 1998) and to improve grammatical competence (Blake, 2000; Kitade, 2000; Lee, 2002; Pellettieri, 2000; Saleberry, 2000), few studies have examined chat for the development of function words, such as English determiners.

Among English determiners, the English article is extremely difficult to learn and master for speakers of languages without an article system. Articles are the most commonly used words in English, but their use is complex. Explicit teaching of English articles alone may be relatively ineffective for these learners because of the semantic complexity of the articles’ distribution. Also, too much focus on the explicit teaching method could impair acquisition of communicative aspects of the language. Furthermore, even though current second language pedagogy strongly favors more-communicative methods (while not eliminating the explicit way of teaching), these methods present inherent problems for acquisition of articles because of the lack of salience of articles in speech.

In chat, it seems to be the fact that there is frequent omission of function words in order to save time and effort. If function words can be properly used instead of merely being omitted, however, the written nature of chat may reduce inherent problems of oral communicative methods for learning second-language (L2) function words. Since the written nature of chat enables students to notice, monitor and edit in a self-paced learning environment (Lee, 2001), students can attend to words that are not phonologically salient in speech. Moreover, the synchronous, interactive nature of chat allows learners to integrate into the discourse level and to develop awareness of variations of article use in communicative contexts (Pica, 1983). In the present study, we will find out if it is possible to encourage students to focus on and use determiners so that they can notice the targeted forms during chat activities. In this way, we will explore the potential of chat for noticing and consequently developing learners’ understandings of English determiners.

II. REVIEW OF LITERATURE

1. The English Determiner System

   English determiners are generally divided into three types in SLA literature: pre-, core-, and post-determiners. Celce-Murcia and Larsen-Freeman (1999) suggest the order of determiners in a noun phrase (NP) (Table 1).
The Role of Meta-Awareness and Task Type on the Use of Determiners during Internet Chat

<table>
<thead>
<tr>
<th>Table 1</th>
<th>The Order of English Determiners in a NP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-determiners</td>
<td>Core-determiners</td>
</tr>
<tr>
<td>Quantifiers: all, both, half</td>
<td>Articles: Ø, a(n), the</td>
</tr>
<tr>
<td>Multipliers: twice, three, times, etc</td>
<td>Possessives: my, your, his, her, its, their, our, -‘s</td>
</tr>
<tr>
<td>Demonstratives: this, that, these, those</td>
<td></td>
</tr>
<tr>
<td>Quantifiers: some, any, no, each, every, either, neither, enough</td>
<td>Quantifiers: many, much, (a) few, (a) little, several, more, less, most, least</td>
</tr>
</tbody>
</table>

Note: Nouns with no salient core-determiner are considered to follow the zero article (Ø).

Among the core-determiner category in English, articles hold a unique position: They have little lexical meaning but are semantically more complex than other determiners in English. An English article has no salient meaning in itself, but has complex semantic distribution in discourse.

2. Potential of Chat for Noticing L2 Function Words

Noticing is an important concept in L2 research. Many L2 researchers claim that communicative instruction should involve systematic treatments to draw L2 learners’ attention to linguistic forms in order to develop communicative competence (Doughty & Williams, 1998; Izumi, 2003; Overstreet, 2003; Sharwood-Smith, 1981, 1991, 1993, 2000; Swain, 1985, 1993, 1995, 1998). Particularly, modality was considered an important variable for noticing linguistic forms by many researchers (e.g., Danks, 1980; Greenslade, Bouden, & Sanz, 1999; Johnson, 1992; Johnson & Newport, 1989; Leow, 1993, 1995; Lund, 1991; Murphy, 1997; VanPatten, 1990; Wong, 2001).

Recent research investigated how chat can build learners’ communicative and grammatical competences (e.g., Blake, 2000; Kitade, 2000; Lee, 2002; Pellettieri, 2000; Salaberry, 2000). These studies suggested that the chat session could be a useful tool for the second language classroom. During chat sessions, learners have comparatively more time to reflect on the target language while composing a message than during oral interactions, and there is less pressure to perform in front of people. Nevertheless, because of its synchronized, real-time nature, the learner is forced to respond in a timely fashion. Perhaps this fact – it is synchronous but with slightly more time — is why chat interactions tend to contain more negotiation of meaning than oral communication, as shown by Pellettieri (2000).
The written nature of chat might reduce inherent problems of communicative methods for learning function words. Thanks to the visual (i.e. written) property of the chat mode, comparatively more time than in face-to-face conversation enables students to process input and monitor and edit output through a self-paced learning environment (Lee, 2001, 2002). The written mode seems to have an advantage in processing input because written input is constantly available for reprocessing (Danks, 1980). Research indicated that the written mode likely has more advantages in attending to input than does spoken language (e.g., Chapelle, 2001; Skehan, 1998b). Chapelle (2001) suggested that “one of the potential contributors to manipulation of learners’ attention in learning tasks is modality (i.e. spoken or written), and written communication typically affords more opportunity for attention to form, whereas spoken language often occurs to achieve fluency” (p. 49). Chapelle’s position was based on the cognitive advantage of written input, as suggested in Skehan (1998b).

Additionally, the synchronous, interactive nature of chat allows learners to be integrated into the discourse level. Pica (1983) claimed that it is impossible to master the English article system through textbook and classroom practice alone, because the linguistic information that the student needs to use and interpret English articles is often discourse-related. As a result, “a key to ESL students’ attaining proficiency in their use should be through developing awareness of variations of article use within communicative contexts” (p. 231). Compared with simple output practice, as in essay writing or oral presentation, chat conversation might provide the learner with various contexts where they can practice determiners, and, accordingly, could make it possible to learn this semantically complex system in an implicit way.

3. Meta-Awareness and Task Type as Variables

Despite these positive aspects of chat, however, there exist some potential problems with chat for acquiring target language function words. Given that the main purpose of chat is often no more than communication itself, chatters may want to save time and effort by minimizing the amount of typing, and thus often omit less crucial words for communication, like function words. For this reason, students’ meta-awareness and task types need to be considered and employed in order to possibly maximize the effect of chat.

As Leow (2001) suggested, a minimal level of meta-awareness may be required to contribute to more profound processing of grammatical information. Additionally, Schmidt (1993) defined attention as one form of consciousness and explicitly claims that learners
must consciously pay attention to or notice input in order for L2 data to become intake. His position gives potential implications for the present study in that L2 learners’ noticing during chat, and the consequent effect, can differ according to whether L2 learners consciously attend to L2 forms or not. Students’ meta-awareness of (or conscious attention to) targeted L2 forms may be possible during a chat activity because attending to function words in the written mode would not negatively affect the communication as much as in oral conversation.

Additionally, types of task used in the chat activity also need to be considered, given that task type was considered a variable in SLA and CALL research (e.g., Pellettieri, 2000 Pica, 1989, 1994: Skehan, 1996, 1998a, 2003). For example, Pellettieri (2000) suggested that the communication task is an important factor for the quantity and type of negotiation, and that it needs to be goal-oriented so that possible outcomes can be minimized. According to her, this minimized outcome causes form-focused interaction, and promotes the noticing of problematic linguistic structures, and thus plays a significant role in the development of grammatical competence.

We reviewed that chat has a unique nature for L2 learning practice, and its uniqueness might lead to the potential of L2 learning. Therefore, I believe that it is worthwhile attempting to investigate if we can effectively control students’ deletions of English determiners, and if chat can be an appropriate place for L2 output, which would possibly result in noticing L2 targeted forms.

4. Research Questions

General Research Question: Is chat an appropriate forum to ask learners to focus on and use determiners?

Despite the positive aspects of chat, because it is telegraphic in form and it contains frequent omission of function words, there are concerns about its utility for this purpose. One way to optimize the effect of chat might be to induce students to use determiners rather than merely omitting them. Therefore, by answering this general research question, we will learn whether or not chat, when appropriately used, can be a place where students can attend to and practice English determiners. In order to answer this general research question, the following research question was formulated:

Research Question: How will meta-awareness and task type affect students’ deletions of determiners during chat?

This research question aimed to determine how to encourage students to use L2 forms better in chat mode. The two variables the present study looked at were students’
meta-awareness and task type. The need of a minimal level of meta-awareness for more profound processing of grammatical information was already discussed. Additionally, it was discussed that task type was considered a major factor.

III. RESEARCH DESIGN

1. Participants

Participants were 32 Korean students from seven English classes at a University in South Korea. All the participants had taken at least six credits of English prior to the semester of their participation in the project, and therefore they were assumed to be at the intermediate (or higher) level at the time of testing, with minimum conversation skills required for the present study. Each of the 32 students was randomly paired with another student for the chat session.

2. Target Structure

To maximize the effects of learning articles, the target structure was limited to the core-determiner, which includes articles, but not pre- and post-determiners. As a result, the target structures of the present study include articles (e.g., Ø, a(n), the), possessives (e.g., my, your, his, her, its, their, -’s), demonstratives (e.g., this, that, these, those), and some quantifiers (e.g., some, any, no, each, every, either, neither, enough).

3. Instruments and Materials

The materials for chat tasks included information gap tasks (e.g., spot-the-difference), jigsaw tasks (e.g., picture-story-telling), and discussion tasks. An information gap task is a task wherein one person has certain information that must be shared with others in order to solve a problem, gather information or make decisions. Jigsaw tasks are tasks wherein subgroups of learners in a class are asked to read or listen to different information concerning a particular topic or situation. The full picture is then pieced together, like a jigsaw, when the groups combine in discussion to complete the task. The pictures for story-telling activities were adopted from Yule (1997) and The College Board, and the pictures for spot-the-difference were from Cromer Lifeboat Station and Rocky Ramber.co.uk (See Appendix for the chat task). MSN Messenger was used by the participants for the chat sessions of the present study.
4. Treatment and Procedures

Data was collected for six weeks during the Spring 2004 semester of study. In Week 1, background information was elicited through the background questionnaire asking for information regarding students’ contact information, the length of formal English education, their major field of study, their age, gender, and experience studying other foreign languages, their learning preferences, chat frequency, English typing skills, and so on. The questionnaire was written in Korean to ensure complete comprehension.

Between Week 2 and Week 5, all students were given the directions and materials for their homework activities, which were posted online and updated weekly with new assignments. Each of the eight treatment sessions took approximately one hour, and the participants were required to complete two one-hour treatments each week. The treatment sessions were conducted on their own out of class, and students received extra credit for doing each homework activity. All students met with their partners in their chat rooms every week, and each pair was assigned a certain task, which was a two-hour session. The first chat meeting included casual conversation to help familiarize themselves with MSN Messenger and to get to know each other. All chat conversations were conducted in English.

In Week 6, all participants answered the follow-up questionnaire about whether or not they felt they focused on the correct use of grammar, more specifically English determiners, during online chat. These questions were made as Yes-No questions. These questions were motivated to investigate how students’ (self-reported) meta-awareness on targeted L2 forms during chat affected the use of the targeted forms that were reflected in the posttest and chat transcripts.

5. Data Collection and Analyses

Once each chat session was completed, each pair of students was required to save their chat dialogue and then submit it online to their teacher as homework. The chat transcripts submitted were then downloaded into the author’s data to be further analyzed. Two native speakers of English who are majoring in linguistics at the University of Florida were hired to identify all obligatory occasions for use of core-determiners in the chat transcripts. They were asked to note all errors with core-determiners, including errors of omission, in the transcripts and to give their correct forms.

Each of the obligatory core-determiners was categorized as a zero article (∅), an indefinite article (a(n)), a definite article (the), and one of the other core-determiners (i.e.
demonstratives, possessives, and quantifiers). For statistical analyses, nonparametric tests (i.e. Mann–Whitney U tests) were employed, because the present study had a relatively small sample size. The statistical significance was set at a p-value of 0.05. SPSS (Statistical Package for the Social Sciences) 11.5 for Windows was employed to analyze the results.

VI. RESULTS

The role of meta-awareness and task type was analyzed as independent variable to see their effects on the use of determiners during chat. The analyses of the ratio of deletions to total errors (Del/Err) shown in the students’ chat transcripts were presented as dependent variable. In this case, to get an overall trend in the direction of these ratios, the first week (Week 1) and the last week (Week 4) were compared for the ratio of the dependent variable.

To see the effect of meta-awareness, the following two groups were distinguished and compared in the two different task types: Group M (the group with meta-awareness), Group N (the group without meta-awareness). At the same time, to see the effect of task type, the participants’ use of determiners was compared and presented under the two task types: convergent task (e.g., information gap/jigsaw) and divergent task (e.g., discussion), although this comparison of task type was not conducted in separate groups.

1. The Role of Meta-Awareness in Chat Convergent Task

Tables 2 and 3 present descriptive statistics for the ratio of deletions to total errors (Del/Err) during chat convergent tasks, according to meta-awareness, and Table 4 presents their statistical analyses.

<table>
<thead>
<tr>
<th>Week</th>
<th>Mean</th>
<th>Maximum</th>
<th>Minimum</th>
<th>SD</th>
<th>Deletions</th>
<th>Total errors</th>
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<tr>
<td>1</td>
<td>84.49</td>
<td>100.00</td>
<td>33.33</td>
<td>19.79</td>
<td>74</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>69.16</td>
<td>100.00</td>
<td>0.00</td>
<td>43.04</td>
<td>50</td>
<td>59</td>
</tr>
<tr>
<td>3</td>
<td>72.90</td>
<td>100.00</td>
<td>0.00</td>
<td>36.30</td>
<td>64</td>
<td>79</td>
</tr>
<tr>
<td>4</td>
<td>72.22</td>
<td>100.00</td>
<td>0.00</td>
<td>33.03</td>
<td>65</td>
<td>80</td>
</tr>
</tbody>
</table>

[Table 2] Del/Err by Group M in Chat Convergent Tasks (N=15)
The result of statistical analysis shows that there is a significant difference in the ratio of deletions to total errors (Del/Err) from week 1 to week 4 between Group M and Group N (p = 0.013). This result indicates that meta-awareness during chat may be responsible for the difference in the ratio of deletions to total errors (Del/Err) from week 1 to week 4 during the convergent chat tasks.

2. The Role of Meta-Awareness in Chat Divergent Task

Tables 5 and 6 present descriptive statistics and graphs for the ratio of deletions to total errors (Del/Err) during chat divergent tasks, according to meta-awareness during chat, and Table 7 presents their statistical analyses.
The result of statistical analysis shows that there is a significant difference in the ratio of deletions to total errors (Del/Err) from week 1 to week 4 between Group M and Group N ($p = 0.033$). This result indicates that meta-awareness during chat may be responsible for the difference in the ratio of deletions to total errors (Del/Err) during the divergent chat tasks.

To summarize our findings relating to the research question, the results of the analyses of the ratio of deletions to total errors (Del/Err) in chat showed that meta-awareness during chat resulted in a significant decrease in the ratio of deletions to total errors (Del/Err) in week 4 in both task types. When task type was considered as a variable, however, there was no significant difference in the ratio of deletions to total errors (Del/Err) between the two task types. In answering the research question, therefore, meta-awareness, rather than task type, is a significant factor for students’ performance in the use of determiner during chat.

Nevertheless, we need to note that both Group M and Group N show a pretty high ratio of deletions to total errors (Del/Err) in their chat conversation. To get more insightful data, a qualitative study is presented in the following section.

### 3. Qualitative Data

This section presents qualitative data regarding students’ (self-rated) meta-awareness during chat activities, based on students’ answers to the questionnaire and on their chat transcripts. The results of the quantitative analyses on the research question determined...
that deletion of determiners is one major phenomenon in Korean students' chat conversation (if it is not an error), and students' meta-awareness during chat is responsible for the difference in the ratio of deletions to total errors (Del/Err), although both Group M and Group N show a much higher ratio of deletions to total errors (Del/Err) in the chats than in the pretest and posttest. In this section, we examine students' responses when asked if they attended to grammar during their chat conversation, and why not, if they answered no, etc.

To the question if they consciously focused on the correct use of grammar during the chat activities, 15 out of 32 students reported that they had attended to grammar as much as they could, while 17 students reported that they had mostly ignored it. To the questionnaire item on which they chose “Yes,” how much the act of consciously focusing on grammar affected their comprehension and production during the chat activities, 11 out of the 15 students chose “a little,” and the other four students chose “a lot.” No one reported that it did not affect them in their chat conversation at all. To the question if they chose “No,” why they did not focus on it, the following are general answers from them (translated from Korean into English by the author):

“As conversation got faster, it was hard for me to focus on grammar. The nature of chat makes us prefer brevity, I think.”
“Focused on communication for the sake of convenience.”
“It took too much time to write grammatically correct expressions. At first, I didn’t submit what I typed without re-checking my English, but eventually I realized grammar was not very important for communication.”
“I tried to attend to grammar at first, but eventually neglected grammar because it was too difficult to keep doing.”
“I preferred being comfortable during chat (by not attending to grammar).”
“Because I felt I was talking (instead of writing) during chat, I was just rushed to communicate, and this made me neglect grammar (e.g., tense, spelling, etc.).”
“(I ignored grammar,) because I did not know grammar very well.”
“Communication was possible without attending to grammar.”

As indicated by their responses, a major reason students did not attend to grammar is that they thought that the main purpose of chat conversation was communication itself. Based on this finding, I suppose that grammar and communication are mutually exclusive
in the chat conversation. During the chat conversations, it seemed to be difficult for students to attend to grammar while attending to communication at the same time. Due to the limited attention capacity of human being, the written nature of chat did not seem to be an advantage in performing grammatical aspects of language.

Grammatical competence also seems to be a reason for which students omit determiners, given that some students reported that grammar was difficult and there were positive correlations between the ratio of errors to total head nouns (Err/N) and the ratio of deletions to total errors (Del/Err) in both chat task types (p = 0.045 for the divergent task and p = 0.051 for the convergent tasks). The students in present study, who were at the intermediate (or lower) level of English, might have difficulty in focusing on the less urgent grammatical features (i.e. articles), while there were more urgent grammatical features to be attended to. Maybe for this reason, deletion of articles was unavoidable throughout chat conversations.

V. DISCUSSION

This section further discusses the findings as a whole, and provides the limitations of the present study.

1. Discussion

We return to the research questions that motivated the study in order to now provide answers. Then, discussion of the general research question follows.

The research question asked how students’ meta-awareness and task type would affect performance, as reflected in their use of English determiners during chat. The answer to this question showed that meta-awareness was a significant factor for students’ performance, given that the groups that participated in chat showed a more decreased ratio of deletions to total errors (Del/Err) in week 4 when accompanied by self-rated meta-awareness. Task type was also considered as variable, although there was no significant difference in the ratio of deletions to total errors (Del/Err) between the two task types.

From the qualitative data based on the questionnaire, we learned that many of the Group N reported that they had tried to attend to grammar until they eventually gave up, which could possibly be the factor for the difference. Specifically, these students seemed to attend to and use determiners at first, but their efforts were decreased over the course
of the chat. As discussed in the qualitative data, students thought that the main purpose of chat conversation was communication itself, and they might have thought that grammar and communication were mutually exclusive. Retrospective interview sessions would have helped us to understand the difference in the ratio of deletions to total errors (Del/Err) between the attention group and the no attention group during chat.

Even though students’ meta-awareness resulted in a significant difference in the ratio of deletions to total errors (Del/Err), the overall ratio of deletions to total errors (Del/Err) remained very high throughout the chat conversation in both task types. This may be partly because the telegraphic nature of chat seems to be difficult to overcome even for educational purposes. In addition, it was too difficult for students to focus on the less-serious grammatical features (i.e. articles), while there were more-urgent grammatical features the participants needed to pay attention to, such as prepositions, pronouns, and verb tense.

Previous studies on the acquisition of articles often used L2 learners’ production data (either written or spoken language) for analysis, but, in production data, learners often avoided using articles when they faced occasions they were not sure of. There may be at least two explanations for the large differences in this ratio. First, chat conversations (as well as oral production) may consist of comparatively less difficult lexical items, because students can avoid any expressions that they are unsure of. Therefore, it might be less difficult for students to use target determiners correctly in chat conversation than in the multiple-choice cloze tests, because they are in control of the context and their output. Second, during chat, the students can use alternative determiners, such as demonstratives, possessives and quantifiers, when they are not sure of the correct usage of articles. For further research on English determiners, therefore, type of data collection should be controlled for a more precise picture of determiner use.

The general research question asked if chat is an appropriate forum to ask learners to focus on and use determiners and other function words. The answer to the research question showed that conscious attention to grammar during chat resulted in a significant decrease in the ratio of deletions to total errors (Del/Err) in both task types. It seems that it is possible to ask students to focus on determiners and other function words during certain tasks with the hope of helping them increase their accuracy in the L2.

Nevertheless, the overall ratio of deletions in chat was too high for us to conclude that chat could be a place where students can practice determiners, regardless of meta-awareness. Given this result, the nature of chat (i.e. the omission of function words) and students’ proficiency need to be considered. Chat may be used as a place where
students develop other language skills, such as vocabulary, interactional skills, and grammatical competence other than function words, as suggested in earlier research (e.g., Blake, 2000; Salaberry, 2000; Pellettieri, 2000; Kitade, 2000; Lee, 2002). However, it seems difficult for teachers to use chat as a forum to ask students at the intermediate (or lower) level of English, as in the present study, to focus on and use English articles for educational purposes.

2. Limitation

The present study has methodological limitations that need to be considered for future research:

1) Participants

A relatively small number of participants (32) were utilized in the present study. A larger number of participants in each group would improve the robustness of the findings for future research, and allow for greater and more varied comparisons between groups. In addition, the proficiency level of the students in the present study may not be reliable because no formal test was conducted to measure the students’ level of proficiency. Their proficiency levels were interpreted as intermediate or higher, according to the University criteria. However, two native proofreaders reported that many of the students had not reached this level, judging from the students’ chat conversations. Because the present study did not control students’ proficiency level, that might have been an intervening variable for the outcome. For future research, a formal test is needed to confirm the students’ proficiency level.

2) Treatment

The length of treatment was only four weeks, which might be too short to expect some significant change in the use of the English articles. It could take longer periods of treatment to fully investigate the development of this feature.

3) Method of Collecting Information

The present study utilized a questionnaire for students to self-report on their own awareness during chat. Since the questionnaire may be too subjective and easy to misinterpret according to the students’ own criteria, more objective methods like think-aloud protocols are needed for future research.
VI. CONCLUSION

This section provides conclusions, and addresses pedagogical implications regarding the use of chat for developing L2 function words. Finally, suggestions for future research are presented.

1. Conclusion

The findings of the present study lead to the following conclusions:

First, we can conclude that chat is unlikely to be an appropriate forum to ask learners to focus on and use English determiners, particularly articles. In an effort to optimize the advantages of chat despite its primary disadvantage of encouraging abbreviated discourse, the present study investigated if students’ meta-awareness and task type would affect the use of determiners during chat. The results showed that the students’ meta-awareness seemed to promote students’ usage of articles a little bit. However, even though students’ meta-awareness resulted in a significant difference in the ratio of deletions to total errors (Del/Err), the overall ratio of deletions were very high throughout chat conversations in both convergent and divergent tasks. In addition, students’ L2 proficiency seems to be an important factor to be considered, because students at the intermediate level of English might have difficulty in focusing on the less-urgent grammatical features (i.e. articles), as their focus is on meaning.

2. Implications

Our implication regards the use of chat in the classroom. It seems difficult for ESL teachers to use chat for the purpose of developing English articles, at least for the learners as proficient as in the present study. This is because although meta-awareness during chat is somewhat responsible for students’ deletion of determiners, given the telegraphic nature of chat and students’ proficiency (i.e. intermediate or lower), deletion of articles seems to be unavoidable throughout chat conversations.

From a research perspective, we can also suggest that using chat transcripts to investigate theoretical aspects of acquisition of English articles, such as the sequence of acquisition and acquisition order, may not provide adequate data. This is because the learners’ developmental state may not be accurately reflected in the chat transcript due to frequent deletion of articles, while research on the acquisition order of articles often deals with the deletion/retention of articles and the overuse of “the” and “a(n)” for the analysis.
In other words, the chat data reflect L2 learners’ performance rather than competence.

REFERENCES


268–286.
Appendix

MATERIALS FOR CHAT

For Student A

Week 1

Time: two hours

1. Find out personal information of your chat partner.
   (e.g., Name, major, interests and hobbies, future plans after graduation)
2. Share with your partner any experiences, episodes, opinions and thoughts regarding
   English learning.
   (e.g., Why do you study English?; Do you think English is difficult to learn for
   Koreans? If so, why?)
3. In the given website, you will find four pictures out of eight. Your chat partner has the
   other four pictures. Those pictures are in order according to their number. Cooperate
   with your partner and figure out the whole story.
4. Talk about your achievement, for example, getting your driver’s license, learning a new
   skill, getting a part-time job. Ask each other some of these questions: What had you
   been doing before your achievement? How did you prepare for it? Had you considered
   giving up before you succeeded?
5. Talk about a goal that you are working toward. What steps will you take to achieve
   your goal? When will you have completed each step?
6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week3language.html
Week 2

Time: two hours

1. You are now in online chat conversation. Discuss the differences between face-to-face conversation and online chat conversation.

2. Talk about your University. First, talk about what might be done to improve it, and then about what shouldn’t be changed.

3. In the given website, there are eight differences between the pictures you and your partner have. Spot as many differences as you can.

4. Talk about a relationship that is important to you. How did you meet? What were you doing when you met? Describe some events in the relationship.

5. Talk about your life ten years from now. What will you be doing for a living? What kind of family life will you have? What hobbies will you be enjoying? What will you do to achieve these things?

6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week5inha.html
Week 3

Time: two hours

1. Imagine that you are planning to participate in an international food festival. Which foods would you like to bring and why?
2. Heavy traffic is a big problem in both cities and suburbs. What can we do about it?
3. In the given website, you will find three pictures out of six. Your chat partner has the other three pictures. Those pictures are in order according to their number. Cooperate with your partner and figure out the whole story.
4. Talk about how you feel in your home, office, or classroom. What makes you feel good? What makes you feel bad? What would you like to change?
5. Talk about a place you remember from your childhood. Where is it? When is the last time you went there? Did you like there? Why or why not?
6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week11kamsa.html
Week 4

Time: two hours

1. Talk about a situation in your life that you have regrets about. Describe the situation and talk about what you wish had happened and why.

2. Imagine two of you are taking a trip together to another country. You’ll be gone for several weeks. Decide where you’re going. Then make a list of things you have to do and arrange before the trip.

3. In the given website, there are ten differences between the pictures you and your partner have. Spot as many differences as you can.

4. If you hadn’t been born, what would have been different for your family, friends, teammates, or community? Choose two areas of your life to discuss and talk about all the things that would be different.

5. Do you think tipping is a good system? Why or why not? Were you ever in a situation where you didn’t know what to do about a tip?

6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week9advanced.html
1. Find out personal information of your chat partner.
   (e.g., Name, major, interests and hobbies, future plans after graduation)
2. Share with your partner any experiences, episodes, opinions and thoughts regarding
   English learning.
   (e.g., Why do you study English? Do you think English is difficult to learn for Koreans?
   If so, why?)
3. In the given website, you will find four pictures out of eight. Your chat partner has the
   other four pictures. Those pictures are in order according to their number. Cooperate
   with your partner and figure out the whole story.
4. Talk about your achievement, for example, getting your driver’s license, learning a new
   skill, getting a part-time job. Ask each other some of these questions: What had you
   been doing before your achievement? How did you prepare for it? Had you considered
   giving up before you succeeded?
5. Talk about a goal that you are working toward. What steps will you take to achieve
   your goal? When will you have completed each step?
6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week3linguistics.html
Week 2

Time: two hours

1. You are now in online chat conversation. Discuss the differences between face-to-face conversation and online chat conversation.

2. Talk about your University. First, talk about what might be done to improve it, and then about what shouldn’t be changed.

3. In the given website, there are eight differences between the pictures you and your partner have. Spot as many differences as you can.

4. Talk about a relationship that is important to you. How did you meet? What were you doing when you met? Describe some events in the relationship.

5. Talk about your life ten years from now. What will you be doing for a living? What kind of family life will you have? What hobbies will you be enjoying? What will you do to achieve these things?

6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week5yonghyun.html
Week 3

Time: two hours

1. Imagine that you are planning to participate in an international food festival. Which foods would you like to bring and why?
2. Heavy traffic is a big problem in both cities and suburbs. What can we do about it?
3. In the given website, you will find three pictures out of six. Your chat partner has the other three pictures. Those pictures are in order according to their number. Cooperate with your partner and figure out the whole story.
4. Talk about how you feel in your home, office, or classroom. What makes you feel good? What makes you feel bad? What would you like to change?
5. Talk about a place you remember from your childhood. Where is it? When is the last time you went there? Did you like there? Why or why not?
6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week11hamnida.html
Week 4

Time: two hours

1. Talk about a situation in your life that you have regrets about. Describe the situation and talk about what you wish had happened and why.

2. Imagine two of you are taking a trip together to another country. You'll be gone for several weeks. Decide where you're going. Then make a list of things you have to do and arrange before the trip.

3. In the given website, there are ten differences between the pictures you and your partner have. Spot as many differences as you can.

4. If you hadn’t been born, what would have been different for your family, friends, teammates, or community? Choose two areas of your life to discuss and talk about all the things that would be different.

5. Do you think tipping is a good system? Why or why not? Were you ever in a situation where you didn’t know what to do about a tip?

6. Choose any topics you wish to discuss (if time allows).

Pictures at http://plaza.ufl.edu/jbha/week9conversation.html
The Role of Meta-Awareness and Task Type on the Use of Determiners during Internet Chat

Key words: chat, second language acquisition, English education, English determiners, English articles, noticing

Author(s): Ha, Jong-Bum (Inha University, 1st author): jongbumha@inha.ac.kr
Han, Moon-Sub (Hanyang University, 2nd author): mshan@hanyang.ac.kr

received: April 5, 2006
accepted: May 24, 2006
Action Research in Online English Class and Teacher Development

Kyutae Jung (Hannam University)
Kyungsuk Chang (Korea Institute of Curriculum & Evaluation)


Action research, as a form of applied research, has gained attention in language teacher education. This paper reports a study on how a language teacher has improved his own online instruction through action research in collaboration with a colleague. The study employs classroom observation, teacher diary, questionnaire and interview for data collection. The analysis of the gathered data reveals that the development of the teacher’s critical awareness is encouraged by reflective teaching through the classroom investigation and collaboration. It is found that action research, combined with what is known from the research literature, provides a useful and viable approach to making educational decisions at the local level. It is further recognized that change in the teacher’s attitudes towards classroom practices has a positive effect on his students’ learning. From these findings, it is suggested that one viable way of bridging the gap between theory and practice is to encourage teachers to adopt a research orientation to their own classroom practice, and to engage in research projects. The research findings also suggest that priorities and values of people of a particular cultural context should be considered in setting up language teacher development programs. It is further suggested that efforts should be made to set up a network for dissemination of the research findings in a given context.
I. INTRODUCTION

The literature of language learning and teaching shows that there has been an increasing incorporation of information and communications technology (ICT, henceforth) into language classrooms (Chapelle, 2001; White, 2003). Many different terms are used to describe approaches which employ ICT. In this paper we are focusing on online learning or virtual learning which can be expandable in time and space. Both Computer-Assisted Language Learning (CALL) and Web-based Instruction (WBI) seem to be applicable to this study. These terms, however, are too broad because they imply the use of technology as a classroom supplementary material. The shift in the learning environment is characterized by 'learner-centeredness', 'self-directed learning', 'cooperative learning', and 'learner autonomy', which distinguish online learning from the traditional learning (Palloff & Pratt, 1999, quoted in Astleitner, 2001; Kassop, 2003). In this new environment, the roles of teachers as well as students are different from those required in the face-to-face language classroom. An impetus to online classroom research comes from such changes in roles teachers and students play in the new environment.

The rationale for the great demand for the classroom research is that the classroom where language learning and teaching take place is crucial to a better understanding of the complex process of learning (Allwright, 1988; Allwright & Bailey, 1991; Chaudron, 1988; van Lier, 1988). In terms of teacher effectiveness, a number of earlier studies have been carried out using methods of comparing learning outcomes of CALL (Beatty, 2003). It is observed that the focus of those studies was the comparison of the student achievements between the experimental group and the control group. Although much emphasis has been given to understanding the process of learning and teaching, little research has been done in the process of learning and teaching. The recent survey of the databases supports this. According to the review done in April 2006 for the keywords computer + assisted + language + learning over the dates 2000 to 2006, Education Resources Information Center (ERIC) provides 345 journal articles on the CALL. Only one out of the articles is about action research. The result of the search by specifying 'e-learning' as a search keyword and limited to action research is only one out of 285 journal articles.

The increasing need for the research on the online learning classroom, which is created by ICT, also comes from efforts to bridge the gap between theory and practice. Classroom research in online learning has as its primary focus the natural context where teaching and learning takes place, rather than the experimental setting, where variables
are controlled. In other words, the rationale for classroom research lies in 'building theory in practice', not in 'the application of theory derived from research' (Ramani, 1987; Widdowson, 1984). The movement toward bridging the gap between theory and practice through classroom research is in parallel to the bottom-up approach to change in language teaching. Crucial to bringing about change in teaching is the orientation toward teacher as researcher involved in critical reflection on his or her teaching. As Shön (1983) claims in his reflection-in-action theory, a teacher engaged in critical reflection is not a passive recipient of educational theory or change, but he or she is actively involved in investigating his or her own practice in an attempt to improve the given situation.

These recent developments in language teaching are true of online English language classroom. At the heart of effective change in online English language instruction is a teacher’s participation in the process of classroom research. The questions that the present study is concerned with are: 1) On what aspects of online English language teaching is the teacher’s awareness raised through action research? and 2) How does the teacher-initiated classroom research benefit the students?

II. THEORETICAL BACKGROUND

1. Action Research as a Research Method

As a form of classroom research, action research is defined in different ways. According to Kemmis and McTaggart (1988), it is a form of collective self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situation in which these practices are carried out. Wallace (1998) defines it as the systematic collection and analysis of data relating to the improvement of some aspects of professional practice. Burns (1999) captures key features of action research. First, action research is contextual, small-scale and localized. Second, it is evaluative and reflective because it aims to bring about change in the context. Third, it puts emphasis on a bottom-up approach to educational change. Fourth, it encourages the partnership between colleagues, practitioners and researchers.

Its direct contribution to the solution of problems and focus on a specific problem in a specific setting are distinguished from other forms of applied research, which are concerned with establishing relationships and testing theories by means of studying a large number of cases, controlling variables, and putting emphasis on generalizability of
its findings (Wiersma & Jurs, 2005). This distinction does not mean that action research does not utilize the scientific method. Rather, as Nunan (1992) suggests, care needs to be taken to the reliability of all forms of inquiry, but for action research there is not the same imperative to deal with external validity. With less concern with generating generalizable knowledge, priority is given to solving pressing problems associated with practitioners’ own particular workplace. Richards and Farrell (2005), in the discussion on two dimensions of action research, point out that the word ‘research’ refers to a systematic approach to carrying out investigations and collecting information, and the word ‘action’ refers to taking practical actions to resolve classroom problems.

In terms of the scope of action research as a method, Cohen and Manion (1994) point out that the usage may range at one extreme from a teacher trying out a novel way of teaching to, at another, a sophisticated study of organizational change using a large research team and backed by government sponsors. In spite of its wide range of scope, there has been agreement on steps involved in action research. Kemmis and McTaggart (1988) propose the action research spiral which consists of planning, acting, observing and reflecting. In the spiral, four steps are linked into a successive cycle. The concern identified within a given context engages the teacher in planning actions, and the plan is implemented. Effects of the actions are observed, and the effects are reflected, serving as a basis for further planning. Nunan (1992), in this vein, describes the nature of action research is such that different types of problems arise, different ways of solutions are sought, the results are reflected, and the inquiry is further extended as a new problem arises.

2. Teacher Development through Action Research

Action research is becoming increasingly significant in language teacher professional development. As its definitions show, it involves self-reflective process. Reflective teaching can be explored in the spiral of action research. That is, action research provides a means for teachers to examine the effects of new ideas on practices. Teachers’ awareness can be enhanced through critical reflection, and then has an impact on making instructional decisions. In this respect, Wallace (1991) sees action research, as an extension of the normal reflective practice of teachers, is more rigorous and may conceivably lead to more effective outcomes.

Burns (2005) classifies published studies of action research in English language teaching into three types of accounts: studies by academic researchers as a component of BATESOL/MATESOL, by individual teacher-researchers as a project, and by teachers of
action research conducted for their own professional development. While studies published over the last decade fall on one of the three categories, they vary in terms of scale, background and concern. Tsui (1996), for example, reports an action research on teaching writing by a teacher. The teacher’s perception of writing and teaching it, in the course of incorporating the process writing into her class, changed. The investigation also brought about changes in her attitude towards effective ways of teaching, and she became confident in her teaching.

Troupiotis (1995), a teacher researcher, improved the understanding of his teaching grammar. In the process of course planning he increased confidence that he could accommodate what was required of him in relation to the curriculum demands. The finding supports the claim that the teacher–initiated action research empowers teachers to become autonomous and take responsibility for their own teaching.

Pyo (2005) reports an action research on the process of introducing cooperative learning approach to her reading class, where grammar translation mixed with a task–based approach prevailed. She found that the research provided a means for her to inquire into her practice with students. Through dialogue and reflection, the teacher and her students explored their new practices as co-constructors, their assumptions, and different ways of teaching and learning. Findings in the literature of action research support the assertion that teachers learn to teach and improve their teaching through participation in the critical investigation into their own practices.

Observation is at the heart of teacher development through reflective teaching. Allwright (1988), in the discussion on observation as a feedback tool in teacher training, makes a distinction between observation as a problem and observation as a solution. While observation as a problem puts focus on validly evaluating teachers on teaching practice from the point of view of outsiders, observation as a solution emphasizes self-evaluation as agents of behavioral change in teachers themselves. Allwright’s distinction suggests that observation can serve different people in different contexts towards different ends. With respect to action research, observation serves the purposes to collect information to decide what changes might be necessary, to evaluate effects of action plan on teaching behavior, and to reflect on its significance. Classroom teachers are, in most cases, engaged in self-observation as part of their professional development. Observation by colleagues or teacher trainers is encouraged on the assumption that they can provide objective views on teaching observed. In terms of the validity of action research this would enable the researcher to obtain more objective data of the teaching practices under investigation.
III. RESEARCH METHODS

1. Context

1) The Teacher

The teacher received his Ph.D. degree in Applied Linguistics at the University of Illinois at Urbana–Champaign, USA. His doctoral dissertation was about World Englishes. He studied general linguistics, computational linguistics, natural language processing, speech processing and the web-based language learning programming. He has been teaching English at a university for 9 years. His research interests are in CALL, WBI program development, and network-based language teaching (NBLT). In relation to teacher-initiated classroom research, he has little experience.

2) The Co-researcher

The co-researcher has a lot of experience of working with English teachers. She has been involved in coordinating and evaluating in-service teacher development programs. She also works with individual teachers, observing their teaching and supervising them. In the present research, she puts theories of clinical supervision into practice in the web environment.

3) The Students

As the course was among liberal arts, it was open to any student who wants to register for it. Table 1 shows the number of students who took the course at the second semester of 2005. It also reveals what their majors are. 36 among 76 students are English majors and the other 40 students are non-English majors.

<table>
<thead>
<tr>
<th>Major</th>
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<tbody>
<tr>
<td>English</td>
<td>36</td>
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<td>Non-English</td>
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<tr>
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<td>6</td>
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<tr>
<td>Natural Sciences</td>
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<tr>
<td>Social Sciences</td>
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<td>Business</td>
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<td>Engineering</td>
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<td>Arts and Design</td>
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<td>Laws</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>76</strong></td>
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All the students took Communicative English course, the compulsory English course the university provides. Among them 48 students took it for 4 semesters, 18 students for 3 semesters, and the other 10 students for 1 semester. The students’ self-assessment and their test results show that the students’ English proficiency level ranges from beginning to intermediate.

4) The Course

*English in the News Media* is an online course and is provided to undergraduate students. The course objectives are to develop students’ speaking, listening, reading and writing skills for communication, and to enhance their global awareness. A variety of learning tasks are given to help students achieve these goals. The students use the Internet to have access to electronic texts, bibliographical information, images, and online resources for news and other media coverages. They also use their e-mails and bulletin board system (BBS) for group writing projects and assignments. For this purpose, all the students are required to learn to use asynchronous computer mediated communication (CMC) skills.

Topics the course covers include international political issues, war, health, science and technology, education and so on. The criterion for the selection of the topic is its being the newest or latest, and timely. As part of the course work, students are required to participate in the online discussion on the materials provided each week with the students in Japan.

2. Data Collection Methods and Analysis Procedure

This section describes the methods used for collecting data and analyzing them.

1) The Research Structure

The present research adapts Kemmis and McTaggart’s (1988) model of action research, which consists of four steps of plan, action, observation and reflection. Figure 1 shows how the model works into a successive cycle. Each step has its own name and features, but not exclusive of each other in a whole cyclic system.
According to Figure 1, the present teacher-initiated action research starts when a problem is identified by the teacher. The teacher then devises actions and practices them in the classroom. Effects of the actions on learning and teaching are observed. These effects are reflected on as a basis for further planning. A new cycle starts with (a) concern(s) identified through the reflection.

2) Data Collection and Analysis Procedures

As shown earlier, each stage of the action research cycle states different purposes. The underlying premise for the research methods employed in this study is that different methods can be used to answer different research questions. To serve the purposes set in the research cycle, various methods were employed for collecting data. The first step was to identify (a) problem area(s), which the teacher needed to change. For the purpose,
the teacher invited his colleague who majored language teacher training and supervision to conduct this research in a collaborative way. She played a crucial role throughout the action research.

Baseline data for a research question was collected through questionnaire, online classroom observation and interview. The questionnaire survey was administered to see what students’ needs were. It was composed of closed and open-ended questions. The classes recorded on the weekly basis were observed by the colleague. The interview with the teacher was done to see what he wished or liked to change about his own teaching. The reason for collecting the data from such sources was that it was important for the participants to be aware of their own situation, and the data collected from different sources could provide some evidence which suggested explanations of the situation under investigation.

Having reviewed the initial data, the participants, both the teacher and his colleague, formed hypotheses on the problem areas identified. They devised a number of strategies for bringing about changes in those problem areas. Then the participants proceeded to gather information to test the generated hypotheses. They selected a range of techniques, which were of relevance to the questions under investigation and could incorporate readily into daily teaching. The investigation was not restricted to a specific method. Data were obtained from a variety of sources such as online classroom observation, teacher diary, questionnaire, locally developed tests, student work, and teacher evaluation on line.

The use of the various research methods is closely related to the way of improving the validity and reliability of the research by triangulating the data from various sources. To gather multiple perspectives on the situation under study, quantitative and qualitative data is triangulated. Although the term triangulation tends to be interpreted in different ways, its underlying principle is that we gain a richer and less subjective picture about the context under investigation than when we rely on one single data collection method.

The teacher and his colleague moved to making assertions about the research problems on the basis of the findings through the analysis of the gathered data. The responses from the questionnaires were analyzed using SPSS to see their frequency. The data from observation and diary entries was analyzed according to its saliency. Salient issues were those which appeared to be more prominent than others because of the manner in which they were related to the research questions addressed.
IV. RESULTS AND DISCUSSION

The findings are presented at the three levels: problem areas identified by the analysis of the baseline data, improved areas as results of taking actions, and aspects which the teacher’s awareness were raised about.

1. Problem Areas

The analysis of the collected baseline data through classroom observation, interview and questionnaire revealed some areas the teacher wished to improve. The areas which particularly concerned the teacher were categorized: more than subject knowledge, need for more writing activity and teacher feedback, individual difference, and ways of involving students in more practice.

1) More than Subject Knowledge

When the teacher started his teaching after gaining a doctoral degree in linguistics, he assumed that his academic background and linguistic knowledge would surely lead him to the way of being a good teacher. Looking back the past 9 years of teaching, he remarked:

I believed that I was an expert in my field, and my students benefitted from my teaching. According to the results of the formal teacher evaluation administered by the institution, my class was ranked the first level. I thought I deserved this. No one has mentioned about my teaching. I became complacent about my teaching.

There was a critical incident, after which he became vaguely dubious about what the evaluation results meant to his teaching. He described the critical incident in his personal log:

I had a chance to have a very open conversation with a student who attended my class. He said that he felt very sorry for not meeting my expectation, adding that he always appreciated my hard work on class preparation but it was too difficult for him to understand. He also added that other students who took my class agreed with him. After the conversation, I talked with several other students and found that they also agreed to his comments.
The teacher continued:

After that incident, I realized that I had never had time to look back on my teaching. I have just gone my way, trying to transmit what I knew about the subject to the class. I failed to build up the genuine communication channel with the students and to meet their needs.

It was timely that the teacher met the colleague, who specialized in teacher observation and supervision. They agreed to set up a collaborative research network and carry out a classroom investigation to improve the teaching.

2) Need for More Writing Activity and Teacher Feedback

A questionnaire survey was administered at the end of the course of the previous semester. The analysis of the student responses to some closed questions revealed that the majority of the students wanted to improve listening and writing skills, and to raise awareness of global issues. It was also found that the majority of the students thought that their listening skill has been improved, and global awareness has been raised after the course, but only a small number of the respondents thought their writing has been improved. The analysis of the open-ended questions also supported this. Some students said more writing activities should be provided. The analysis further showed that the teacher failed to provide the students with feedback on their work. One student pointed out:

There is no way to know what my weaknesses are, not to mention the progress I have made.

Another student noted:

I want to know which level I belong to. If the professor gives me comments on the assignment, it would be easier to know what areas I need to work on more than other areas.

There was one student saying he needed the teacher’s feedback desperately to improve his learning. He added that he did not mind whether the teacher criticized or praised his work as long as he provided feedback on his work.
The observer asked the teacher how he identified his students’ difficult areas and what kind of remedial work was given. The teacher admitted that he did not pay much attention to the issues due to time strain and the class size. He had to spend most of time for preparing the web class, and the class size was too large to provide individual students feedback.

3) Individual Difference

According to the questionnaire survey, about 60 percent of the respondents thought the level of instruction and assignment, and the amount of studying required were appropriate to their language level. The rest of the students said that the class was higher than their level. The finding supported that the class was composed of students with mixed-ability. One student pointed out the gap between the course and his own language level:

I thought my English was at the low-advanced level before I took this course. This course is too difficult to follow. Maybe I overestimate myself. I need to work harder than before to catch up.

There were some students who were worried about their grades because some of the course was too difficult for them to understand. Through the survey the teacher saw the need to design the course with careful consideration of the students’ different language levels.

4) Ways of Involving Students in More Practice

95 percent of the respondents said they watched each lecture once or twice on a weekly basis. Only 20 percent of the students watched it more than three times. Less than two percent of the students watched more than five times. Some students attributed their negligence to technical problems. One respondent pointed out that it was very difficult to listen the lecture repeatedly due to the complicated structure of the course materials. Another student complained that he was too demotivated when he was disconnected due to frequent technical problems. There were some students who confessed their passive participation. One said:

I simply delay watching lectures until I come to the last minute I can. I know that the lecture will be accessible on line at anytime I want. I can watch whenever I feel motivated .... This makes me too lazy to attend the lecture actively.
It was found that there was a gap between what the teacher believed about learning and what his students did. Through the personal conversation and the analysis of teacher logs, it was found that the teacher believed practice played an important role in language learning, emphasizing that it was the students who were responsible for their own learning. He expressed his depression about the gap.

2. Reflection on Actions

Among the problem areas, the teacher and his colleague gave priority to the issue of failing to meet the students’ need. They devised alternative strategies to solve the problem. This section reports the results of the application of the strategies. The analysis of the data from observation, questionnaire, teacher reflective logs and informal discussion reveals that the application of the strategies has generated a new problem, urging the teacher to move on to another cycle of the classroom investigation.

1) Strategies Devised

Due to the class size, it seemed almost unrealistic for the teacher to provide individual students feedback on their written work. The teacher intended to benefit students by incorporating characteristics of web-based instruction into his online class. By introducing group writing activity to his class, the teacher expected to solve two problems at the same time: to meet students’ demand for more writing and feedback. The teacher had the rationales for his making such a decision:

According to the theory, online learning environment can involve students in interaction and collaborative learning. I believe that group writing and peer feedback activities would provide them with an opportunity to interact and collaborate with each other. My students then will benefit from those activities.

Features of the process-oriented writing were also incorporated in group writing. They were introduced to help the students become aware of an important role of revising, and to encourage active group discussion in the writing process from brainstorming to evaluating drafts.

2) Reflection on Effects of the Strategies

The teacher and his colleague reviewed the effects of the devised strategies on
improving the situation under investigation. They analyzed the data gathered through observation, questionnaires and student feedback at bulletin board system.

Unlike the teacher’s expectation about online group writing, the mid-term questionnaire showed that the majority (over 55.0 percent) of the students were not satisfied about the group writing activity. Only a small percent of the students said they were satisfied with the activity they had. Their complaints were expressed at the open-ended evaluation of the questionnaire. The most frequently mentioned comment was concerned with low and uneven participation of group members in discussion. One student wrote:

Group discussion doesn’t seem to work in online. Some members in our group don’t react to the others’ opinion. Because we attend the lecture at different time, so there is no way to see and ask them what they think of the given topic. I think group writing can work only in the face-to-face classroom.

Another student pointed out that most students had little sense of belonging as a group member at the virtual classroom, in contrast to the traditional class.

The next most frequently mentioned complaint was about the unequal level of participation and contribution. One student described the problem her group had while doing the group writing task.

There are 8 members in our group. But only 2 or 3 students took an active part in the writing activity. It is a shame that we don’t have an opportunity to learn from each other. I guess most of the groups have the same problem as we do. This is not what I expect about group writing activity.

Among commonly observed problems of group work were group size, mixed level of proficiency and grouping method. Some student expressed their objection to group writing activity by suggesting the teacher replace it with individual writing activity. One student expressed his view at the bulletin board system:

We don’t know about each other and what contribution each one can make to the completion of the task. Group work doesn’t seem to be suitable at the cyber class. To do a group work effectively, the class should be a blended class. At this point there is no point continuing group writing activity. I think
we are not ready for group work at the cyber classroom. I suggest you assign individual writing task instead. Of course I understand individual task means too much work for you, but individual students will get much benefit from it.

The colleague also observed that group work didn’t go the way the teacher had expected. It became clear that the teacher was left with the problem of reorganizing writing task to accommodate his students’ need. The colleague wrote in her observation note:

> What has happened in group writing doesn’t seem to support the theoretical rationales which the teacher’s decision was based upon. Now the teacher and I need to sit down and examine what was wrong and what we can do to solve the problem.

The review of the data about effects of the devised strategy led the teacher to the point of starting a new cycle of the investigation, setting out an alternative strategy.

3) A Way Ahead

Having moved toward the new phase of the action research, the teacher and his colleague examined closely the problem areas identified at the first phase. They came to a tentative conclusion that group writing was not appropriate to the given context. The students’ need for more writing still remained unsatisfied. If individual writing task was assigned, the teacher would have too much burden of providing feedback. Considering feasibility, the teacher and his colleague devised a strategy which integrated writing with listening. According to the strategy, before listening to the main news, the students were asked to do some pre-listening task. The task was to write a short paragraph on the issue of the news. The word limit was given so that the teacher could manage to provide feedback. For the pre-listening task, the teacher opened a separate board where the students submitted their written work and the teacher gave comments to individual students.

The class observation after the application of the new strategy showed that more students became actively involved in writing than in the previous group writing activity. It was also found that the teacher’s immediate feedback motivated some students to be keen on revising their drafts before submitting their final output. The teacher mentioned
in an informal discussion on the effects of the task:

My students are not used to revising in writing. It is very satisfying that some students, in an effort to improve their work, rewrite their first drafts with reference to the teacher’s comments. A few students revise their drafts several times until they were satisfied.

Their satisfaction was shown in the final-term questionnaire. To the question asking what activity they think was the most helpful, almost half of the students (48.5 percent) said that the pre-listening task was the most effective of all activities they experienced. According to the formal teacher evaluation administered at the institutional level, the mean score of the students’ satisfaction with teacher feedback was between very satisfactory and satisfactory (the mean score 4.52 out of 5.00). To the open-ended question of the evaluation, some students said their writing improved through revising drafts with reference to the teacher’s feedback. One student wrote:

I have a sort of confidence about writing in English. I have enjoyed the process of improving my draft. The teacher was very spontaneous to my need for feedback. I appreciate his hard work.

The teacher and his colleague then move on towards a new problem identified through the comprehensive reflection on the effects of the new strategy.

3. Teacher Awareness

It was revealed that the teacher’s awareness was raised of two areas: the complex process of learning and teaching, and learning to teach. This finding was supported by the data gathered from sources such as the teacher’s personal logs, the colleague’s observation notes, e-mail correspondence and the informal interview.

1) Complexity of Learning and Teaching

While carrying out the classroom investigation, the teacher realized that a number of factors interacted in teaching.

I used to think students absorb, depending on their capacity, what is transmitted by the teacher. Through the close examination, I can see that
there is interaction operating between the students and me. My teaching behavior seems to interact with student characteristics like motivation.

He also pointed out that education is very much context-specific. He said in an e-mail to his colleague:

It is inappropriate to generalize research findings. The context where teaching and learning take place seems to limit the generalizability of the findings.

The teacher recognized that his perspectives on teaching have changed. He wrote:

When I believed teaching was to transmit what I know, I had no hesitation in making decisions about teaching. Everything was simple and straightforward. But now as I get to understand the complexity of teaching, and there are a number of things involved in it, I take into account many factors. It usually takes me more time to make a decision than before. It’s not easy but worthy.

To the question whether this change in his attitude toward teaching meant the loss of self-confidence, he replied:

Let me put it this way. I become more careful about my teaching behaviors and their influence upon students’ learning. I think it’s a sign of improvement in teaching.

It was found that the teacher became aware of a variety of student learning styles. In the personal log, he jotted down:

I think I simplified learning styles. Maybe I used to impose my students my preferred learning style, which I believed the most effective. I come to see that the students do not learn in a way I expected or imposed. They learn in their own way, which I need to aware of.

The teacher and his colleague had a discussion on the roles expected to the teacher in online learning. They agreed that the online learning environment requires the distance educator to play new roles in terms of lesson organization, instructional methods,
preparing for remote resources, designing visuals and so on. Among these the teacher emphasized the analysis of distance learners’ needs in setting up the instructional goals:

Distance learners have different needs from those in the traditional classroom. Their needs should be identified and met... Among issues to address in the planning process are 'Who are the learners?', 'What is the essential content?', and 'What teaching strategies and media should be used?' I learned that the knowledge about the learners can yield a more productive environment. It can also aid the teacher in overcoming the separation from students.

The teacher went further to recognize the important role of individual learner attributes in successful online education. He said:

The emphasis points to the individualized instruction at a distance setting. The focus needs to be on creating optimal learning conditions for each individual.

From his experience the teacher added that the distance educator needed to work in cooperation with the staff in the student support center. He emphasized their spontaneous support was crucial for effective learning to take place at a distance setting.

2) Learning to Teach

The on-going reflection helped the teacher become aware of the teacher’s learning to teach. In an e-mail to his colleague, he reviewed:

Looking back the observation and discussion process, I think I was a student to learn how to teach. It gave me a wonderful opportunity to critically look into my daily teaching. Otherwise, I would get complacent, very satisfied with my teaching, and my teaching would become routinized.

It was recognized that observation became a tool for learning to teach. The teacher described his experience in the personal log:

Observation became a kind of raw material of my learning at the virtual classroom. I used it to learn more about my own online class teaching.
He added that letting his own class observed by an outsider was not easy, but it was rewarding experience.

On one hand, to have an outsider in my classroom was obtrusive even at the virtual classroom setting. Anybody who had an experience of being observed could understand how I felt. On the other hand, observation could bring issues that I concerned myself with. The observation by the colleague helped me draw objective perspectives on my teaching. A good rapport between my colleague and I made this possible.

The teacher put a great emphasis on the point that observation provided a starting point for critical reflection upon his teaching.

4. Discussion

The results of the data analysis are discussed at two dimensions of the questions raised at the outset of the research: benefits of teacher-initiated classroom investigation to teacher awareness-raising, and to student learning.

1) Teacher Development through Action Research

The findings of the action research on online learning support that a teacher’s active participation in his own research project increases his commitment to change in teaching. In this study the teacher took the initiative in an effort to solve the problems he identified. This gave him an impetus to the reflection on his online teaching and the change of his teaching strategies. Then the change pointed to improvement in online teaching; this prompted further changes in the teacher’s attitudes and beliefs. Similarly, Bartlett (1990) claims that teachers’ individual reflection on teaching is not only a means for deeper understanding of complexity of teaching activity and self-evaluation, but it also leads to a further change in attitudes. Nunan (1989), in this vein, suggests that teachers’ exploration of their own classrooms should lead them from practice to theory and back to practice.

The findings also reveal that the teacher links theory and practice through his exploratory teaching. It is assumed that the action research provides the teacher an opportunity to inquire into theoretical principles on online learning through practice. This supports Elliott’s (1986) emphasis on the concept of theory in practice.
... knowing how to perform educational activities like teaching... cannot directly spring from a knowledge of theoretical principles about practice, since these principles themselves derive from the analysis of practice. They are abstractions from the practical knowledge embodied in concrete performances.

The present study shows that action research is characterized by its specific and immediate outcome directly related to practice in the teacher’s own context. It also reveals that action research is seen as one approach to integrating theory with practice. Wright (1990) suggests that action research can provide a means for teachers to examine the effects of new ideas implanted. Chang and Beaumont (2000) also argue that action research should grow out of the problems and issues which confront teachers in their daily work and the outcomes of such research therefore feed directly back into the classroom. That is, as the present study shows, action research may contribute to the overall research base, but in essence it is more concerned with teacher development than it is with the generation of hard data.

2) Benefits to Students

It has been in most cases that effects of action research have been discussed in terms of a teacher’s professional development with relatively less attention to students’ learning. The present research findings justify the claim that action research serves to increase teacher effectiveness by solving specific problems or issues arising out of practice. As shown in this study, at the heart of the teacher’s devising alternative strategies is an effort to maximize the students’ online learning by optimizing the given learning environment. Such an effort can be seen as a teacher’s active involvement in accommodating classroom practices more closely to students’ expectations and needs. As Brindley (1984, quoted in Richards & Lockhart, 1994) claims, such an effort comes from the assumption that learners may bring with expectations concerning not only the learning process in general, but also concerning what will be learned in a particular course and how it will be learned. As the present study shows, learners’ beliefs may be different from the assumptions underlying teachers’ classroom practices. It is also shown that the investigation into learner expectations encourages active learner participation, and gives direct feedback to the teacher seeking to bridge the gap between student expectations and teacher practices. Richards and Lockhart (1994) emphasize the importance of bridging the gap through the teacher’s active participation in reflective teaching by saying the consequences of not doing so are likely to be misunderstanding and mistrust on the part
of both teachers and learners.

As the present study shows, the involvement of students in the self-assessment process can have a positive effect on increasing awareness on their own online learning process. Tudor (1996) observes that self-assessment plays a central role in the development of learners’ self-directive abilities. In this study, the students’ voices on the online classroom under investigation provided useful information on effectiveness of newly devised strategies, but also an opportunity to reflect upon their learning styles and strategies as a distance learner. Enhanced awareness, as emphasized earlier, becomes a starting point for a more effective and successful learner in online learning. This is similar to Holec’s (1987) concept of the learner as manager. He suggests that good language learners are those who are capable of assuming the role of manager of their own learning.

V. CONCLUSION AND IMPLICATIONS

This study shows that action research is a useful means of doing research in online education. The findings of the English language teacher-initiated action research reveal that the development of critical awareness can be encouraged by reflective teaching through the online classroom investigation. It is also recognized that change in language teachers’ attitudes towards online classroom practices can have a positive effect on their students’ learning in online. From the findings, it is suggested that one viable way of bridging the gap between theory and practice is to encourage teachers who manage online classroom to adopt a research orientation to their own classroom practice, and to engage in research projects. That is, online class teachers constantly investigate, reflect on, and interpret the data of the classroom in order to make their teaching and their students’ learning more effective. This points to an emerging trend to broaden the scope of professional development by providing online class teachers with opportunities for engaging in educational research. The finding of this study suggests that online class teachers should be encouraged to take more responsibility for their own learning about teaching, and their role should be placed at the center of any attempt to improve their learning and the social setting within which it occurs.

The study suggests that priorities and values of people of a particular context should be considered in setting up teacher development programs in online. Teacher-initiated classroom research in online education should be designed to solve and meet teachers’
needs and difficulties with specific answers and suggestions. The importance of the values and expectations of a particular culture does not necessarily mean online class teachers’ working in isolation. It is recommended that in conducting action research in a given online situation one should consider how far assumptions made in language teacher development will help English language teachers in other settings to further their personal and professional growth, and how far those assumptions will need to be modified in other local initiatives. What can be done is to form collaborative groups within the situation. Through a wider sharing of experience can effective development take place. It is further suggested that efforts should be made to set up a network for dissemination of the research results in the given context. The research findings need to be further investigated, developed and substantiated through detailed systematic examination of a large body of varied language classroom data.

In terms of external validity, action research is under criticism because it is usually carried out in a certain context as a form of case study. It is usually less rigorous in terms of design and methodology than other educational research. Action research, one type of applied research is usually conducted by a teacher to aid decision-making in the local school. Action research focuses on the solution of day-to-day problems at the local level. In some cases, only a single group or an individual is involved in the study. Nevertheless, action research, combined with what is known from the research literature, provides a useful and viable approach to making offline or online educational decisions at the local level. It focuses on solving an immediate problem rather than focusing on adding to the body of knowledge.

REFERENCES


Key words: web-based instruction(WBI), online learning, action research, teacher development, reflective teaching, observation

Author(s): Jung, Kyutae (Hannam University, 1st Author): kjung@hannam.ac.kr

Chang, Kyungsk (Korea Institute of Curriculum & Evaluation, 2nd Author): kschang@kice.re.kr

received: May 10, 2006

accepted: July 15, 2006
This article describes how a Web-based speaking test (WBST) is developed using Visual Basic 6.0 from needs analysis to evaluation in language test development. The speaking test development process was applied to develop the Teaching Assistant Language Exam (TALE) for international Teaching Assistants at American colleges. In the design phase, several design considerations and their validation concerns that are specific to WBSTs are discussed and the feasibility of the development tool is examined along with the validation considerations through considering several rival test delivery forms. In development phase, this study illustrates test administration procedures and the test software development process. In implementation phase, revision points on test administration process and the software improvement were gathered and reflected into cyclical test development. The usability of appropriate technologies along with ethical approaches to test development was considered in evaluation phase.

I. INTRODUCTION

WBSTs have been in need of their development and use in language assessment due to their various benefits such as powerful diagnose functions for test-takers’ self-assessment, easy feedback provision, fast rating and report, and convenient test score storing and retrieving (Kim, 2003; Kim 2006; Roever, 2001). However, Roever (2001) pointed out that web-based speaking test development is difficult because it requires
cutting-edge technologies. In particular, developing a sound recorder on a web-based speaking test is a serious challenge. In the sense, there are few manuscripts for web-based speaking test development in the language testing field. In this article, the researcher seeks to fill the gap.

The TALE test is a speaking test for graduate International Teaching Assistants (ITAs) at the University of Illinois at Urbana-Champaign (UIUC). The researcher and test development team developed the test and proposed it as an alternative to the Speaking Proficiency English Assessment Kit (SPEAK), which is a current English speaking proficiency screener at UIUC. The team consisted of seven members: the researcher, three ESL teachers, and three students preparing for the SPEAK test.

This study provides detailed descriptions of design and development considerations and technological revision points were gathered and reflected into cyclical revision process of the test development process. This study was proposed as a guideline for language testers to develop WBSTs by opening dialogues about the use and application of computer technologies in educational assessment and language education.

II. LITERATURE REVIEW

Designing test tasks and test interface should be considered to develop a WBST for a specific purpose (Roever, 2001). The design consideration factors are based on the following previous literature: a) task complexity and difficulty, b) test delivery forms, c) types of web-based tests, d) good interface design, and e) software development.

1. Task Complexity and Difficulty

Task complexity and difficulty are related to construct validity of a language test (Fulcher, 2003). Messick (1989) defined construct validity as an integrated evaluative judgement of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment. Based on the definition, some scholars (e.g., Brindley & Slatyer, 2002; Fulcher, 2003; Kim, 2006) attempted to control the test conditions related to test-takers’ perceived task complexity and difficulty which could affect their performances. The conditions are a) speech rate, b) preparation and response time, c) text script for audio-video support, d) content knowledge requirement in problem-solving, e) and f) Webb’s (1998) depth of knowledge.
First, speech rate was controlled in order to avoid an unintended construct (listening skill) (Brindley & Slatyer: 2002 Fulcher, 2003). Kim (2006) controlled the speech rate of two narrators in the TALE test ranged from 80 words per minutes (wpm) to 100 wpm. According to Brindley and Slatyer’s (2002) study, a fast speech rate was 200 wpm.

Second, Wigglesworth (1997) and Stansfield (1989) found that test-takers’ performances were improved with some amount of preparation time (e.g., 30 seconds or 45 seconds). Kim (2006) set a two minute response time for every task, but test-takers were asked to produce at least a one minute response. His decisions were made following the needs analysis results. In fact, the participants for the needs analyses asserted that a response time ranging from 30 seconds to 90 seconds was too short to complete their answers. If they had uncompleted responses, this made their test anxiety increased. However, Stansfield (1989) pointed out that although examinees were given a response time of more than three minutes in an oral test, the quality of their responses was not improved. Hence, lengthy response is irrelevant to test performance.

Third, Kim (2006) provided text scripts for the narration in the test with spoken English, referring to the ‘aurality issue’ proposed by Brindley and Slatyer (2002). They intended to avoid the measure of test-takers’ listening skill and provide authentic contextualized tasks to test-takers in spoken English.

Fourth, Kim (2006) attempted to minimize test-takers’ content knowledge required for problem-solving. He provided audio-visual supports as well as examples for the tasks in the new test. In particular, two video clips were provided for Tasks 5 and 7 in the TALE test.

Fifth, Webb (1999) applied his depth-of-knowledge (DOK) model to control task complexity in relation to task difficulty. The DOK levels indicate learners’ cognitive loads in problem-solving for tasks in learning. DOK level 1 is the recall stage as the surface level (i.e., recalling a fact and some definitions in one-step procedure); level 2 is the skill or concept stage (i.e., using information or conceptual knowledge to approach a problem in two or more steps); level 3 is the strategic thinking stage (i.e., requiring of reasoning and development of a plan or a sequence of steps with some complexity and requiring students to use concepts to solve non-routine problems); level 4 is the extended thinking stage (i.e., requiring an investigation and time to think to process the multiple conditions of the problem and requiring students to make several connections to solve the problem).

2. Test Delivery Forms

Test developers should consider several test delivery formats for speaking tests such
as Oral Proficiency Interview (OPI), Telephone tests, Simulated Oral Proficiency Interview (SOPI) with tape-delivery format, Video Oral Computerized Interview (VOCI), and Web-based Speaking Test (WBST). Kim (2006) provided the following positive and negative aspects of each test delivery format as reported in Table 1.

<table>
<thead>
<tr>
<th>Delivery form</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPI (face-to-face)</td>
<td>1. Authentic conversation can be produced. 2. Well-trained interviewers can adjust task difficulty to examinees’ speaking proficiency.</td>
<td>1. Many well-trained interviewers are needed for test administration. 2. Authentic conversation is probably not produced.</td>
</tr>
<tr>
<td>Telephone</td>
<td>Authentic conversation can be produced.</td>
<td>1. Many well-trained interviewers are needed in test administration.</td>
</tr>
<tr>
<td>Telephone</td>
<td>Well-trained interviewers can adjust task difficulty to examinees’ speaking proficiency. It is cost effective.</td>
<td>2. Examinees may feel difficulty of understanding interviewer more than in the face-to-face test.</td>
</tr>
<tr>
<td>SOPI (audio-taped)</td>
<td>1. Mass administration is possible, because well-trained interviewers are not needed in test administration. 2. Quality of ready-made tasks may be high. 3. Raters can listen to the answers repeatedly so as to produce accurate rating.</td>
<td>1. Test situation may not be authentic or a real conversation. 2. Some examinees dislike this test form.</td>
</tr>
<tr>
<td>VOCI (Video-taped) or d-VOCI</td>
<td>1. Mass administration is possible because well-trained interviewers are not needed in test administration. 2. Quality of ready-made tasks may be high. 3. Tasks in the d-VOCI are more authentic than those in the SOPI. 4. Raters receive more information such as non-verbal cues. 5. Examinees may have adequate time, adaptive topics, and difficulty selection in case of low-stakes tests. 6. Examinees may receive rich feedback from experts.</td>
<td>Test situations may not be authentic or real conversation. Early investment on equipment is high. Test situation may not be authentic or real conversation. Computer experts are needed in development process. Some examinees dislike this test form.</td>
</tr>
</tbody>
</table>
3. Types of Web-Based Tests

Roever (2001) pointed out that there are many advantages to utilizing Web-based technology in speaking test development such as mass administration of the test without interviewers (cost-effective), high quality ready-made tasks with rich audio-visual support, examinee adaptive topic, difficulty selection, fast and convenient operation, a cost-effective feedback provision, flexible test type switching, and flexible testing time and place selection. But this technology for speaking tests is the most advanced. Hence, it is difficult to build a web-based speaking test (Roever, 2001).

There are several options of WBSTs. Each has advantages and disadvantages. Kim (2006) briefly reviewed the followings:

1) Synchronous WBSTs

WBSTs can be administered in a synchronous way. The framework of this test may be the same as the OPI. With the face-to-face test mediation, an interviewer assesses a test taker’s speaking proficiency via a video or audio conference or chatting system.

2) Asynchronous WBSTs

WBSTs can be also administered in an asynchronous way. Likewise following the SOPI, test takers are asked to record their responses via the microphone connected to the computer. These responses are delivered to the raters via the Internet.
3) Low-Stakes Tests or Low-Tech WBSTs

As a low-stakes test, WBSTs can be designed to provide test-takers’ diagnostic information. Most of the testing practice occurs on the client side, not the server side. Stated differently, security is not an issue. Test-taker authentication or cheating does not matter in this situation because answers of the test items can be revealed.

4) High-Stakes WBSTs or High-Tech WBSTs

WBTs could be used as high-stakes tests. Test-taker authentication, item exposure, response delivery, stability of computers and network should be highly considered. Storing test items are prohibited on the client side computers and the answers of the items are not revealed on the client side. To achieve the high security of test items and response protection, cutting-edge technologies should be carefully selected.

4. Good Interface Design

Fulcher (2003) asserted that it is critical to avoid construct-irrelevant variance which test-takers can face while taking a computer-based test (CBT). A poor test interface on a computer screen in which the test-takers feel uncomfortable or lose directions in the CBT may hinder them from their best performance and threaten appropriate interpretation of test scores (Fulcher, 2003). When it comes to the WBT situation, the interface design could become a critical confounding problem with the use of cutting-edge technology.

AgeLight LCC (2001) is a useful Internet resource to provide some principles about a good interface design. First of all, among many principles, "ease of use" might be most important. This rule concerns the provision that users should be able to access the testing system without any extensive training. To enhance users’ motivation, test developers should be concerned with consistency through the test screens. In addition, web designers and developers must expect general usability of the interfaces they produce. They are advised to consider the points following the guidelines provided by AgeLight LCC (2001):

1. Consistent design across the whole web site
2. Computer screen resolution and size
3. Connectivity and Internet speed
4. Error messages
5. External links opening new browser windows
6. Page size and download speed
7. Tables and frames
8. Language, reading level, & terminology
9. Color easiness of text and background
10. Text amount in one screen
11. Audio-visual aids
12. Easy navigation and directions

6. Software Development

Roever (2001) pointed out that technology selection should be cautious as regards the WBST development process. Test developers should first be concerned with the feasibility of adopted technologies more than non-web-based CBT development process. Security issues are usually the most important factors in high-stakes situations and this stakes decision may be the primary criterion used in selecting the technology. But the issue was not much of a concern in a low-stakes situation.

The reason why the WBSTs are difficult to develop is that they require a sound recording function on the web, which is one of the most difficult technologies, because the function asks for advanced programming skills or expensive sound recording software. If test developers want to use low cost solutions, they should be skilled computer programmers who are able to code one of the programming languages such as Java, Visual Basic, C or C++, PHP, ASP, CGI, or Perl. But if their projects are well-funded, the testers should hire computer programmers and web designers or purchase high cost sound recorders to record examinees’ responses. Kim (2006) suggested the following principles in selecting feasible technologies in developing a WBST:

1. Standard HTML
2. No JavaScript on the client site
3. No cookies in the client browser
4. No heavy graphics or interactive media formats
5. System robustness - no system or software crashes
6. High performance and reliable software and hardware
7. High scalability for multiple user access and data storage
8. Security - no unauthorized access during user authentication and internet data transmission
9. Adherence to standard hardware and software.
III. DESIGN CONSIDERATIONS

1. The Test Development Team

The researcher constructed the test development team in summer 2005. The team consisted of seven members. The researcher was project leader and leading developer. He was also programmer. The other members were content developers. Three ESL teachers had been teaching the courses designed for the SPEAK test preparation. Three students were test-takers of the speaking test and graduate students who wanted to be teaching assistants at UIUC.

2. Benchmarking on the POEPT

The researcher benchmarked the Purdue Oral ESL Placement Test (POEPT) because an on-line sample test was offered to prospective TAs and Prasad (2003) provided detailed rationales and descriptions about the development procedure, justification of its content, and use of technologies of the test in his dissertation whereas there were rare online speaking tests for ITAs. Purdue university provides a sample practice test software downloadable for candidate ITAs to practice the test by installing it on their local computers. The researcher downloaded and installed the software on his machine and practiced the test. He evaluated content, design, and technology use of the test. The results of the benchmarking of the practice test showed (a) high content and context relevance to academic settings, (b) frequent use of audio-visual aids to provide content knowledge, and (c) use of web-based technologies (Active Server Page, a product of Microsoft and Microsoft Access, a database software of Microsoft).

However, there were some points to be improved: (a) confounded language skills – for example, a 10 minute lecture without script may demand test-takers’ listening skill instead of speaking skill (Brindley & Slatyer, 2002), (b) unprofessional interface design such as inconsistent color scheme, and (c) high task difficulty for some tasks.

3. The Theme and Characteristics of the Test

Inspired by the benchmarking on the POEPT, the test development team decided the theme of the new test as “a TA’s daily routine in academic settings.” The team designed tasks for the new test following the theme.

The team also determined to make the test as function-based so that each task was created in the distribution of language functions. The language functions the development
team selected for the new test were: opening class, giving advice, explaining or describing a concept, answering questions, asking questions, closing class, describing homework, describing a quiz or test, introducing the course, giving feedback, giving advice for a task (lab in particular), giving directions for an activity, getting attention, making announcements, and giving directions (instructions) for class technology use (see Kim, 2006 for more details).

4. Topics and Contexts Related to Test-Taker Characteristics

Following the theme of the test (i.e., a TA’s daily routines in academic settings), the development team decided to use three contexts of academic settings: the classroom, the TA office, and the TA meeting. They, then, brain-stormed some candidate topics for the contexts based on the needs analysis results. The topics for the classroom were: introductions of a lesson, defining terms in test-takers’ fields, explaining about exam grades and score distributions, an announcement about TA office hours. Some candidate topics for the TA office were: advising students, defending students’ challenges on given test scores, recommending similar courses. For the TA meeting situation, possible topics were: classroom management skills, seeking advice from peers about dealing with students disturbing the class, negotiating teaching schedule with peers.

5. Threats to the Construct Validity of the Test and Controlling Task Complexity and Difficulty

Based on Messick’s (1989) definition, the team gathered the potential threats to the construct validity of the test, which were a) examinees’ high test anxiety, b) inadequate preparation and response time for test tasks, c) difficult opinion questions regardless of examinees’ discipline, and d) examinees’ low computer familiarity. The team also considered noise in the testing environment and examinees’ fatigue during the test in terms of test-administration reliability.

Of the threats above, the team attempted to control the following test conditions related to test-takers’ test anxiety which could negatively affect their performance:

1. Narrator’s speech rate - from 80 words per minutes (wpm) to 100 wpm
2. Preparation time: one minute for every task
3. Response time: two minutes for every task (test-taker should answer at least one minute for every task)
4. Text scripts for the narration
5. Watching video clips twice, but no script
6. Minimizing test-takers' content knowledge requirement – rich audio-visual supports as well as examples for the tasks
7. Controlling task complexity in relation to task difficulty based on Webb’s (1999) depth of knowledge – e.g., DOK level 1 (recalling) as the easiest for Task 1, 3, 9, and 10; DOK level 1 or 2 for Task 2, and 4; DOK level 2 for Task 5, 6, and 8; DOK level 3 as the most difficult one for Task 7.

6. Test Delivery Form

Based on the literature review, the team decided to select a WBST as a test delivery form. The decision was to fit to the needs of both the school and test-takers along with the mandate of the TA speaking test at UIUC. One of the important mandate is the number of test-takers (i.e., about 700 international students annually). Both stakeholders requires an accurate assessment tool as well as convenient and time-saving administration and delivery method of the test. In addition, the development team decided not to have the TALE test adaptive, even though there is one of the positive aspects of WBST above. The reason is that an adaptive test needs amount numbers of test items (Fulcher, 2003).

7. Good Interface Design

Based on the guideline of AgeLight LCC (2001), the researcher selected the following test design consideration factors for the test design. With the rules regarding test-takers’ perceptions, the researcher designed a protocol interface design as a sketch on paper.

1. General Satisfaction with the whole interface design
2. Consistency for the whole consideration
3. User friendly Text font face
4. User friendly Text color
5. User friendly Text font size: at least 12 point
6. User friendly Text allocation: mostly in the center
7. User friendly Text amount: not much
8. User friendly Color scheme: blue tone
9. User friendly Audio-visual aids: relevant to the content
10. User friendly Navigation: simple and easy metaphor
11. User friendly directions
8. Test System and Development Tool

The researcher designed an operational model of a sample web-based speaking test system shown in figure 1. Theoretically, at least four independent file servers (i.e., a data storage server, a real server for audio-visual supports, a test bank server, and a backup server) are needed and an independent secured web-server is also needed to provide graphic user interfaces to examinees, raters, and task writers. However, the model is an ideal one and the data storage servers could be merged into a file server which saves test data, audio-visual support for tasks, and task bank for the test.

The test system consists of three sub-systems: a testing system, a rating system, and an item writing system. More specifically, the testing system is for examinees to take the test. The rating system is for teachers to rate the examinees’ responses and the item writing system is for the teachers to write items and build a test set for the test. To build the system, the researcher was concerned with both hardware and software concerns.

1) Hardware Concerns

The test system is comprised of two categories: client-side and server-side. In the client-side, three web-browsers for examinees, teachers, and item writers. The clients access to the test system through their web-browsers. the researcher gives some brief
description for both server-side and client-side hardware.

(1) Server-Side

The test system requires at least four servers. The web-server is to provide information retrieved from the servers, when the information is requested from the client-side web-browsers. The data server is to provide test information to the test takers during test operation when the test information is requested from the test takers’ web-browsers. The real server is to provide animated data to the clients including audio and video data. The database is for instruction and information to the teachers and item writers who access and update the data into the database. It does not need to be stand-alone. The data-backup machine should be an independent one for safety.

(2) Client-Side

The client-side machines are the home computers or lab computers of examinees, teachers, and item writers. Hardware requirements are flexible for teachers and item writers. But examinees should not have any problem to take the speaking test. That is, animation given to them should be normally played. In particular, sufficient memory and high speed Internet are important for the examinees to take tests.

2) Software Concerns

(1) Client-Side

Two major browsers are Internet Explorer and Netscape. But Netscape has been born again as Mozilla. The latest web-browser of the Mozilla cooperation is “Firefox.” They should be equivalently working in taking tests, building test sets, and writing test items.

(2) Development-Side

Sound recorder on the web-based test requires special computer programming. It is challenging technology for test developers who are not programmers. Considering usability of appropriate technologies to develop the WBST, the researcher selected Visual Basic (VB) 6.0, a Microsoft product, because he had experience to use it and the design tool provides user-friendly graphic user interface for programmers to design and develop test interface and several functions which would be operated in the test.

MySQL of Microsoft cooperation is utilized as the database because it is appropriate for amount capability of saving and retrieving data and free database engine. MS Access could be a temporary solution, but it is not for multiple users. It is for personal use.
To publish the WBST on the Internet, PHP or ASP can be used for data retrieving from the data servers. Both of them are open source so that the researcher can adopt them into the project with no cost.

III. A WBST DEVELOPMENT

1. Task Framework

Based on the design considerations above, the team developed tasks for the test. First, they developed a task framework applied to every task creation. The framework consisted of the following three elements: context setting, task assignment, and reinforcement of the assignment with some examples. Table 2 presents the framework for a task in the TALE test.

<table>
<thead>
<tr>
<th>Task template</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Insert a picture related to this situation]</td>
</tr>
<tr>
<td>(Narrator: audio clip – file name) Question number [x]</td>
</tr>
<tr>
<td>[Context setting-up for the task]</td>
</tr>
<tr>
<td>[Tasks]</td>
</tr>
<tr>
<td>[Directions] You have 1 minute preparation time. When you are ready, start recording your answer by clicking the record button or wait for the prompt. You will have 2 minutes to answer the question.</td>
</tr>
<tr>
<td>[Insert a timer]</td>
</tr>
<tr>
<td>(Preparation time: 1 min)</td>
</tr>
<tr>
<td>[A reminder for recording] Now start recording your answer. Please click the record button to save your answer.</td>
</tr>
<tr>
<td>[RECORD button]</td>
</tr>
<tr>
<td>(Narrator: audio clip – file name) Stop the recording,</td>
</tr>
<tr>
<td>[Transition if needed] (Narrator: audio clip)</td>
</tr>
<tr>
<td>[Directions] Please click on the “next” button to move to the next screen.</td>
</tr>
<tr>
<td>[NEXT button]</td>
</tr>
<tr>
<td>(Turn the screen to the next automatically in 5 seconds.)</td>
</tr>
</tbody>
</table>

2. Task Development

The development team firstly developed the following three warm-up questions:
1. How are you today? (10 sec)
2. How’s the weather today? (10 sec)
3. What is your department and college? (10 sec)

They, then, developed ten tasks using the following content analysis template shown in Table 3.

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Content Analysis for a Sample Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category</td>
<td>TA office context</td>
</tr>
<tr>
<td>Topic</td>
<td>Advising a student about graduate school application</td>
</tr>
<tr>
<td>Context</td>
<td>An American classroom</td>
</tr>
<tr>
<td>Key words</td>
<td>TA office, video, office hour, advice, graduate school</td>
</tr>
<tr>
<td>Function</td>
<td>Advising</td>
</tr>
<tr>
<td>DOK level</td>
<td>Level 2 Skill/concept</td>
</tr>
<tr>
<td>Input source</td>
<td>Audio-clip, text prompt</td>
</tr>
<tr>
<td>Speech type</td>
<td>Monologue</td>
</tr>
<tr>
<td>Visual aid</td>
<td>Picture:</td>
</tr>
<tr>
<td>Preparation time</td>
<td>1 minute</td>
</tr>
<tr>
<td>Response time</td>
<td>Maximum 2 minute, but required one minute</td>
</tr>
<tr>
<td>Number of tasks</td>
<td>One task</td>
</tr>
<tr>
<td>Context setting-up</td>
<td>Now you are at your TA office during office hours. Watch a video clip about a TA’s advising in a TA office setting. Near the end of the semester, one of your students comes to your office hour and wants some advice about going to graduate school.</td>
</tr>
<tr>
<td>Directions</td>
<td>You have 1 minute preparation time. When you are ready, start recording your answer by clicking the record button. You will have 2 minutes to answer the question. Now start recording your answer. Please click the record button to save your answer.</td>
</tr>
<tr>
<td>Specific tasks</td>
<td>Give him/her some advice about the topic.</td>
</tr>
</tbody>
</table>

3. Audio–Visual Support

Intending to provide rich audio–visual support to examinees, the researcher developed audio and video files and two video clips in the test. Two native speakers of English in the team participated in recording the audio narration at a Linguistic lab at UIUC in fall 2005. A female narrator recorded the part of authentication, introduction, and warm-up questions, while a male narrator recorded the remaining parts for all the tasks. For the video clips, four ITAs participated in creating them for two tasks.

4. Test Administration Procedure

With the tasks developed in this phase, the researcher designed the following test
administration procedure. Descriptions about the procedure are as follows.

1) Login to the Computer at Testing Place

The test administrator (the researcher) asks examinees to login to a computer at the testing place and gives an introduction to them. For the login process, the examinees need to use their UIUC NetIDs and passwords (active-directory NetID and password) for test security. Then, they are asked to open the TALE test software by clicking the software shortcut on the screen.

2) Check Microphone and Audio Volume

Before the examinees start taking the test, they must check their microphone and audio volume. These are tested by using the sound recorder built in the Windows operating system. The examinees are given the following directions to open the sound recorder: ‘Start’ -> ‘Programs’ -> ‘Accessories’ -> ‘Entertainment’ -> ‘Sound Recorder’.

3) Login to the TALE Test

Once the front screen appears on the center of the computer screen, the narration is automatically activated. The narrator guides the examinees to go through another authentication process by typing the NetID and password given to them in order to identify them and save their speech. When they click the ‘Next’ button, the screen goes forward to the next screen. All the narration is given in text.

4) Introduction

The narrator gives the examinees an introduction about the context of the test, time limits, the scoring rubric, and a brief explanation about the record function. When it is finished, the examinees are asked to click the ‘Next’ button to move to the next screen.

5) Warm-Up

The narrator explains about the record function in detail for safe data recording. Then, the examinees are requested to answer to three short questions as a warm-up. They are given just 10 seconds for each question. To save their responses, the examinees should click the record button on the sound recorder below the questions. When the time is up, the recorder is automatically stopped. In the end, the examinees are asked to click the ‘Next’ button to move to the next screen.
6) Context Set-Up for the Entire Test

The narrator sets up the entire context of the test for the examinees to participate in the role-play as TAs at a college-level academic setting. When it is finished, they are required to click ‘Next’ button to move to the next screen.

7) Tasks for the Three Contexts

The narrator (audio and text) reminds the examinees of the test situations again and assigns tasks, examples, and visual supports (pictures). They are given one minute preparation and two minutes response time. A clock is shown below the task prompt. A reminder for the record button is provided to the examinees before they begin to speak. In the end, they are asked to click the ‘Next’ button to move to the next screen. If they do not react to it, the screen is automatically moved to the next in 5 seconds.

8) Transition Between the Contexts

When each context is finished, the narrator guides the examinees to the next context. For example, the narration for a transition to the TA office is, "Your class is over. Now, let’s go to your office."

9) Wrap-up and Logout

The narrator wraps up the test and gives information about test score report. The examinees are then asked to logout from the TALE test.

5. Test Software Development

VB 6.0 provides a user-friendly interface for the researcher to design test interface using pre-loaded objects from the library built-in the VB 6 program or from the free library on the Microsoft Developer Network (MSDN) in the Microsoft web-site (Microsoft, 2006). The program was greatly feasible for developing a sound recorder for a WBST. It was also handy to use the database connection and the local network connection using the design tool. In the end, with an experienced programmers’ consultation, the researcher could overcome the technical difficulty in developing the sound record functions provided by the library in VB 6.0.

However, an important external mandates in developing the test was the limitation of local technical supports. The school did not support web-based database technologies from
the school servers so that the researcher decided to deliver the test without a local network and server to save the examinees’ speech. Hence, the form of the TALE test was selected as an installable program on local computers without network to the server. The use of VB 6.0 in developing the test, the researcher could obtain the following benefits:

1. No worry about test security,
2. No worry about data delivery failure,
3. No worry about slow loading time and timer reset due to heavy size of audio–visual aid files, which are common on the Internet causing slow network speed or traffic, and
4. Easy control of screen size, screen resolution, and display rate for the computers at testing places.

During the test operation, examinees’ speech data were saved on the local machines. After the test was finished, the researcher temporarily saved all the data on a USB flash drive and then transferred them to a secured data storage server. Note that this is not the permanent solution, but the use of local network and database should be eventually achieved. It was not a technological demand because the researcher could upgrade the speaking test system to a web–based version using the local network or the Intranet and the database. Using the ASP or PHP, server–side script languages which provide the web–based database technologies on the Internet, the code developed by VB 6 in the test could be published with no difficulty.

In developing a deliverable test software, a design checklist for consistent test interface design was developed and applied to the entire test interface. The checklist contained the following elements: a) titles, b) text font–face, shape, size, color, and margin, c) screen mobility, start–up position, and size, d) button size, font–face, shape, size, and color, e) picture size and resolution, f) border width and padding, g) background color, h) timer for preparation and response time, and i) sound recorder size, font, color, and location.

Finally, this test software was installed on one computer at the researcher’s office and on twenty five computers at a computer lab at UIUC which is a multi–purpose computer lab to test the functions of the TALE test.
IV. IMPLEMENTATION

1. The Function Check of the Test Software

Six subjects participated in the function test. It was to check whether the test software operated normally on computers and to gather evaluative feedback from the participants before main test. For the test operation, the minimum requirements of the computer is as follows:

1. Windows operating system: Higher than Windows 98
2. CPU: Pentium 2, 500 mega Hz
3. Memory: 128 mega bytes memory
4. HDD: 1giga bytes
5. Monitor: 15 - 17 inch
6. A Headset and microphone

The participants provided the following feedback:
1. The need to create a tutorial for using the sound recorder: all the participants had technical difficulties while using the sound recorder and asked detailed information instruction before the test started;
2. The need to divide introduction into two pages due to amount of texts on the screen: participants pointed out that there was too much text on the introduction screen and they favored it to be divided into two screens;
3. The need to make the sound recorder bigger and make the record button outstanding in order to get examinees’ attention: participants also pointed out that the sound recorder was somewhat small so that it was hard to recognize the record function. They also wanted to have the record button in distinctive red color;
4. The need to remind examinees to click the record button on the sound recorder: participants frequently forgot to click the record button to save their responses.

2. Test Software Revision and Installation at Testing Place

Based on the feedback, the researcher revised the test software. In the revision, a tutorial was placed at the beginning of the test so that examinees practiced the functions of the sound recorder. They practiced the three functions of the recorder: recording, rewinding, and stopping.

The software was delivered to the server administrators of the testing place to be
tested and installed on the computers at computer labs. Once the software installation was approved, they installed it on the computers at testing places.

3. Preparation for Main Test

Based on the findings and feedback from the pilot test, the researcher reinforced the following points into the test administration procedures:

1. Detailed introductions about the test
2. Detailed instruction about the use of the sound recorder
3. Detailed description about score reporting
4. Double-checking of the headset and microphone
5. Reminding examinees of clicking the record button during the test
6. Use of scratch paper during the test
7. No use of English Dictionary during the test
8. Restriction of the number of examinees per test slot to avoid noise.

V. EVALUATION

It is necessary for language testers to evaluate their approaches and behaviors in test development and administration with regard to ethics in language testing. First of all, all the test development processes were carried out strictly following the human subjects approval process in this study. The researcher provided detailed information to the development team members and all of them voluntarily participated in the test development and administration with their agreement by signing the consent letter. They could withdraw their participation during the test development and administration following the human subjects protection regulation. In fact, one participant in the development team and one participant in the function test withdrew their participations at their will. In addition, all the test development processes in this study did follow the code of ethics of the International Language Testing Association (2000).

Second, the usability of technologies employed in the test development should be justified according to appropriate criteria. This is to avoid any bias such that examinees could perform their full English language proficiency regardless of their gender, ages, nationality, cultural and racial difference, and social economic status (Kunan, 2000; Kim, 2006).

Third, the researcher suggested the following technological revision points as a part of
the evaluation:

1. A large size item bank is needed for test security;
2. Updating tasks should be easy for item writers and the development team need many item writers from several majors;
3. Constructing test sets should be easy for testers. It is not appropriate that VB technology is applied to test set construction because it requires high computer experience. Hence, it is necessary that testers use a graphic interface using web-based database technologies to create test sets;
4. For test administration, an independent server which supports web-based database technologies is needed to save and retrieve examinees’ responses; and
5. In the end, a standard setting process is needed to make the test an alternative to the SPEAK if possible.

VI. CONCLUSION

In the propensity of requiring speaking assessment in high-stakes large-scale test such as iBT TOEFL, the need of WBSTs has been growing. Filling the gap of few WBST development manuscripts, this article provided theory-driven descriptive guidelines in a WBST development process. This article also showed the templates of content of the test tasks, test delivery form selection, test administration procedure, good test interface design, transparent revision process of test software, and appropriate technology selection.

However, this study has some limitations with regard to the content of the test and usability of technologies. The content of the test was suggested along with the criterion of high relevance to ITA’s real life. The topic broadness is controversial in language testing (Kim, 2006). The usability of the technologies to develop the WBST in this study is locally confirmed. Due to the logistical issue, the test was operated on local computers instead of on the Internet.

Nevertheless, language testers could adopt the suggestions of this study into developing WBSTs for diverse purposes such as examinees’ proficiency or diagnostic assessment.
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Unpublished doctoral dissertation. Purdue University.

Key words: web-based speaking test, test development, Visual Basic 6
Authors: Jung Tae Kim(University of Illinois at Urbana-Champaign): Kim.jungrtae@gmail.com

received: May 10, 2006
accepted: July 15, 2006
Korean Sixth Grade Elementary School Students’ Meaning Negotiation in Task-based CMC

So Young Kim (Seoul Youngdo Elementary School)


This study examines task-based, synchronous computer-mediated communication (CMC) among sixth grade elementary school students. The research specifically explores whether task type (conversational, jigsaw and decision-making) has an effect on (a) encouragement of meaning negotiation, (b) selection of meaning negotiation devices, and (c) student participation and response. Two experiments, drawing on differing forms of synchronous CMC (chat room and messenger), were performed for this purpose. The results showed that, in CMC, decision-making task types are a more productive stimulus to active meaning negotiation among students. Among the five meaning negotiation devices set forth by Long (1983), students seemed to be heavily dependent on clarification requests and self-repetitions. In regard to their attitudes toward each task type, students seemed to enjoy tasks involving cognitive challenge, as demonstrated by their preference for conversation and decision-making tasks over jigsaws. Finally, the degree of student preparation and participation differed depending on the task types.

I. INTRODUCTION

The importance of communicative competence has been emphasized in Korea since the 7th National Educational Curriculum reforms elucidated communicative competence as one of its independent goals. Unfortunately, however, the method of teaching English in the
elementary school context in Korea doesn’t yet correspond to this goal. The most fundamental problem appears to be an unfavorable EFL setting, where chances for learners to try out what they have learned in class are minimal; there are not ample face-to-face (FTF) English learning opportunities.

In this context, computer-mediated communication (CMC) can provide one means to solving the problem by offering second and foreign language learners new opportunities for real interaction (Hanson-Smith, 1997). Through the adoption of CMC, learners are better able to overcome the lack of resources for applying the target language, a typical problem in an EFL setting. Among the different network-based devices, text-based online chatting is considered a useful instrument for improving learners’ production skills because of its immediateness, which mirrors oral interaction.

In regard to text-based online chatting, the issue concerning task type factors needs to be investigated more thoroughly. It is agreed that the use of tasks provides learners with more opportunities to produce the target language, to modify interaction, and to expose learners to more comprehensible input (Gass, 1997; Mackey, 1999). However, it is not yet agreed which tasks are more suitable for inducing meaning negotiation.

The purpose of this study is to investigate which task types are most beneficial to developing language competence in CMC. Three task types (conversation, jigsaw and decision-making) were examined to discover which cases produced the most active meaning negotiations, which meaning negotiation devices were more often utilized, and which tasks were of most interest to the sixth grade elementary school students.

II. LITERATURE REVIEW

1. Meaning Negotiation and Second Language Acquisition

1) Importance of Meaning Negotiation

Meaning negotiation refers to any type of problem-solving process where participants collaborate with each other to achieve successful communication, either by providing finely tuned input or by producing pushed output. Nunan (1999) states this idea by saying, “meaning negotiation is the interactional work done by speakers and listeners to ensure that they have a common understanding of the ongoing meanings in a discourse” (p. 311).

This meaning negotiation process has been argued as important for promoting learner comprehension of the target language (Pica, Young & Doughty, 1987). Stevick (1981)
points out that the negotiation process requires consistent awareness and attention to the interaction to achieve a successful result. Such a process guides learners to utilize their metalinguistic awareness (Gass & Selinker, 1994). Pica (1994) suggests that the ongoing occurrence and eventual identification of difficulties during the meaning negotiation that takes place in interaction stimulates learners to explore and try out interlanguage in order to overcome communication problems. Also it is said that repetition of what has been said during interaction, which usually goes hand in hand with the negotiation process, promotes language acquisition because it highlights the concept through different syntactical structures, but with the same meaning.

In sum, meaning negotiation is important not only because it guides learners to deliver their message, but also because it encourages learners to continue paying attention to the discourse. Consequently, this is expected to develop communicative competence.

2) Meaning Negotiation Devices

Meaning negotiation skill is an ability to understand and to use meaning negotiation devices for effective interaction. It is believed to bring about learners’ language development by putting pressure on them to experience the integrated process in which opportunities to get comprehensible input and produce comprehensible output come during interaction (Bygate, 1987). Long (1983) highlights five meaning negotiation devices: confirmation checks, clarification requests, comprehension checks, self-repetitions and repetitions of other’s utterances.

The first, confirmation checks, are used to ensure that the listener correctly hears or understands what the speaker says. They are formed with rising intonation questions, with or without a tag. This device usually involves repetition of all or part of the interlocutor’s utterance.

Second, clarification requests are used when the listener needs help in understanding what the speaker has said. They mostly take such question forms as tag questions and wh-questions, or they begin with “I don’t understand,” a request for an explanation or a paraphrase of what was previously stated.

The next device is comprehension checks. These are used to prevent a communication breakdown by checking the listeners’ understanding immediately following the speakers utterances with such questions as “Right?” and “OK?”.

Self-repetitions, the fourth type, refer to all instances where the speaker repeats what they have previously said, whether it is a partial repetition, a complete repetition, or a repetition in which modification is made.
Last, repetitions of other’s utterances are defined in the same way as self-repetitions, however, in this case a speaker repeats what has previously been said by their interlocutors with falling intonation, or repeats it partially or exactly as a lexical item. This also includes expanded forms of a speaker’s own utterances.

2. Computer-mediated Communication and Second Language Acquisition

1) Meaning Negotiation in Computer-mediated Communication

Computer-mediated communication (CMC) reflects human-to-human interaction through computers in networks. CMC has been reported to help induce large amounts of comprehensible input and output that result from meaning negotiation (Blake, 2000; Pellettieri, 2000; Toyoda & Harrison, 2002). Chun (1994) argues, CMC provides students with the opportunities to acquire and practice more varied communicative proficiency. Warschauer (1996) reports the appearance of even more complex syntactic and denser lexical patterns in CMC compared to that of FTF conversation. He concludes that the online medium facilitates such patterns by allowing greater opportunities to study incoming messages and to carefully plan responses, whether written or oral, among native speakers (NS) or non-native speakers (NNS). In short, CMC is reported to make it possible for participants to become involved in virtual meaning negotiation after thoughtful deliberation.

2) Text-based Online Chatting

Computer-mediated meaning negotiation can take place through various applications. Basically, there are two types of CMC: asynchronous CMC and synchronous CMC. In asynchronous CMC such as e-mail, voice mail, bulletin boards and voice bulletin boards, participants are not involved in simultaneous activity. In comparison, in synchronous CMC, interaction takes place in real time through “Multi User Domain-Object Oriented (MOOs),” Internet Relay Chat (IRC), audio & video conferences and artificial intelligence.

Among the various CMC tools, the advantages of text-based online chatting are widely supported by previous studies. Empirical evidence shows that text-based online chatting can facilitate the learners’ negotiation of meaning in a similar fashion to FTF negotiations (Blake, 2000; Pellettieri, 2000). In addition, it can improve the collaborative construction of knowledge of learners (Warschauer, 1996), the quality of written discourse (Sostillo, 2000) and learners’ opportunities to use the target language (Toyoda & Harrison, 2002). Learners can consult not only previous conversation texts by scrolling up the
screen, but also an online dictionary or another learner as they write their messages (Warschauer, 1999). Other research (Blake, 2000; Chun, 1994) reports that network-based communication engages learners in more frequent language practice and increases their confidence and enthusiasm, while providing a non-threatening classroom environment, which leads ultimately to learner autonomy. Most of all, dynamic interaction based on instantaneous message transmission endows chatting with a unique feature. Due to this simultaneous conveyance, some researchers in second and foreign language learning regard synchronous CMC as a promising tool for language learning (Blake, 2000; Pelletieri, 2000; Toyoda & Harrison, 2002).

In sum, text-based online chatting helps learners to ease anxieties through non-FTF situations, engages them in a dynamic meaning negotiation process in real contexts, and encourages them to expand their output. In spite of these benefits, Pelletieri (2000) emphasizes that some task types are more beneficial than others in encouraging and promoting computer-mediated negotiation.

3. Task Type Differences

Tasks refer to problem-solving activities that learners carry out in response to a linguistic stimulus; they are communicative activities which focus primarily on interaction (Pica, Kanagy & Falodum, 1993). Many researchers in FTF communication have noted the importance of identifying task types as critical variables that affect interaction in a classroom activity; therefore, several studies on the effect of task type difference on the meaning negotiation process have been conducted. Generally, two-way information-gap tasks, thanks to their obligatory nature and the way that the information is shared, seem superior to other task types in promoting interaction (Foster, 1998; Pica & Doughty, 1986). Pica et al. (1993) claim that jigsaw tasks, one type of information-gap, can elicit the largest amount of meaning negotiation, followed by decision-making. Nakahama, Tyler, and van Lier (2001), however, found that conversational activities provide learners with more challenging language practice than do information gap tasks.

The effects of task type on negotiation in CMC have not been agreed upon, in spite of general agreement that text-based online chatting can induce meaning negotiation as much as, or more than, FTF communication. Pelletieri (1999) demonstrated that one-way tasks elicit greater meaning negotiation, indicating the opposite results of previous studies in oral interaction. In Smith (2003), decision-making tasks were shown to be more suitable for drawing out active meaning negotiation when compared with jigsaw tasks in text-based online chatting. On the other hand, some evidence in CMC supports findings
found in research on mainstream FTF communication. Blake (2000) finds that jigsaw tasks are more effective than interview tasks in promoting the negotiation process. Lee (2002) also demonstrated that information gap tasks are a more productive stimulus than free conversational tasks for inducing students’ active communication.

To conclude, generally, two-way required closed tasks, such as jigsaw tasks, seem generally to be the most appropriate tool for inducing greater meaning negotiation. However, in an alternative view, conversational tasks can also be effective in the sense that they allow learners to try out their language freely. Decision-making tasks are likewise noted as one of the best possible ways to involve learners participation. Therefore, the issue of which task type is most suitable for language learning in CMC context needs to be further investigated.

III. METHODOLOGY

1. Research Question

The present study explores how meaning is negotiated among sixth grade elementary school students in three different task types: conversation, jigsaw and decision-making tasks, in text-based online chatting. For this purpose, this study attempts to answer the questions posed below, and to suggest implications for task-based CMC.

1. Does task type affect how Korean sixth grade elementary school students negotiate meaning during text-based online chatting?
2. What strategies do Korean sixth grade elementary school students use to negotiate meaning during text-based online chatting?
3. How are the participation and interest of the participants differentiated across task types during text-based online chatting?

2. Settings and Participants

This study was carried out with students in the sixth grade in an elementary school located in Seoul. The study consisted of two experiments, with a one-year interval. The first experiment, focusing on conversational tasks, was conducted in 2004 and the second experiment, investigating jigsaw and decision-making tasks, was conducted in 2005. There were far fewer meaning negotiations in the initial study than expected. For this reason, another experiment was designed based on an additional two task types to determine
whether or not the result of the first experiment could be confirmed with two other task types. In both experiments participants took part in text-based online chatting sessions that were designed as an after-school review session of their regular English class. Participants performed these tasks at home through networked personal computers.

In Experiment I, data from nine students (five boys and four girls) were analyzed. All nine students volunteered for this experiment. In Experiment II, another five boys and four girls were chosen. In order to select students who had the closest English ability to the chat participants in the initial study, the same 30-minute pencil-and-paper test and the same 25-minute listening test that were used for the school midterm exam in the spring semester in 2004 were used again in 2005. Additionally, the advice of the teacher who had

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Note. ps = participants; G = grammar, R = reading, S = speaking; 2/w = twice per week, 3/w = three times per week.
taught the sixth graders in the fall 2004 semester was crucial in choosing second round participants with the most similar profile to the previous ones. All 18 participants were between the age of 12-13 and were in the same grade: they were chosen from the same population for reasons of convenience. The participants’ profiles are provided in Table 1.

The participants were split into six groups of three based on their after-school schedule. Participants selected a date for text-based online chatting among a list of choices provided by the researcher.

3. Procedures in Two Experiments

Text-based online chatting tasks were assigned 27 times in total across the two experiments. The first nine out of 27 activities given in Experiment I were categorized as conversational tasks. These initial activities were based on the three topics found in the school textbook over a three-week period. The remaining 18 online activities, which belonged to Experiment II, were equally divided into jigsaw tasks and decision-making tasks, and were conducted throughout a 6-week period. For this second experiment the same topic order and group composition were used as in Experiment I.

In both of the experiments, each group participated in an online meeting on different days, once a week. Sessions for the pre-survey, practice and the post-survey were required independently of the online chatting session. During the practice session subjects received 30-minute-long instruction on how to use the chatting tool and how to communicate in the CMC context. Additionally, they were asked to practice typing in English beforehand. Each chat meeting began with the instruction for that day’s task in Korean. The students were reminded during the instructions to try to communicate in English. The researcher joined each of the online meetings in order to observe the participants and to guide them when they encountered difficulty, and to save the chat log.

It was decided that students should be given a flexible amount of time to complete the tasks. This decision was made based on the findings of a study on small group interactions with primary schoolers learning English (Lee, 2000). In this research, students’ conversation did not show any greater development in terms of the meaning negotiation process when they were forced to race against time. In fact, students who were given time pressure tended to switch to Korean, their L1, to complete the task as quickly as possible.
4. Materials

Two synchronous chat tools were differently applied for both experiments: chat room for Experiment I and messenger for Experiment II (As there were difficulties in saving chat logs in the chat room, another text-based online chatting tool, a messenger, which allows users to save chat data more easily, was introduced). Another positive feature of a messenger program is that the indicator bar shows whether or not other participants are in the process of responding; as a result, the participants can decide when to pose a new question, or can encourage those who remain silent to actively join the chatting. This function was not present in the chat room, thereby causing communication blocks at times in Experiment I. Both tools, however, provided the same context for the experiments.

5. Task Types

Three types of two-way communication tasks were used for this study: conversation, jigsaw, and decision-making. Three specific tasks based on three chapters in the textbook during the experiment period were used in each task type. All tasks were created and designed to reflect the context and the key expressions found in the textbook.

In conversation task, students are normally given a topic of appropriate interest and level to discuss freely. In this study, group members were given three or four questions one-day in advance and were asked to voluntarily prepare their responses prior to the chat. Jigsaw tasks, the second type, require participants to give and receive information, as they have different pieces. In this research, two types of jigsaw tasks were implemented. In the first, the table-filling type, members were asked to fill in blanks through an information exchange. In the second jigsaw type, a strip story, four out of 12 sentences were randomly distributed to participants. Students were required to work on combining the sentences in the correct sequence in order to make a possible story. Finally, decision-making tasks focus on not only pooling the members’ suggestions on a specific problem, but also inducing their final decision based on voluntary contribution to interaction. For this type participants were given an individual worksheet fully explaining a problem in advance and were encouraged to think of their own solutions prior to the chat session. In all the task types, the degree to which they prepared for the interaction and the degree to which they participated in the communication were up to the members. Additionally, to ensure legitimate gaps, members were prohibited from sharing their

3) Nate (a local portal site) Club Chat Room: http://club.nate.com.epracticeclub
4) Nate on Messenger 3.0
worksheets and/or opinions in advance for all tasks.

6. Data Collection and Analysis

The data from this study was collected using five means: chat logs, students’ journals, interviews, researcher’s journals and pre- and post-surveys. Based on the chat logs, the link between task types and negotiated interaction was investigated. First, the number of total turns was counted. The number of negotiated turns based on the five categories of negotiation devices was then separately totaled. When the speaker changed it was counted as one turn, regardless of response length. In the passage below the numbers 1, 2, 3, 4, 5 and 6 indicate the number of the turns. The initial utterance is called a “floor turn” and utterances 1 through 5 are classified as off-task discourse, unrelated to the task. All the off-task discourse was excluded from the counting. Therefore, utterance 6 was accepted as the starting point of task-related conversation.

1. A: Hello~
2. B: Are you ready?
3. C: >ㅁ<
4. A: no
   A: Okay
5. B: okay...
6. C: What do you Think the good one of spring?

Second, the number of negotiated turns and negotiation devices in each task were counted. They were categorized into one of the five devices: confirmation checks, clarification requests, comprehension checks, self-repetitions and repetitions of other’s utterances.

While observing each chat session the researcher kept a written journal on the progression of the interaction. In this journal the researcher described the contribution of participants and noted how they performed in relation to the given task in the CMC context. If the researcher noted anything unclear or unusual in her journal, interviews were performed with the individual participants for clarification and further investigation. Immediately following the student chats, participants were normally asked to spend additional time chatting in Korean with the researcher.

5) The definitions of “floor turn” and “off-task discourse”, along with the idea that off-task discourse is not included in counting, are based on Smith (2003).
Upon completing the online chat session participants were asked to write a journal, or post-chat report, based on the format provided by the researcher. The purpose of this report was to examine participants’ degree of preparation, level of participation, and overall self-awareness of their own language learning process by making them respond to carefully designed questions. In Experiment II, for example, participants were asked to express their perceived difference between jigsaw and decision-making tasks.

In addition to the above, two kinds of surveys were given. A pre-survey was distributed before the chatting session and a post-survey was given after the completion of the entire session. In the pre-survey, participants were asked to answer general questions about such things as their previous learning experience and interest in English. In the post-survey, the questions were more focused on the specific process of online chatting.

IV. RESULTS AND DISCUSSION

1. Meaning Negotiation in Text-based Online Chatting

Research question 1 addressed whether or not task type variable affects the meaning negotiation of sixth grade elementary school students in the context of text-based online chatting. The results show that task types are a significant factor in the degree to which sixth grade students negotiated for meaning.

Table 2 shows the converted number of speech turns calculated by the running time (30 mins.) of interaction in each group across all the tasks.

The decision-making task produced the greatest number of turns, with a mean score of 106.80, while the jigsaw task yielded the lowest, with a mean of 96.02 (Table 2). Based on the results, a two-way analysis of variance (ANOVA) was performed to see the effect of task type on speech turns. The results are provided in Table 3. Task type was shown significant as having a main effect ($F(2, 18)=6.787, p<.05$). This demonstrates that a certain task type produces more speech turns than others during the same amount of time.

6) The number of speech turns were reestimated by the running time of 30 minutes because the time taken in each task type and in each group showed differences. Conversational task-based activities were generally finished around within 30 minutes. In jigsaw types and decision-making types, by contrast, the gaps among the groups were big. It took from 20 to 45 minutes in jigsaw activities, and from 13 to 60 minutes in decision-making activities.
[Table 2] Speech Turns per 30 Minutes by Task Type

<table>
<thead>
<tr>
<th>Topic</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>G1</th>
<th>G2</th>
<th>G3</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Con</td>
<td>100</td>
<td>85.2</td>
<td>98</td>
<td>100</td>
<td>112</td>
<td>108</td>
<td>118</td>
<td>114</td>
<td>102.86</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>94.40</td>
<td></td>
<td></td>
<td>106.67</td>
<td>111.62</td>
<td></td>
<td>118</td>
<td>104.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>8.03</td>
<td></td>
<td></td>
<td>6.11</td>
<td>7.85</td>
<td></td>
<td>7.85</td>
<td>9.99</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jig</td>
<td>94</td>
<td>103.5</td>
<td>97</td>
<td>84.67</td>
<td>94</td>
<td>87.43</td>
<td>101.20</td>
<td>96.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>98.17</td>
<td></td>
<td></td>
<td>88.70</td>
<td>101.20</td>
<td></td>
<td>101.20</td>
<td>96.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>4.86</td>
<td></td>
<td></td>
<td>4.79</td>
<td>1.39</td>
<td></td>
<td>1.39</td>
<td>6.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>108</td>
<td>104.5</td>
<td>108</td>
<td>117.6</td>
<td>94.62</td>
<td>115.2</td>
<td>103.5</td>
<td>106.29</td>
<td>103.5</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>106.83</td>
<td></td>
<td></td>
<td>109.14</td>
<td>104.43</td>
<td></td>
<td>104.43</td>
<td>106.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>2.02</td>
<td></td>
<td></td>
<td>12.64</td>
<td>1.61</td>
<td></td>
<td>1.61</td>
<td>6.76</td>
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<tr>
<td>total</td>
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<td>101.50</td>
<td>105.75</td>
<td></td>
<td>105.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>7.32</td>
<td></td>
<td></td>
<td>12.18</td>
<td>6.15</td>
<td></td>
<td>6.15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Con = conversational task, Jig = jigsaw task, Dec = decision-making task; Topic 1 = season, Topic 2 = birthday, Topic 3 = job.

[Table 3] Two-way ANOVA Result for Speech Turns

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>TYPE III</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic</td>
<td>2</td>
<td>168.999</td>
<td>84.499</td>
<td>2.011</td>
<td>.163</td>
</tr>
<tr>
<td>Task Type</td>
<td>2</td>
<td>570.410</td>
<td>285.205</td>
<td>6.787</td>
<td>.006 *</td>
</tr>
<tr>
<td>Topic × Task Type</td>
<td>4</td>
<td>590.896</td>
<td>147.724</td>
<td>3.515</td>
<td>.027 *</td>
</tr>
<tr>
<td>Error</td>
<td>18</td>
<td>756.375</td>
<td>42.021</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p< .05

The ratio of negotiated turns to total turns is shown in Table 4 in order to make the data from all groups comparable. In this way, it is possible to determine the relative amount of negotiation that occurred in each task-based online chatting session. A chi-square analysis was performed to show the relation between the negotiated turns and the non-negotiated turns across the task types. Results show a significant difference between the negotiated turns and the non-negotiated turns across the task types, $X^2(2,2857)=17.12$, $p=0.0002$* (Table 4).
Table 4: Negotiated Turns by Task Type

<table>
<thead>
<tr>
<th>Task Type</th>
<th>Negotiated Turns</th>
<th>Non-negotiated Turns</th>
<th>Total N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conversational</td>
<td>17.96%</td>
<td>82.04%</td>
<td>941</td>
</tr>
<tr>
<td></td>
<td>n = 169</td>
<td>n = 772</td>
<td></td>
</tr>
<tr>
<td>Jigsaw</td>
<td>21.45%</td>
<td>78.55%</td>
<td>853</td>
</tr>
<tr>
<td></td>
<td>n = 183</td>
<td>n = 670</td>
<td></td>
</tr>
<tr>
<td>Decision-Making</td>
<td>25.59%</td>
<td>74.41%</td>
<td>1063</td>
</tr>
<tr>
<td></td>
<td>n = 272</td>
<td>n = 791</td>
<td></td>
</tr>
</tbody>
</table>

χ² (2,2857)=17.12, p=0.0002*
* p< .05

As Table 4 shows, there were a significantly more meaningful proportion of negotiated turns in interaction for decision-making tasks (25.59% compared with 17.96%-21.45%) than there were for the other two task types. In addition, the results of multiple comparison conducted using Tukey’s HSD procedure with a .05 nominal significance level, revealed that the higher percentage of negotiated turns elicited by the decision-making task is due to task type. Both comparisons of decision-making tasks with the other two tasks were statistically significant for each of the negotiated turns (conversational vs. jigsaw: χ² (1,1794)=3.4635, p=0.0627; conversational vs. decision-making: χ²(1,2004)=16.9232, p< .0001*; jigsaw vs. decision-making: χ²(1, 1916)=4.4670, p=0.0346*).

In summary, task type was revealed to be a significant factor when considering the effects on meaning negotiation. In particular, decision-making tasks were significant in inducing the greatest number of speech turns, as well as the greatest number of negotiated turns. Interestingly, the conversational task produced the fewest negotiated turns, even though it produced a greater amount of speech turns than the jigsaw task.

These results are consistent with Smith’s (2003) research on written communication that found that learners produce a significantly higher percentage of negotiated turns in decision-making tasks than in jigsaw tasks. As Smith (2003) claimed, the reason why decision-making tasks produce more negotiation can be explained in that the participants view their role in communication as equal and necessary for task completion. He added that the linguistic interaction in jigsaw tasks seems to be perceived as less salient for task completion. Another previous study (Bearden, 2001) on text-based chatting, shows that jigsaw tasks do not provide significant opportunities for meaning negotiation, as the various messages during jigsaw tasks may be understandable from context. This relatively low need seems to negatively affect the degree of spontaneous desire for...
adjustment. On the contrary, when learners work on conversational and decision-making tasks, they view accuracy in the target language as instrumental for task completion. This perception leads to spontaneous participation, often resulting in negotiated interaction, especially during decision-making tasks where the goals are clear.

The fact that decision-making task type is perceived as being more difficult than the jigsaw type also supports this result. Pelletieri (1996) found that difficult tasks promote more negotiation than easier ones. However, in this sense, the result might be differentiated, if cognitively more challenging jigsaw tasks were given, or if jigsaw tasks were given in a more interesting way.

The fact that conversational tasks were relegated to third most frequent in the percentage of negotiated turns from second most frequent in the total number of speech turns seems to result from its ambiguity in regard to goal-orientation. Brown (2001) explains the characteristic of conversation, “historically, conversation classes have ranged from quasi-communicative drilling to free, open, and sometimes agenda-less discussions among students” (pp. 267–268). As a result, it seems difficult to reach a conclusion about the effectiveness of this task type.

2. Meaning Negotiation Devices in Text-based Online Chatting

Research question 2 addressed which strategies the sixth grade students use to negotiate for meaning during text-based online chatting. The five meaning negotiation devices used in each task type are illustrated in Table 5. They are ranked according to frequency.

<table>
<thead>
<tr>
<th>[Table 5] Frequency and Degree of Meaning Negotiation Devices</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>Con</td>
</tr>
<tr>
<td>Jig</td>
</tr>
<tr>
<td>Dec</td>
</tr>
</tbody>
</table>

Note. Con = conversational task, Jig = jigsaw task, Dec = decision-making task; self = self-repetitions, cla = clarification requests, con = confirmation checks, others = repetitions of other’s utterances, com = comprehension checks.

According to Table 5, the participants were overwhelmingly dependent on the three
devices of self-repetitions, clarification requests and confirmation checks. Self-repetitions and clarification requests were dominantly used in conversational tasks (self=44.38%; cla=37.28%) and jigsaw tasks (self=45.36%; cla=33.33%). Decision-making tasks produced results much different from the other two types, showing a different tendency. One major difference is that self-repetitions, which ranked the first among the other two task types, were used much less as a negotiation strategy, coming in at third. In addition, the proportion of self-repetitions is relatively low in decision-making tasks (Con=44.38%; Jig=45.36%; Dec=26.10%). One key characteristic of a decision-making task might be used to account for this difference: the participants need to continue checking whether or not they follow the speaker in order to reach a consensus in decision-making tasks.

The following are examples from both experiments that illustrate how the participants utilize each meaning negotiation device. Self-repetitions were used to help the listeners get a better understanding of what the speaker was trying to say. The most common form of self-repetitions is correcting errors or mistyped words. Example [1] shows how expanded self-repetitions clarify the meaning of the word “hot,” changing what initially seemed ambiguous into comprehensible input.

[1] A: What do you think the spring bad?
   B: I don’t know ▼▼▼
   C: I think it’s weather is hot...
   C: little bit
   B: weather is hot → sommer bad
   B: okay.

In example [1], student C said “it’s weather is hot” to let students A and B know what is unpleasant about spring weather. Apparently, student B wanted to make it clear that it is always hot in summer, not in spring. However, student C was quick to add “little bit” to clarify what he originally intended. He realized his error before student B’s response. By contrast, clarification requests are made by the listener to get the accurate form of input and to confirm what the speaker intends to say.

Example [2] shows how the negotiation process started from a clarification request. Here students B and C seek clarification about what student A has said. As a consequence, students B and C are provided with the correct form of the original sentence, comprehensible input.
A: And last, my brother’s is May, 5th, a children’s day.
B: ??
C: write clearly please..
A: ₩ is 5 ta
C: ???
A: ₩
C: I can’t understand...
C: A, 똑바로 다시 쓰라니깐!!! (A, write the sentence clearly again!!!)
A: And last, my brother’s is May, 5th, a children’s day.

Clarification requests were often employed when a listener didn’t know the word meaning. When clarification was sought for a word meaning, it was typically explained and confirmed in Korean. In the interview, all the participants answered that it was difficult to explain word meanings in English and that it took time. They worried about whether their attempts at explaining something in English might result in another communication block. Thus, they reverted to Korean.

When a speaker made a sentence in which they were uncertain of the structure they used comprehension checks, mostly in Korean, to see whether the receivers understood them. Example [3] supports this observation. It is evident that dependence on Korean keeps the participants from experiencing more meaning negotiation, resulting in fewer opportunities for practice.

[3] A: and fall have warm at first fall(앞쪽의 가을) (early fall)
   B: I don’t like coll.
   B: coll -> cool
   C: hey guys -0- decide by majority~~(다수결로 정하다_-_-)
      (Let’s decide by majority_-_-)
   A: okay

Participants failed to use the device of repetition even when they received correct input from the listener. A newly given word or structure was acknowledged with a minimal “yes” or “thank you” instead. Two examples, [4] and [5], demonstrate this pattern.

[4] A: my mother want be young... 변호사
   B: Ah~ a lawyer?

[5] A: And last, my brother’s is May, 5th, a children’s day.
A: thank you

[5] A: this birthday I invite my friend fifteen
B: fifteen...
C: fifteen...
A: yes

Student A in examples [4] and [5] received the correct form of the word from student B in example [4], and from students B and C in example [5]. Student A recognized what the errors were, however, they responded in a passive way by saying “thank you” and “yes.” In an interview Student A stated that they didn’t want to waste time typing in the word again because the word remained on the monitor. This reflects one of the unique characteristics of text-based communication. The information appears on the screen; therefore, mistakes are more easily noticed and are corrected not only by the writers themselves, but also by other listeners. However, this also seems to make students reluctant to repeat each other’s utterances. Though the ability to access previous logs is one of the strongest benefits of CMC (Warschauer, 1999), this feature also seems to paradoxically prevent learners from practicing the items because they exist and can be reviewed whenever the learners want. In this case the researcher was interested in whether Student A would remember the new word and use it in other situations in which it was required. Unfortunately, though, no such instances were witnessed.

Another characteristic of using meaning negotiation devices in CMC was that ideas and feelings were often delivered in a paralinguistic way, similar to the gestures and facial expressions used in FTF communication. Example [6] shows that a clarification request was made with the emoticon ‘o_o/’ that represents a “face with left hand raised to ask a question.” Student C used the emoticon to signal that she did not understand the context.

[6] A: I have mina usually does in..
B: What is mean?
A: umm...
C: o_o/
C: I don’t understand, o_o
A: I know Mina usually does in season
The findings from the logs present how sixth graders use meaning negotiation devices and how they participated in online chatting. The sixth graders in this study can, and indeed did negotiate for meaning using the same type of negotiation strategies.

3. Sixth Grade Students' Attitude across the Task Types

All participants practiced text-based online chatting in English for the first time and expressed satisfaction with it. Both how they prepared for the online chatting and how much they liked each task type were researched through their post-chat reports and interviews in research question 3. In the case of conversational tasks, the results are independently explained because this was only included in the 2004 experiment.

First, the participants showed different attitudes in regards to the method and the degree to which they prepared for each task. In general, they seemed to prepare in advance what they were going to say for the online interaction in conversational tasks. All students mentioned the possibility and the importance of preparation for conversational tasks before and during the tasks in their reports as shown in one participant’s report below.

It was very exciting. I think it will be more and more interesting. I would be nervous with the text-based online chatting, so I wrote down what I would say during the chat. It was an excellent idea. I’ve decided to make more preparation for the next chat.

However, the participants in the second experiment, when asked about the decision-making tasks, didn’t seem to place much importance on preparation, particularly for jigsaw tasks. They saw jigsaw tasks as an easy and simple process of copying the sentences that they have and delivering them to the members who need that information.

A piece of cake. I had only to type what was written on my worksheet.

Students believed that they participated more actively in the decision-making exchange even though they didn’t prepare much in advance.
로 참여했다. 열심히 토론했다. 오늘이 제일 머리썼던 것 같다. (A little bit difficult task. Kijoong and I talked about different subjects. He focused on value, while I talked to him about interest and aptitude. In the end, we failed to discuss issues of mutual interest. Still, we were very active in making a decision. My brain was very busy.)

Second, the participants have different standards for choosing their preference. Five students in Experiment II preferred the decision-making type to the jigsaw. The remaining students preferred jigsaws. The students who liked decision-making tasks said that this type allows them to be more involved in discussion activities, in a challenging atmosphere. This is explained in the following account.

저번 것은 쉽기는 쉬웠지만 이번 것보다 재미는 없었다. ... 하지만 이번 것은 서로 의 논하는 것이라 어다인지 생각해와서 사용되는 언어도 더 많았지만 친구들과 대화 방식 아니라서 더 재미있었다. (The previous jigsaw task was easy to address, but less interesting than today’s decision-making task. ... This time I had to discuss issues which are hard to understand. The number of English words used at this time was greater. Despite all that, I enjoyed today’s online conversation with my friends.)

In contrast, the four participants who preferred jigsaw tasks to decision-making tasks focused on the guessing game-like aspect, which they believe makes it more interesting and motivating to complete. In reality, jigsaw tasks are not guessing games in that members don’t need to guess what the other members have. Interestingly, however, the participants described this type of task in such terms:

jigsaw 형태 서로 알아가고 알아 맞추는 게 재밌어서
(Jigsaw tasks. It’s interesting to guess and get the right answers through interaction.)

Another interesting result is that, among the two jigsaw tasks, all members in the decision-making-preference group seem to prefer the “strip story”, and the members in the jigsaw-preference group seem to like the “table-filling” type more. One student in the decision-making group pointed out that he liked the “strip story” because it also forced him to concentrate on the use of conjunctions and pronouns in order to put each sentence
in the correct order. Generally, all of the nine members in Experiment II admitted that the “strip story” is more difficult than “table-filling.” The findings of the pre- and post-survey analysis show that the five students who showed interest in decision-making tasks had higher self-confidence in their English skills than the four students who chose jigsaw tasks as the more preferable task type.

The findings from the surveys and interviews present differences in participant’s degree of preparation and preference across task types during online activities. The learners seem sincere in preparing for conversational tasks, but not enthusiastic about doing the jigsaw tasks. This might be interpreted as a preference among sixth graders for activities in which they can respond with their own ideas, rather than those that require them to search for fixed answers. Unfortunately, the degree of preference for conversational tasks can’t be directly compared. However, it is certain that all the participants in conversational tasks expressed satisfaction with this task type.

VI. SUGGESTION AND CONCLUSION

This research explored sixth grade elementary school students’ interaction through task-based CMC. Based on the research findings, first, it is recommended that an in-class speaking-based activity follow text-based online chatting, the purpose of this being that learners need to prove whether or not they “noticed the gap” and succeeded at internalizing new language. This implication comes from the fact that the participants in this study failed to repeat utterances made by others, even if information they did not know was provided. Besides, based on commonly held beliefs about language acquisition, learners benefit by practicing the output that was once produced and modified.

Second, task types need to be carefully designed and applied considering students’ profile. Jigsaw tasks seem to be more appropriate for beginners because these tasks allow learners to copy the sentences that they have when they exchange information with others. Among these, “table-filling” tasks seem to be easier than “strip story” tasks. Conversational tasks seem to be more suited for intermediate learners, as these types allow learners to respond with their own ideas, as well as to have spontaneous chances to contribute to the interaction. At the same time, learners can directly mimic questions provided on a worksheet when they initiate the conversation. Unlike the two previous task types, decision-making tasks require the participants to manage the communication process by themselves, from the beginning of how they initiate questions to how they formulate their responses. Therefore, this type is
recommended for relatively high-level learners.

Last, grouping is another concern provoked by this research. The degree of self-confidence of each member and/or their opinion toward the task topic seems to affect the length of discourse, especially in decision-making tasks. When the group is composed of members with a similar degree of self-confidence in their English proficiency, even though they lack knowledge of grammar, communication flows. In addition, students are more prone to active communication when they are grouped with members who have different views.

The present study has some limitations. In addition to task type differences, the effect of topic differences also needs to be investigated. Additionally, the comparison of the effect of task types should ideally be done in a single experiment, with the same participants taking part in all three task types. Cognitively challenging jigsaw tasks were not implemented or considered in this research. Given the fact that students responded better to tasks that stimulated their mind, the addition of more challenging jigsaws might have changed students’ reactions to this task type. Also, the sequence of jigsaw tasks and decision-making tasks should have been varied for each topic in order to prevent practice effects.

This study, despite the limitations, shows that text-based online chatting provides students in the sixth grade with new, innovative and positive experiences for English learning. Therefore, as suggested by Margalit and Saba (2003), it confirms the belief that it is possible to learn by using chats.

REFERENCES

Bearden, R. (February, 2001). An interactionist study of paired oral discussion vs. computer-assisted discussion between native speakers and non-native learners of Spanish. Paper presented at the 2001 Conference of AAAL, St. Louis, MO.


APPENDICES

1. Task Description in Conversational Task

<table>
<thead>
<tr>
<th>chapter</th>
<th>instruction</th>
<th>questions</th>
</tr>
</thead>
</table>
| 3. I Like Spring. | to ask and answer about the given questions freely | · Which season is your favorite one? and Why?  
· Which season is your least favorite one? and Why?  
· What can you usually do in each season? |
| 4. When Is Your Birthday? | | · When is your birthday?  
· What did you get on your last birthday?  
· What do you want to get on your coming birthday?  
· When are your family members birthdays? |
| 7. My Father Is a Pilot | | · What does your father/mother do?  
· What do you want to be in the future? and Why?  
· What do your brothers and sisters want to be? and Why? |

2. Example of Table-filling Types

JIGSAW TASK 1 - 3. I Like Spring.

Student A. 여러분은 미나가 좋아하는 계절과 그 계절을 좋아하는 이유만을 알고 있습니다. 친구들과의 대화를 통하여 다음의 빈 칸을 우리 말 또는 영어로 채우세요.

※ Mina’s Favorite Season and the Reasons

<table>
<thead>
<tr>
<th>Mina’s Favorite Season</th>
<th>Reasons</th>
</tr>
</thead>
</table>
| Spring                 | · birthday: April 7th  
· Children’s day: May 5th  
· beautiful flowers  
· a picnic season |

※ Mina’s Least Favorite Season and the Reasons

<table>
<thead>
<tr>
<th>Mina’s Least Favorite Season</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.</td>
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<tr>
<td></td>
<td>.</td>
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<td></td>
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</tbody>
</table>

※ Mina Usually Does in...

<table>
<thead>
<tr>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
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<td>.</td>
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</tbody>
</table>
JIGSAW TASK 1 - 3. I Like Spring.

Student B. 여러분은 미나가 싫어하는 계절과 그 계절을 싫어하는 이유만을 알고 있습니다. 친구들과의 대화를 통하여 다음의 빈 칸을 우리 말 또는 영어로 채우세요.

※ Mina’s Least Favorite Season and the Reasons

<table>
<thead>
<tr>
<th>Mina’s Least Favorite Season</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter</td>
<td>too cold</td>
</tr>
<tr>
<td></td>
<td>doesn’t like heavy clothes like a coat</td>
</tr>
<tr>
<td></td>
<td>catches a cold in every winter</td>
</tr>
<tr>
<td></td>
<td>can’t swim in the sea</td>
</tr>
</tbody>
</table>

※ Mina’s Favorite Season and the Reasons

<table>
<thead>
<tr>
<th>Mina’s Favorite Season</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

※ Mina Usually Does in...

<table>
<thead>
<tr>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>goes on a picnic to enjoy flowers</td>
<td>goes swimming in the sea</td>
<td>goes to see red and yellow leaves in the mountain</td>
<td>stays at home and read books</td>
</tr>
<tr>
<td>has a birthday party</td>
<td>makes songpyun on Chuseok</td>
<td>goes to meet her grandparents on New Year’s Day</td>
<td></td>
</tr>
</tbody>
</table>

JIGSAW TASK 1 - 3. I Like Spring.

Student C. 여러분은 미나가 각 계절에 주로 하는 활동에 대한 정보만을 알고 있습니다. 친구들과의 대화를 통하여 다음의 빈 칸을 우리 말 또는 영어로 채우세요.

※ Mina Usually Does in...

<table>
<thead>
<tr>
<th>Spring</th>
<th>Summer</th>
<th>Fall</th>
<th>Winter</th>
</tr>
</thead>
<tbody>
<tr>
<td>goes on a picnic to enjoy flowers</td>
<td>goes swimming in the sea</td>
<td>goes to see red and yellow leaves in the mountain</td>
<td>stays at home and read books</td>
</tr>
<tr>
<td>has a birthday party</td>
<td>makes songpyun on Chuseok</td>
<td>goes to meet her grandparents on New Year’s Day</td>
<td></td>
</tr>
</tbody>
</table>

※ Mina’s Favorite Season and the Reasons

<table>
<thead>
<tr>
<th>Mina’s Favorite Season</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

※ Mina’s Least Favorite Season and the Reasons

<table>
<thead>
<tr>
<th>Mina’s Least Favorite Season</th>
<th>Reasons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
3. Example of Strip Story Types

JIGSAW TASK 2 - 4. When Is Your Birthday?

Student A. 다음은 미나가 자신의 식구들의 생일을 소개한 글의 일부입니다. 친구들과의 대화를 통하여 미나가 하는 이야기의 순서를 맞추어서 아래의 빈 칸에 적어 주세요. 친구들은 모두 다른 내용으로 4문장씩 가지고 있습니다.

- Lastly, it’s my birthday, today. Happy Birthday to me!
- My mother’s birthday falls on September 19th.
- I have 5 family members.
- My little sister was born in winter, too.

<table>
<thead>
<tr>
<th>순서</th>
<th>내용</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
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<tr>
<td>12</td>
<td></td>
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</tbody>
</table>
JIGSAW TASK 2 - 4. When Is Your Birthday?

Student B. 다음은 미나가 자신의 식구들의 생일을 소개한 글의 일부입니다. 친구들과의 대화를 통하여 미나가 하는 이야기의 순서를 맞추어서 아래의 빈 칸에 적어 주세요. 친구들은 모두 다른 내용으로 4문장씩 가지고 있습니다.

- Hello, I’m Mina.
- And, my brother’s birthday is May 5th, a children’s day.
- Her birthday is December 1st.
- Now, I’m going to tell you my family members’ birthdays.

<table>
<thead>
<tr>
<th>순서</th>
<th>내용</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<tr>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
JIGSAW TASK 2 - 4. When Is Your Birthday?

Student C. 다음은 미나가 자신의 식구들의 생일을 소개한 글의 일부입니다. 친구들과의 대화를 통하여 미나가 하는 이야기의 순서를 맞추어서 아래의 빈 칸에 적어 주세요. 친구들은 모두 다른 내용으로 4문장씩 가지고 있습니다.

- He’s unlucky because he can get only one gift from parents.
- They’re my grandfather, parents, brother, and younger sister.
- First, my grandfather was born on January 10th.
- My father was born in July 12th.

<table>
<thead>
<tr>
<th>순서</th>
<th>내용</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>2</td>
<td></td>
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<td>11</td>
<td></td>
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<tr>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>
4. Example in Decision-making Task

DECISION-MAKING TASK 1 - 3. I Like Spring.

Kevin, who is living in Australia, asked his friends if they liked any season. He would like to know both the good and bad points of each season and which is the best season to travel to Korea. Please fill in the following blanks in Korean or English.

<table>
<thead>
<tr>
<th></th>
<th>GOOD</th>
<th>BAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Summer</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fall</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Winter</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- Korean: which season do you recommend for travel to Korea?
- English: Why do you recommend that season?
Meaning Negotiation in Task-based Videoconferencing

Hyun-Gyung Lee (Sookmyung Women’s University)


This study aims at investigating interaction in videoconferencing in order to determine its effectiveness as a tool for second language learning. It examines, first, whether meaning negotiation occurring in videoconferencing follows the four phases of the Varonis and Gass model for face-to-face conversation, second, it explains how meaning negotiation occurs, moves, and ends. Lastly, this paper examines the unique features of spoken English in task-based videoconferencing. The data were collected from the transcripts, a post survey, and interviews of eight college English majors participating in three week long videoconferencing sessions. The data reveal that videoconferencing is very similar to face-to-face communication and could provide positive conditions for spoken language acquisition. However, the data also imply possible difficulties when videoconferencing is applied to language classrooms, due to its limitations. In most cases, comprehension difficulty and frequent communication breakdowns in video-based interaction resulted in the excessive use of communication strategies. This excessive use of communication strategies can slow the flow of the conversation and discourage language learners from communicating in the target language. Therefore, these limitations should be considered when language lessons using videoconferencing are designed.

1. INTRODUCTION

Current research based on the communicative approach suggests that learning English
in an EFL context is often difficult and problematic because students do not have enough opportunity to practice spoken English and communicative skills in authentic situations. This lack of interaction in English often makes EFL students’ language acquisition more difficult.

Text-based interaction has been studied as an alternative to face-to-face interaction increasing the amount of time for English learners to communicate with people. The findings from a recent study indicate that the students’ oral competence benefited from text-based interaction. However, it is not certain that the communicative skills learned through meaning negotiation, the process of overcoming communication breakdown, in a written environment can be transferred to oral communicative skills. This is because the context of oral conversation requires different linguistic skills, such as pronunciation, listening, and speaking (Hampel & Hauck, 2004). Moreover, there seems to be less meaning negotiation in text-based interaction such as internet chatting, implying that there are fewer opportunities for students to produce comprehensible input, and modified output which facilitate second language acquisition (Bearden, 2001; Pellettieri, 1999; Smith, 2001, 2003; Warschauer, 1996). Therefore, text-based interaction is not a viable alternative to face-to-face interaction.

Recent development of technology has allowed students easy access to videoconferencing, enabling them to communicate in similar ways as in face-to-face oral conversation. Videoconferencing makes it possible for EFL students to benefit from oral interaction in English through the Internet across the globe, and also increases their interaction outside the classroom. However, little research has been performed on the interaction that occurs in videoconferencing. Therefore, this study investigates interaction, and in particular, meaning negotiation in videoconferencing. The research questions for this study are as follows:

1. Does meaning negotiation in videoconferencing follow the four phases in Varonis and Gass (1985)?
2. How does meaning negotiation occur, move and end in task-based videoconferencing, compared with meaning negotiation in face-to-face conversation and in text-based chatting?
3. What other features are observed in performing spoken English in task-based videoconferencing?
Ⅱ. LITERATURE REVIEW

1. Meaning Negotiation in SLA

For decades, researchers have studied on why some learners fail to acquire the target language, whereas others succeed. Krashen’s (1981) “Input Hypothesis” claims that exposure to comprehensible input is both necessary and sufficient for second language acquisition to occur. Studies on students’ failure to achieve productive control of French grammar and lexis in French–English immersion programs in Canada (Swain & Lapkin, 1982; Swain, 1985) have revealed input is not enough to make sure that the output of a learner will be native-quality (Swain, 1985). Interaction in which information and meaning are negotiated, involving both comprehensible input and comprehensible output, is fundamental.

Long (1983) claims that interaction is beneficial to second language acquisition. During interaction, input is made more comprehensible by actively using conversational tactics in the process of meaning negotiation. In addition, Pica (1994) suggests that meaning negotiation provides learners with feedback on their use of the target language and opportunities for them to draw “learners’ attention to both message meaning and L2 form” (p. 507). Through the process, the students are pushed to modify their own output. Less competent learners notice the errors by more competent learners’ signals of non-understanding when they produce linguistically incorrect utterances. They then produce “more comprehensible and more target-like language” (Ellis, 2003, p. 80). Therefore, the more opportunities for meaning negotiation there are, the more likely language acquisition is to occur (Ellis, 2003).

Varonis and Gass (1985) propose a model for meaning negotiation to describe meaning negotiation occurring between non-native speakers. This model consists of the two parts: a trigger and a resolution. Figure 1 describes meaning negotiation sequence.

![Figure 1] Meaning Negotiation Sequence

The first part, a trigger, refers to the utterance that causes non-understanding. A resolution, being the second part of the model, consists of an indicator, a response, and a reaction to the response. An indicator serves to signal non-understanding and reveals that
one member of the conversational pair does not understand information provided by the other. A response phase is identified as the action the speaker takes to fix the non-understanding. A response clarifies the utterance, which has triggered non-understanding, or provides additional information. The last phase, the reaction to the response, occurs when the listener reacts to the response.

2. Meaning Negotiation in Computer Mediated Communication

Computer Mediated Communication (CMC) is “communication which takes place between human beings via the instrumentality of computers” (Herring, 1996, p. 1). There are two types of CMC: synchronous CMC and asynchronous CMC. In synchronous CMC, interaction takes place in real time such as text-based online chat, audio and videoconference, whereas in asynchronous CMC, participants are not necessarily online simultaneously as in e-mail, and discussion forums (Simpson, 2001). CMC provides EFL learners with increased opportunities for interaction in English and encourages seemingly less motivated students to participate more frequently due to the lack of interruption from the other learners (Kelm, 1992) and thus, fosters equal participation among learners (Warschauer, 1996).

Videoconferencing is one of the newest forms of synchronous CMC. It provides a conversation environment, very similar to face-to-face conversation with various visual, audio, verbal and textual modes as face-to-face conversation does. Although its potential effectiveness as a tool for language learning has been anticipated, it is still relatively new territory in Korea (Cho, 2001). Thus, recently increased research on CMC meaning negotiation is mostly in the area of text-based meaning negotiation, and little research has been conducted on video-based meaning negotiation in videoconferencing. According to previous research, text-based meaning negotiation resembles face-to-face meaning negotiation in many ways (Pellettieri, 1999). It also follows the Varonis and Gass model (1985) and meaning negotiation is usually triggered by lexical or content triggers as in face-to-face conversation (Pellettieri, 1999; Pica, 1994; Smith, 2001, 2003). However, meaning negotiation occurs in only about a third of the speakers’ turns in a dialogue (Pellettieri, 1999; Smith, 2001). Some research shows that the length and amount of meaning negotiation in text-based chatting is lower than in face-to-face conversation (Bearden, 2001). Text-based chatting, therefore, does not provide as many opportunities as face-to-face conversation to practice communication strategies.

Recently, Smith (2001, 2003) argues that the Varonis and Gass model (1985) is “insufficient to adequately deal with negotiation in a CMC environment” and proposes “an
expanded model of meaning negotiation in task-based CMC” (2001, p. 222). According to Smith, many triggers are ignored or not acknowledged first, and answered later since reactions in text-based chatting are slow and not spontaneous. In addition, meaning negotiation in text-based chatting tends to end with a clear signal of understanding. Smith’s model includes first, two additional phases, such as ‘confirmation,’ and ‘reconfirmation.’ Second, unacknowledged indicators, and the occasion for both triggers and the indicators in one speaker and in the same turn are anticipated. A confirmation refers to additional input after a reaction to the response. A reconfirmation is the reaction to the confirmation. The following example describes Smith’s expanded model for text-based meaning negotiation in detail (Smith, 2001).

A: Where are you from?
B: I am from Nagasaki. (Ignored Trigger) → Delayed (split) meaning negotiation
B: I study social
B: Sociology. (Trigger)
B: I study sociology.
A: Nagα…, I don’t understand. (Ignored Indicator)
   What you study? (Indicator)
B: Something about society. (Response)
   Society problem.
A: Similar to social studies? (Reaction to Response +)
B: Yes. It’s called sociology. (Confirmation)
A: OK. (Reconfirmation)
   What is Nagasaki? (Acknowledged Indicator)

In this example, the indicator for the first trigger “Nagasaki” is unacknowledged, until another meaning negotiation triggered by “sociology” ends. The indicator acknowledged later is “What is Nagasaki?”

Table 1 presents the components of meaning negotiation used in Smith’s five-week long research (2001) of intermediate learners at a university.

<table>
<thead>
<tr>
<th>Trigger</th>
<th>Lexical: The problematic utterances can be clearly linked to lexical items.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Content: The entire content of a previous message is problematic.</td>
</tr>
<tr>
<td></td>
<td>Syntactic: The problematic utterances can be clearly attributed to grammatical construction.</td>
</tr>
</tbody>
</table>
Indicator

Local: The respondent explicitly identifies the trigger.
Global: The questions like “What?” or “I don’t understand.”
Inferential (hypothesis testing): Utterances when learners test out hypothesis

Response

Minimal: Responses which provide little new input (repeating the trigger, or saying “Yes.”)
Repeating trigger-lexical modification: Repeating the trigger with lexical modifications
Rephrasing/elaboration: Rephrasing or elaborating prior utterances

Reaction to the R

Minimal: Explicit statement of understanding “OK,” “I understand.”
Metalinguistic: The utterances the learner comments explicitly what the cause of the problem had been
Task appropriate: The utterances are contextually relevant to the preceding stretch of discourse and show implicit understanding.
Test deduction: The learners test out their current state of understanding regarding to trigger.

Smith (2003) found that learners tend to be more explicit in text-based chatting. For example, learners preferred local indicators to ambiguous global indicators, and rephrasing and elaboration response to minimal responses, contradicting previous findings from face-to-face meaning negotiation (Pica, 1992). Smith concludes that the learners act explicitly when performing text-based interaction because there is limited information in written interaction, thus they feel ambiguity (Smith, 2003).

III. METHOD

1. Research Site

The three-week long videoconferencing sessions, the post survey, and the interviews were conducted for this study at a university in Seoul. The sessions took place at a computer lab. These sessions were designed as a sub-course of the core course “English Literature and Writers’ Poetry” during the intensive 2004 summer semester.

2. Participants

The participants for this study were eight English majors of intermediate (mid to high) proficiency studying at a university. They were enrolled in the core course, “English Literature and Writers’ Poetry” and participated in this project to achieve extra credit. They had five sessions and worked in pairs, as both information givers and receivers.
3. Materials and Procedure

The videoconferencing sessions took place in a university computer lab. The students were seated relatively far apart from each other, so that they could only hear what their partner said through the computer. Each student was provided with a headset, a web camera. The Table 2 shows the overall procedure of the videoconferencing sessions.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Lesson</th>
<th>Class work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-task stage</td>
<td>Lesson 1</td>
<td>Introduction to the course/Course overview</td>
</tr>
<tr>
<td></td>
<td>Lesson 2</td>
<td>Learning how to use the videoconferencing messenger</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pairing/Setting where each student would sit</td>
</tr>
<tr>
<td>Task stage</td>
<td>Lesson 3</td>
<td>Jigsaw 1</td>
</tr>
<tr>
<td></td>
<td>Lesson 4</td>
<td>Jigsaw 2</td>
</tr>
<tr>
<td></td>
<td>Lesson 5</td>
<td>Jigsaw 3</td>
</tr>
</tbody>
</table>

There were five lessons and the last three lessons were spent on jigsaw tasks. Figure 2 depicts the videoconferencing messenger the participants installed in Lesson one.

![Figure 2](image.png)

By clicking the buttons on the left, students could create their own conference room, and talk to each other online. Lesson two and three took place on the same day since technical problems occurred in Lesson two. The participants visited three conference rooms during the lesson. The first room, ‘Teacher’s Room’ is present in Figure 3.
A monitor on the right shows the room creator and the monitors on the left shows other participants. The white board with a scroll bar at the left bottom is the text-chat board. By clicking the buttons at the top, the participants can then draw pictures, write lecture notes or send pictures to others. The participants met in this room at the beginning and end of the lesson to receive directions from the teacher. The second room was the 'Topic Group room,' where each topic group met and discussed readings before undertaking the main jigsaw task. The third room was the 'Jigsaw Task Room,' where students exchanged information to complete the jigsaw table. Figure 4 is one of the examples of online jigsaw rooms.

The participants recorded their discussion by clicking the recording button on the left. The participants were allowed to check the spelling and grammar of their writing before posting the completed jigsaw table to the classroom board. The students were encouraged to listen to their recorded conversations and read teacher’s feedback to check and correct their speech errors.
1) Jigsaw Task

There were three table-filling jigsaw tasks used for this study. The participants who had never experienced jigsaw tasks were taught them in Lesson one. Each pair were designated ‘Student A’ and ‘Student B.’ The teacher posted different reading materials and discussion material for student A and B by email a few days prior to the lesson. After pre reading the material, the members of topic group A and B met separately in the Topic Group Room to discuss the information. Next, student A and B exchanged information in the Jigsaw Task Room and completed the table using the information gained from their partner. The students acknowledged that the reading material was linguistically challenging, however, it was also motivating since they were studying poetry simultaneously during the main course “English Literature and Writers’ Poetry.”

4. Data Collection and Analysis

1) Data Collection

The data were collected through three methods: the three-week videoconferencing sessions, the post survey and the interviews. First, the three, twenty minute long conversation sessions for jigsaw tasks were recorded, so that they could be analyzed for evidence of the existence of video-based meaning negotiation. Second, a post survey, based on the Likert scale, was given in Korean at the end of the course to identify how the features observed in videoconference affected students’ spoken language performance. The participants, in the computer lab, were told to rate statements in the area of anxiety, listening strategies, and speaking. Third, students were required to respond to more in-depth questions on the participants’ spoken language performance. Two pairs from the jigsaw activity volunteered for the twenty minute long interview in Korean. Interviews were conducted on students two at a time. The data from the fourth pair were excluded to analyze meaning negotiation, as they were unavailable for topic group discussion on three occasions though their data from the survey were included.

2) Data Analysis

The data from the videoconferencing sessions, the survey and interview were carefully examined to identify meaning negotiation routines and the features of oral language in videoconferencing. The recorded conversations during the tasks were transcribed, and the number of discourse turns was counted.
The data were broken down into three steps: identification, analysis, and categorization. The identification step required looking for signals that indicated communication breakdown from the conversation transcripts. In the second stage, the components of meaning negotiation such as the triggers, indicators, responses, reactions to the responses were identified. In the final stage of categorization, meaning negotiation sequences were categorized into four types: a trigger to an indicator (T–I); a trigger, an indicator, to a response (T–I–R); a trigger, an indicator, a response to reaction, to the response (T–I–R–R); and extended meaning negotiation routines, or a trigger, an indicator, a response, a reaction to the response, a confirmation, to reconfirmation (T–I–R–RR–C–RC). The number and the ratio of each sequence to the total number of meaning negotiation sequences were estimated. Then, each type of trigger, indicator, response, and reaction to the response was identified and classified and counted (see Table 1). The following example presents a lexical trigger and a local indicator.

A: In romanticism, the highest art is an endeavor, an endeavor. (Lexical Trigger)
B: An endevil? (Local Indicator)

In the example, the communication breakdown occurred due to the lexical item “endeavor” and thus, it is a lexical trigger. Next “An endevil?” is a local indicator since it explicitly shows what the trigger is.

The average rate for each statement from the survey data was estimated to identify the features in performing spoken language in task-based videoconferencing. The transcripts for the interview results in Korean were analyzed and the utterances, related to this study were taken and rewritten into English.

IV. RESULTS

1. Meaning Negotiation Patterns in Task-based Videoconferencing

From the analysis of data, 588 out of 1116 total discourse turns were found to have been involved in meaning negotiation, indicating the learners were engaged in 47.31% of the total discourses, as shown in Table 3.
In addition, there were 110 meaning negotiation sequences in the chat transcripts. Table 4 presents meaning negotiation routines observed in this study.

<table>
<thead>
<tr>
<th>Negotiation process</th>
<th>Negotiation sequence</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-I</td>
<td>None</td>
<td>0</td>
</tr>
<tr>
<td>T-I-R</td>
<td>5</td>
<td>4.55</td>
</tr>
<tr>
<td>T-I-R-RR</td>
<td>45</td>
<td>40.90</td>
</tr>
<tr>
<td>T-I-R-RR-C-(RC)</td>
<td>60</td>
<td>54.55</td>
</tr>
<tr>
<td>Total</td>
<td>110</td>
<td>100</td>
</tr>
</tbody>
</table>

All the signals of non-understanding were followed through a complete meaning negotiation routine and there was no indicator ignored, based on the Varonis and Gass model (1985). Meaning negotiation sequences in 95.45% ended in a reaction to the response phase, the optional fourth phase of the Varonis and Gass model, suggesting only about 4.5% of the negotiation routines ended at the response phase.

More importantly, there was 54.55% of complicated meaning negotiation routines, triggered by extended model (Smith, 2003).

2. Meaning Negotiation Routines in Videoconferencing

Investigating triggers of meaning negotiation is considered beneficial in the study of meaning negotiation since it reveals what the communicative difficulties are. Table 5 shows each trigger and both its number of occurrences and percentage of the total number of negotiated interactions.
[Table 5] Occurrences of Each Trigger, Indicator, and Response

<table>
<thead>
<tr>
<th>Types</th>
<th>Number</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trigger</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lexical</td>
<td>51</td>
<td>52.5</td>
</tr>
<tr>
<td>Content</td>
<td>48</td>
<td>40</td>
</tr>
<tr>
<td>Task related</td>
<td>4</td>
<td>3.34</td>
</tr>
<tr>
<td>Syntactic</td>
<td>2</td>
<td>1.67</td>
</tr>
<tr>
<td>Phonological</td>
<td>5</td>
<td>4.17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td><strong>Indicator</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local</td>
<td>80</td>
<td>68.42</td>
</tr>
<tr>
<td>Global</td>
<td>21</td>
<td>16.67</td>
</tr>
<tr>
<td>Inferential</td>
<td>19</td>
<td>14.91</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>120</td>
<td>100</td>
</tr>
<tr>
<td><strong>Response</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimal</td>
<td>94</td>
<td>55.62</td>
</tr>
<tr>
<td>Repeating + LM</td>
<td>3</td>
<td>1.78</td>
</tr>
<tr>
<td>Rephrasing/Elaboration</td>
<td>72</td>
<td>42.60</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>169</td>
<td>100</td>
</tr>
</tbody>
</table>

In the first phase, lexical triggers occurred most frequently and they were followed closely by content triggers. This suggests that lexical items and the content of the utterances caused non-understanding. It is worth noting that phonological triggers were noticed unlike in text-based meaning negotiation. Mispronounced words caused non-understanding in 4.17% of the total triggers. The following example describes lexical and content triggers from this research data.

A: According to neoclassicism, the poetry is artful manipulation, artful manipulation. (Lexical Trigger)
B: Artful… (Local Indicator)
A: Manipulation. (Minimal Response)

In the second phase, 68.42% of non-understandings were signaled through the use of local indicators and this is significant. There was no ignored indicator, which means there was no delayed response like in text-based meaning negotiation. The following example describes a local indicator rather than global indicator, “I don’t understand.”

A: Think a lot by habit. (Lexical Trigger)
B: By habi? (Local Indicator)
A: No, habit. It means habitually. Always… (Rephrasing/Elaboration R)
In the third stage, minimal responses occurred more frequently than rephrasing/elaboration responses in videoconferencing. The learners repeated or spelled out the triggers more often than elaborating or rephrasing them. From the chat script, there was a strong tendency for learners to use rephrasing/elaboration when they failed to fix the conversation using minimal responses. The following example from this study shows that their first and second decision to respond to the indicator.

A: A mode of triumph. (Trigger)
B: A? (I)
A: M-O-D-E, M-O-D-E. (Spelling out, Minimal Response 1)
B: M-O-D-E... (Reaction to R-)
A: Yeah, of triumph. T-R-I-U-M-P-H. (Minimal Response 2)
B: T-R-I-U-M-C-H? (Reaction to R-)
A: T-R-I-U-M-P-H. Win. Like win. (Rephrasing/Elaboration Response 3)
B: I don’t know the word, so it is right?
    T-R-I-U-M-T-H? (Reaction to R-)
A: P-H. It’s kind of win. You know. (Rephrasing/Elaboration Response 4)
B: OK. And what is the next question? (Reaction to R+)

In the first and the second reaction, the speakers provided only a minimal response. However, when the listener still did not understand (RR-), the speaker provides rephrasing/elaboration responses, such as “like win” and “It’s kind of win.”

In addition, 54.5% of negotiation sequence did not end at the fourth phase (see Table 4), and they were extended to the confirmation and reconfirmation phases. The following chat transcript describes an extended meaning negotiation sequence.

A: Yeah. Exciting the sympathy of the reader. By a faithful adherence to the truth of nature. (Trigger)
B: By? (Indicator)
A: A faithful. (Response)
B: A faithful? (Reaction to R-)
B: F-A-I? (Reconfirmation-)
A: T-H-F-U-L, faithful. (Confirmation2)
B: Faithful... (Reconfirmation+)
When B shows negative reaction (RR-) “faithful?” in the fourth stage, A provides a confirmation by stating “Yeah, F-A-I-T-H-F-U-L,” and the meaning negotiation continues until B utters positive reconfirmation (RC+), “Faithful….”

3. Other Factors of Oral Performance in Videoconferencing

The first part of the survey asked about three types of anxiety: listening, speaking, and making grammatical errors. The participants rated the level of anxiety during the videoconferencing sessions. Table 6 indicates their anxiety levels in these three areas.

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Rate (Likert scale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety about making grammatical errors</td>
<td>3</td>
</tr>
<tr>
<td>Listening anxiety</td>
<td>3.5</td>
</tr>
<tr>
<td>Speaking anxiety</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>2.83</td>
</tr>
</tbody>
</table>

From the survey data, the total rate of anxiety was 2.83. The participants felt relatively high anxiety in listening whereas, low anxiety in speaking.

Table 7, an excerpt from the interview, demonstrates the comment one of the participants made about listening in videoconferencing.

“I couldn’t have eye contact with the speaker or to see her body language, so it was more difficult to follow what my partner said—Sometimes, I got lost. I didn’t watch the computer screen carefully to see my partner’s facial expressions because I was reading my jigsaw reading material in order to speak more fluently and accurately during the task. It’s not like communicating face-to-face. Lip-reading is not possible here.”

Table 7 shows that listening was hampered by a lack of “eye contact and body language,” or nonverbal information. Although this medium provides visual features, students pointed out that they “didn’t watch the computer screen carefully” like in a normal conversation because the student sacrificed watching their partner’s face for reading jigsaw reading material necessary for the task completion.

Table 8 is the result from the second part of the survey which asked the participants about the frequency of using each listening strategies.
Surprisingly, the participants strongly believed that they used these three listening strategies in the study frequently. In addition, the data from the interview indicates that the participants also used interaction strategies to tackle listening difficulties. Table 9, data from the interview identifies the strategies students used to maintain the conversation.

A expressed listening difficulty explicitly (e.g., “Listening was not easy”) and stated, “I listened to each word very carefully.” She used bottom-up listening strategies. In addition to listening strategies, she also articulated that she employed interaction strategies, such as “repetition and asking for rephrasing” and “she asked over and over” to comprehend better. She commented that this was “sometimes stressful” because, as B claimed, the process of meaning negotiation takes time and thus, it slowed the flow of the conversation.

Table 10, from the third part of the survey, shows how they dealt with different features in videoconferencing while they were speaking.
Table 10: Survey Result from Speaking in Videoconferencing

<table>
<thead>
<tr>
<th>Question</th>
<th>Average score</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt confident to speak in the videoconference room.</td>
<td>4</td>
</tr>
<tr>
<td>I spoke often because I felt more comfortable.</td>
<td>3.63</td>
</tr>
<tr>
<td>I spoke often because I could concentrate on discussion in my group’s private conference room.</td>
<td>3.25</td>
</tr>
<tr>
<td>I spoke often because the time was flexible.</td>
<td>2.38</td>
</tr>
<tr>
<td>I often asked for clarification and repetition.</td>
<td>4.13</td>
</tr>
<tr>
<td>The pause between the utterances was intolerable.</td>
<td>3.5</td>
</tr>
<tr>
<td>I felt free to interrupt other speakers when I wanted to express my opinion.</td>
<td>2.75</td>
</tr>
<tr>
<td>I elaborated on the content.</td>
<td>4.13</td>
</tr>
<tr>
<td>I spoke more than the teacher.</td>
<td>3.63</td>
</tr>
<tr>
<td>I spoke up.</td>
<td>3.5</td>
</tr>
<tr>
<td>I spoke slowly.</td>
<td>4.12</td>
</tr>
<tr>
<td>I tried to pronounce accurately and clearly.</td>
<td>3.75</td>
</tr>
</tbody>
</table>

From the survey, the rate of time flexibility was the lowest. The participants felt that there was insufficient time in videoconferencing since they “stopped to repeat, and had to ask over and over (see Table 9).” Next, most learners felt that it was difficult to determine when to interrupt, based on the data from the survey. A participant commented that this was due to “lack of nonverbal cues” in the interview since they did not use visual features to see whether the speaker had finished or not.

The highest rate was given to the statements about elaboration, repetition, and asking for clarification, which represent interaction strategies. The participants often used more interaction strategies to deal with the lack of nonverbal information (see Table 7, 9). It is also notable that the participants felt very confident in videoconferencing, which is consistent with the reported low speaking anxiety (see Table 6). Table 11 is an excerpt from the interview and describes how videoconferencing encouraged a passive student to orally participate more actively than in a normal language classroom.
Student A observed that her partner who used to be passive in normal classroom situations, changed her attitude and actively participated in videoconferencing. Student B claimed that she participated more “willingly” because “the teacher and the others were not watching her.” During the interviews, the other participants strongly agreed with her claim, stating that she appeared “less self-conscious” in the videoconferencing, and thus, they spoke more than in the traditional language classroom.

On the other hand, the data from the survey (see Table 10) demonstrate that students spoke more slowly. Table 12, an excerpt from the interview, shows why students spoke more accurately and slowly in videoconferencing.

The participants attempted to “speak accurately and slowly,” in order to deal with “difficulties in listening” and the lack of nonverbal information such as information from “lip-reading.” In addition, another student reported “being more careful not to make mistakes than in usual conversation” in the interview.

The chat transcripts were examined in search of evidence that the participants employed interaction strategies. A number of interaction strategies were observed in chat transcripts while students were performing the task. Table 13 presents coping strategies to deal with communication difficulty in videoconferencing.

### [Table 11] Overcoming Passivity in Videoconferencing

| Student A: “I didn’t know she could speak so much like that... she never speaks in class. I thought she was shy.” |
| Student B: “I am not shy... just not active. I am very reluctant to speak in English. But in videoconferencing, the teacher and the others were not watching me. There were only my partner and I in the conference room, so I was more willing to speak.” |
| Student A: “You speak much more than me...” |

Student A observed that her partner who used to be passive in normal classroom situations, changed her attitude and actively participated in videoconferencing. Student B claimed that she participated more “willingly” because “the teacher and the others were not watching her.” During the interviews, the other participants strongly agreed with her claim, stating that she appeared “less self-conscious” in the videoconferencing, and thus, they spoke more than in the traditional language classroom.

On the other hand, the data from the survey (see Table 10) demonstrate that students spoke more slowly. Table 12, an excerpt from the interview, shows why students spoke more accurately and slowly in videoconferencing.

### [Table 12] Reasons for Slow Rate of Speech

“I tried to speak with accurate pronunciation, especially R, L or F because my partner cannot see the shape of my mouth, when pronouncing. I also have difficulties in listening to these sounds. It would be harder to understand without lip-reading. I guessed it would be the same for my partner, so... when I pronounced those sounds, I tried to speak accurately, and slowly.”

The participants attempted to “speak accurately and slowly,” in order to deal with “difficulties in listening” and the lack of nonverbal information such as information from “lip-reading.” In addition, another student reported “being more careful not to make mistakes than in usual conversation” in the interview.

The chat transcripts were examined in search of evidence that the participants employed interaction strategies. A number of interaction strategies were observed in chat transcripts while students were performing the task. Table 13 presents coping strategies to deal with communication difficulty in videoconferencing.

### [Table 13] Coping Strategies Found in the Study

- **Test deduction strategies**: Testing out their new knowledge by inference or by summarizing what they understood
A: So it means that they, they think that the humanity glory, human have the possibility and the potential right to god.
B: So romanticism want to overcome god’s power? (negative test deduction)
A: Romanticist want human can overcome their own limit. Okay?

• Repeating (the speaker’s utterance)
  : More active ways to follow conversation, repeating the speaker’s last utterances or saying “yes”, “u-hm” or “OK” to give explicit indication of understanding in order to solve the ambiguity.
  A: Ok, so, do you know how to write poetry?
  B: The process?
  A: Would you like to mention the process?
  B: According to Wordsworth, I can...

• Summarizing
  : A listener summarizes to make sure they understand well.
  A: So, we can briefly summarize a little bit?
  B: OK (...) I will go first.
  A: Actually, Wordsworth and Coleridge’s view were almost very similar when they met very early, it’s right? (Summarize what A said previously)

• Comprehension check strategies
  : A speaker asks his/her partner, “Do you understand?” or “Are you following me?”
  A: From common life, and this poems … was related to …
  B: Um …
  A: Ordinary people.
  B: Yeah …
  A: Are you following me?
  B: That’s all?

• Asking for slowing down
  : A speaker asks for slower speech.
  A: Prior process of deep reflection.
  B: Could you a bit speak slowly?

• Repetition (to emphasize)
  : Repeating or restating words or sentences, so that the listeners do not miss what was said.
  A: So you can just summarize they wrote about poet themselves. The poets wrote about themselves.
  B: Poet about themselves?
  A: Poet themselves. Poet themselves.

• Spelling out
  : Participants often spelled out words that were likely to cause communication breakdown.
  A: In romanticism, the highest art is an endeavor, an endeavor.
  B: an endevil?
Meaning Negotiation in Task-based Videoconferencing

- **Asking for summarizing**
  A Listener asks for a speaker to summarize/Speakers summarize to make their input more comprehensible.
  A: Coleridge object Wordsworth’s view on the two ground. First Communication with an object implies …
  B: You can summarize, You can summarize.
  A: Yes, I am summarize the content (...) So I have answer, two kinds of things. First...

The analysis revealed that they used interactive listening strategies such as test deduction strategies, repeating the preceding utterances, and summarizing to show or make sure that they understood. They also utilized comprehension checks, asked for slower speech, emphasized key words, spelled out words, and asked for summarizing.

To conclude, the participants in videoconferencing experienced a relatively low degree of speaking anxiety and were more confident in participating orally than in face-to-face classroom situations. However, they felt a certain degree of listening anxiety in this mode, due to the lack of nonverbal features as the participants tended to sacrifice visual features for reading necessary information on the screen. The participants employed listening strategies and coping strategies often to tackle this listening difficulty.

V. DISCUSSION AND CONCLUSION

1. Discussion

1) Does Meaning Negotiation in Videoconferencing Follow the Four Phases (Varonis and Gass, 1985)?

Based on the data, the routines of video-based meaning negotiation do follow the Varonis and Gass (1985) model; however, the data also indicates that video-based negotiation tends to be extended to two additional phases, agreeing with Smith’s expanded model proposition (2003) and the Varonis & Gass model (1985) alone can not explain the complex routines. Figure 5 shows its extended meaning negotiation sequence.
There are six phases of meaning negotiation routines: a trigger, an indicator, a response, a reaction to the response, a confirmation and a reconfirmation. There are two additional phases, the confirmation, and reconfirmation phases, as in text-based meaning negotiation and the fourth phase of meaning negotiation is mostly not optional in video-based meaning negotiation. These occur because the learners want to be assured that the negotiation process is completely finished where ambiguity exists (Smith, 2003). This suggests the learners continue to negotiate for meaning until their partners show their understanding explicitly.

In addition, it is clear that video-based meaning negotiation occurs very actively. The data from this study shows that for nearly half of the total turns, meaning negotiation is the prime focus for learners.

Therefore it may be concluded that videoconferencing tends to be extended though overall, video-based meaning negotiation follows the Varonis and Gass model (1985) and it can elicit as much meaning negotiation as face-to-face conversation.

2) How Does Meaning Negotiation Occur, Move and End in Task-based Videoconferencing?

The findings of the present study suggest that video-based meaning negotiation bears the features of oral communication though they also show some qualities of CMC. First, video-based meaning negotiation occurred mostly due to lexical or content triggers and was rarely caused by morphosyntactic triggers as in face-to-face negotiation. These data propose that video-based interaction is also fairly meaning-based since morphosyntax does not carry meaning (Brock et al., 1986). Second, phonological triggers also cause meaning negotiation as in face-to-face communication. Third, learners employ minimal responses more frequently than rephrasing/elaborating responses in videoconferencing. The occurrence of phonological triggers and the over-dependence on minimal responses reflect the oral conversational nature of videoconferencing, since, in written interaction, a phonological trigger does not exist and the subjects prefer to elaborate rather than repeating the trigger at the response phase (Pica, 1992; Smith, 2003). This is due to the fact that there is no need to repeat the trigger since it can be read by scrolling down in text-based chatting. Fourth, from this study data, it can be inferred that there is strict turn-taking adjacency in videoconferencing like in face-to-face communication. There was no indicator ignored (Ii) or delayed for acknowledgement, resulting in no split meaning negotiation routines like in text-based meaning negotiation (Smith, 2003).

On the other hand, this study also shows that, despite visual and audio features
included in this medium, the learners tend to feel ambiguity, thus they are more explicit. First, the learners signal their non-understanding through explicit local indicators, rather than ambiguous global indicators, agreeing with Pelletieri (1999) and Smith (2003). Next, they tend to end meaning negotiation with an explicit implication of understanding. Over half of the meaning negotiation ended with a positive reaction to the response. Therefore, it is concluded that video-based meaning negotiation is very similar to face-to-face meaning negotiation and has a nature much alike oral conversation; however, the learners’ preference for explicitness implies that they feel ambiguity in this mode.

3) What Other Features are Observed in Performing Spoken English in Task-based Videoconferencing?

The findings from the survey and interview presents that the participants felt their listening and communication was hampered due to a lack of non-verbal information despite the visual and audio features of videoconferencing. It was found that learners tend to sacrifice visual features of this medium for access to other information, thus the screen was used to gather information other than that shown on the partner’s face. For example, they type to take notes, read the material, or search an Internet dictionary rather than look at the screen of videoconference room to see the speakers’ facial expression. This inflexibility could be caused by too much information open in the Computer Assisted Language Learning environment or by the learners’ unfamiliarity with videoconferencing as a communication tool. Though other features of this medium should also contribute to high listening anxiety, they were not detected.

The data analysis yields that the nature of videoconferencing requires the learners take more active roles. The participants reported that they used coping strategies often to tackle communication difficulty. In fact, various coping strategies were found in this study to enhance comprehension. These were test deduction strategies by both inference and summarizing, repeating the preceding sentence, comprehension checks, asking for slower speech, emphasizing key words, spelling out and summarizing to make input more comprehensible.

It was also shown that the videoconferencing medium could provide a less stressful conversational environment than face-to-face language classroom. Low anxiety about speaking, an increase in confidence and willingness were observed in this study though some participants commented that videoconferencing was “sometimes stressful” because active meaning negotiation in videoconferencing slowed the flow of the conversation. This supports Maloney (2001) who stated that videoconferencing is helpful to overcome
learners’ passivity found in the traditional classroom.

It can be concluded that learners’ inflexibility in mode switching cause them to sacrifice the visual features of videoconferencing, which results in listening difficulty. Next, the learners, anticipating this different conversation environment, seem to use various interactional strategies to maintain the conversation, resulting in active meaning negotiation. Furthermore, the data suggests that videoconferencing could foster more participation, and particularly passive learners could benefit from the less stressful environment.

2. Conclusion

This research explored interaction through videoconferencing to see whether videoconferencing could be an alternative to face-to-face conversation in spoken language acquisition. This study confirms that video-based meaning negotiation has an oral conversation nature and it is very similar to face-to-face meaning negotiation. In addition, meaning negotiation occurs very actively in videoconferencing, suggesting that the participants actively using communication tactics and strategies. Therefore it could be drawn that videoconferencing could provide positive conditions for spoken language acquisition in similar ways as face-to-face conversation.

In spite of causing positive conditions for spoken language, there are difficulties when videoconferencing is applied to the language classroom, due to its different features from face-to-face communication. In most cases, comprehension difficulty and frequent communication breakdowns in video-based interaction resulted in excessive use of communication strategies. This excessive use of communication strategies could slow the flow of the conversation and discourage the language learners from continuing to communicate in the target language. Therefore, these difficulties should be considered when language lessons using videoconferencing are designed.

Outside of videoconferencing’s limitations the study has some itself. First, the duration of this study, three weeks, was not long enough to collect sufficient data to conduct a more in-depth study on video-based meaning negotiation. Second, good quality computers and headsets as well as technical support in the form of computer repair services are necessary in order to collect appropriate data. The delay of Lesson two was due to the computer audio malfunctioning, which probably contributed to the listening anxiety students expressed. Another concern is a lack of task variables, such as task difficulty, and task types. In the interview, many learners expressed that the jigsaw task was difficult. The lexical items from the critiques on poets belonged to academic discourse,
which increased the level of challenge for task completion. Task difficulty affects the amount of meaning negotiation (Ellis, 2003). Therefore, it is possible that task difficulty caused active meaning negotiation in this study. In addition, there was only one task type, the jigsaw, which made it hard to identify whether it was the task variable or the medium that caused the high occurrence of meaning negotiation. Thus, further research into video-based meaning negotiation using several task variables should follow this research.

REFERENCES


## APPENDIX A

### 1. Sample Jigsaw Task

Direction: Exchange your information, and fill in the table.

<table>
<thead>
<tr>
<th></th>
<th>Student A:</th>
<th>Student B:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The subject of poetry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political background</td>
<td></td>
<td></td>
</tr>
<tr>
<td>View on human beings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definition of good poetry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The essential element of poetry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Process of writing poetry</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX B

1. 설문지

다음 설문 조사는 여러분이 화상회의를 이용한 영어학습을 경험하고 느낀 바를 측정하는 데에 목적이 있습니다. 일반강의실에서의 영어학습경험과 비교해보며 질문을 잘 읽고 대답해 주시기 바랍니다.

1: 전혀 아니다  2: 별로 아니다  3: 보통이다  4: 조금 그렇다  5: 아주 그렇다

<table>
<thead>
<tr>
<th>나는 화상회의 기반 영어 학습시에...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
</tr>
<tr>
<td>1. 영어로 문법 실수할까 걱정되었다.</td>
</tr>
<tr>
<td>2. 화자가 말하는 것을 이해하지 못할까 걱정되었다.</td>
</tr>
<tr>
<td>3. 자발적으로 말하는 것이 힘들다.</td>
</tr>
<tr>
<td>Listening Strategies</td>
</tr>
<tr>
<td>4. 화자가 말하는 요지를 이해하려고 노력했다.</td>
</tr>
<tr>
<td>5. 듣기 할 때 사전 지식을 활용하여 다음 단어나 문장에 대한 예측을 하며 들었다.</td>
</tr>
<tr>
<td>6. 각각의 음소나 단어 등을 주의 깊게 들었다.</td>
</tr>
<tr>
<td>Speaking</td>
</tr>
<tr>
<td>7. 영어로 말하기에 자신감을 느꼈다.</td>
</tr>
<tr>
<td>8. 마음이 편해서 더 자주 대화에 참여했다.</td>
</tr>
<tr>
<td>9. 우리 그룹의 화상회의실에서 대화에 집중할 수 있어 더 자주 대화에 참여했다.</td>
</tr>
<tr>
<td>10. 시간의 융통성이 있어 더 자주 대화에 참여했다.</td>
</tr>
<tr>
<td>11. 자주 반복이나 명확한 설명을 요구했다.</td>
</tr>
<tr>
<td>12. 대화가 중단되었을 때 어색했다.</td>
</tr>
<tr>
<td>13. 내가 말하고 싶을 때 다른 사람의 말에 치어드는 것이 편했다.</td>
</tr>
<tr>
<td>14. 내용을 풀어서 상세히 설명하려고 노력했다.</td>
</tr>
<tr>
<td>15. 선생님보다 더 많이 영어로 말했다.</td>
</tr>
<tr>
<td>16. 더욱 클소리로 영어로 말했다.</td>
</tr>
<tr>
<td>17. 천천히 말하려고 노력했다.</td>
</tr>
<tr>
<td>18. 더욱 정확하고 또렷이 영어를 발음하려고 노력했다.</td>
</tr>
</tbody>
</table>

화상강의에 대해 전반적 장점이라고 할 수 있는 점이 있다면?

---

Key words: videoconferencing, meaning negotiation, task–based language learning
Author: Hyun-Gyung Lee (Sookmyung Women’s University): leeannehg@yahoo.co.kr

received: April 5, 2006
accepted: June 15, 2006
In spite of many potential benefits of whole language approaches in EFL classrooms, many Korean EFL classrooms still approach language as discrete parts and isolated pieces, with a great emphasis on the form of language rather than meaning. This paper explores how technology can support the principles of whole language by describing three technology-incorporated EFL activities: an online discussion board activity, a sound dubbing activity, and a PowerPoint Producer activity. Each activity provides the evidence of the way in which technology realized whole language classrooms and facilitated the students learning. These activities approached language as a whole, not in parts, and offered authentic language learning contexts and opportunities for learner-centered, content-based and collaborative learning through the use of different modalities. This paper will provide valuable insights to EFL teachers on how technology can be effectively embedded in EFL classrooms.

I. INTRODUCTION

In mainstream English education, the whole language approach has been a buzzword over the last couple of decades and this approach (or philosophy) to language learning shed new light on teaching methods in language classrooms, particularly in the U.S. Yet, it still feels remote in EFL classrooms in Korea. Many Korean English classrooms are heavily teacher-centered and lecture-based. Language is broken into pieces, simplified, and taught as discrete units. Learning to read often starts with phonics, and grammar is
broken down into even smaller pieces. The teaching sequence strictly follows that of first language acquisition, namely, listening–speaking–reading–writing. The curriculum in colleges and English institutes in Korea distinguishes between spoken and written language learning, and thereby offers separate courses for each language skill, which apparently implies that each language skill should be taught separately for effective language learning. Grounded in this assumption of language learning, fragmented pieces of language are introduced and taught in a decontextualized manner. Instructions are mostly concerned with form, rather than meaning. As a result, teachers find that students cannot make the whole out of parts and cannot generate meaning with the new language. Simply put, students do not acquire how to use the language in real contexts despite many years of learning English.

However, it is well known that the purpose of learning a language is its use for real purposes, not learning the language itself. The whole language approach promises many benefits to student learning and suggests the constructs of a learning environment which offers authentic uses of language to students. This paper will examine the principles of the whole language approach and discuss how it can benefit EFL classrooms. This paper will also explicate how technology supports the principles of whole language through three technology-mediated EFL activities. In these activities, technology provided real contexts of language use, multiple modalities, and interesting ways of learning. Technology also helped create meaningful interactions with others and the development of a learning community.

II. LITERATURE REVIEW

On the one hand, the competency–based approaches (often represented as the phonics approach) are anchored in the assumption that language can be broken down into smaller components and skills and that those pieces should be taught separately and sequentially (Mandel, 1980). On the other hand, the whole language approach focuses on deriving meaning, rather than acquiring individual skills (Roblyer & Edwards, 2000). The best axiom for the whole language approach is that learning happens best in integrated wholes rather than in decontextualized parts. Thus, the whole language approach places a great emphasis on authentic uses of language rather than acquiring simplified, disjointed, pieces or the memorization of formulaic parts. Learning with textbooks and listening to teacher’s lecture cannot be sufficient for effective language learning, but creating whole language
Learning environments is vital to providing authentic language input. Authentic language uses here mean the ordinary language that people use in their everyday lives. In this light, language learning should encompass all four language skills in an integrated way (Goodman, Goodman, & Hood, 1989).

Since language is, by nature, social behavior, the whole language approach emphasizes the social context of interactions within a community and its objects through literacy experiences. Whole language approach, beyond textbooks and classroom walls, brings the world outside into classrooms and connect students with the world. The whole language approach also values learners; it always starts with learners. In whole language classrooms, the curriculum begins with the learner’s inquiries and reflects their interests and needs. Therefore, whole language classrooms relinquish power and control to students about what and how they learn (Heine & Hornstein, 1996; Whittemore & Goodman, 1996).

Freeman and Freeman (1992) summarized whole language as: 1. lessons should proceed from whole to part; 2. lessons should be learner centered because learning is the active construction of knowledge by students; 3. lessons should have authentic meaning and purpose of learning; 4. learning should take place in social interactions and collaboration; 5. both oral and written language should be developed simultaneously; 6. lessons should include all four modes of language; and 7. lessons should involve the whole person, which applies both for teachers and students. The principles of the whole language approach are summed up in the following table, compared to common practices in EFL classrooms.

<table>
<thead>
<tr>
<th>Common Practices in EFL Classrooms</th>
<th>Whole Language EFL Classrooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning four language skills as discrete units</td>
<td>Learning the four language skills in a more integrated, holistic way</td>
</tr>
<tr>
<td>Learning takes place from part to whole</td>
<td>Learning takes place from whole to part</td>
</tr>
<tr>
<td>Oral language should precede written language</td>
<td>Oral and written language can develop simultaneously</td>
</tr>
<tr>
<td>Classrooms are teacher-centered</td>
<td>Classrooms are learner–centered</td>
</tr>
<tr>
<td>Learning is individual</td>
<td>Learning is collaborative, interactive, and social</td>
</tr>
<tr>
<td>Learning is transfer of knowledge and skills</td>
<td>Learning is an active construction of meaning by learners</td>
</tr>
<tr>
<td></td>
<td>Learning is a global event which involves the entire person.</td>
</tr>
<tr>
<td></td>
<td>Learning happens through different modes and modalities.</td>
</tr>
</tbody>
</table>

In short, the whole language approach is an educational philosophy and advocates more holistic practices, which require and involve the whole person, whole language, and
the whole context surrounding learning (Gooman, Goodman, & Hood, 1989).

In conjunction with the whole language approach, technology amplifies the benefits of the whole language approach by providing more authentic language learning environments and bridging the gap between learning language and using language (Kress, 2003; Lee, 2005b). Furthermore, the synaethetic feature of multimedia enables students to use language in a more integrated way and creates a space for ESL/EFL students who cannot often fully express themselves in an L2 (Nelson, 2006).

III. THREE TECHNOLOGY-INTEGRATED ACTIVITIES

This paper reports how technology-incorporated activities realized the whole language principles stated in the previous section. The participants and procedures of the activities will be described in each section, as the activities were embedded in different times and in different contexts. Data collection included the students’ work, questionnaires, interviews, and classroom observations. The collected data were analyzed based on each principle of the whole language approach. Although all three following technology-integrated activities were consistent with each whole language principle, this paper will focus on the three most salient principles in each activity.

1. Online Discussion Board

1) Participants and procedure

The online discussion board activity was launched in a multimedia English classroom in a college to further facilitate student interaction and discussion. This multimedia English class was designed to enhance student language competencies in all four language skills through the use of technology. The Korean students in this study shared a free online discussion board (www.moodle.com) with American students in three different colleges in the U.S. for two months. Both Korean students and American students majored in English education. Two Korean professors, three American professors, 65 students (34 Korean students and 31 American students) participated in the online discussion board. Among 34 Korean students, 21 students answered questionnaires and 12 students participated in interviews. The questions in the questionnaire included: 1) what they newly learned about the issues and movies under discussion, 2) what they liked most about the online discussion, and 3) what difficulties they experienced during the activity.
The English proficiency of the students was low–intermediate.

Three movie clips from *Finding Forrester* and *Lion King* were uploaded on the upper right corner of the discussion board. The students downloaded the movie clips, viewed and listened to them carefully, and discussed the issues pertaining to each movie on the discussion board. The issues discussed on the board included education, sex discrimination, Disneyfication, commercialism, racial discrimination, and cultural differences. The total number of the messages posted under the topic, "Critical Analysis of Film" was 271 during two months.

![The Online Discussion Board](image)

### 2. Connecting to the whole language approach

#### 1) Learning in an authentic context

It is a well–known theory that learning should be anchored in real–world or authentic contexts which make learning purposeful, useful, and meaningful (Heine & Hornstein, 1996). Particularly in language learning, real–world contexts are crucial elements in language learning. Yet, too often, language is delivered as decontextualized, isolated, pieces in Korean English classrooms.

In the present study the online discussion board became an authentic context for language learning. It fostered goal–oriented learning, as the students learned English by...
using the language for a real purpose, namely, communicating with others online. While the opportunities to use English in real contexts are still limited in Korean EFL students, the online discussion board expanded these opportunities so that they shared their ideas about the movies and the issues related to the movies. Whereas many other school learning situations are more or less artificial and fabricated (Lee, 2004), the students learned language through authentic contexts and for the real purpose for communicating with others during this activity. During this activity, the students had a unique opportunity to learn the language through communication with native speakers of English of their own ages. The messages posted on the online discussion board functioned as authentic linguistic input to the Korean students. The online discussion board provided comprehensible input contextualized in dialogues, in addition to facilitating increased output in the target language. While engaged in discussion board dialogues, the students produced a wider range of discourse and speech acts, such as argument, persuasion, compliment, criticism, greeting, and agreement. Thus, the online discussion board expanded not only the students’ linguistic competence, but also interactive and sociolinguistic competence.

In addition, the students in this study expanded their perspectives beyond their subjective views by sharing their opinions and thoughts on the discussion board. The students reported in the interview and the questionnaire that American students’ postings on the board “helped them see behind the scenes of the movie”, such as racism, sex discrimination, and commercialism, which they had never thought about before relating to the movies. The Korean students said that they were surprised to see how differently the movies were reflected by different audience in different contexts. In language learning, it is crucial to provide an opportunity for students to interact with people from a variety of cultures and social groups, so that they can expand their awareness of the language use of other social groups, including the target culture group (Freeman & Freeman, 1992). In the questionnaires and interviews, the students reported that the learning experience with the online discussion board improved their understanding of the language and the target culture (73 % of the respondents). Clearly, providing an authentic context heightened the students’ motivation. The log files confirmed that 100% of the students participated in the online discussion and they read more than 80% of the others’ messages on average. The Korean students participated in this study posted 7.2 messages (99 words for each student) on average, even though the course requirement was 4 messages for each student. In the questionnaire and interviews conducted at the end of the semester, the students (93%) said that they appreciated this valuable literacy opportunity.
2) Different modes and modalities

In traditional EFL classrooms, student learning experiences have been limited primarily to text and auditory. However, people learn in many different ways and traditional school education has not successfully accommodated students with different learning styles (Felder & Henrique, 1995). Thus, from the perspective of modality and multiple intelligences, limiting choices for modes and modalities means limiting the ways that students can learn language. Technology now offers more diverse ways of learning, that are more attuned to students with different learning styles. This, in turn, develops student cognitive flexibility – the ability to learn in different ways in different situations – and as a result, students can apply knowledge better to other situations (Watson, 2003).

The online discussion board opened up learning opportunities for both visual and aural learners by providing multimodal channels (movies and computer-mediated communication). This not only embraced different learning styles, but also helped the students develop their linguistic abilities by suggesting extralinguistic cues (e.g. video can be an important complementary cue to audio, particularly to less proficient students, as text can be). Visual cues also reduced the cognitive load and anxiety levels of the students while they listened to the movie. The students then moved from the visual and aural modes to the textual mode.

Coupled with in-class discussion, the online discussion board furnished the students with the opportunity to produce both spoken and written language. As reading can serve “as an important source of comprehensible input and make a significant contribution to the development of overall proficiency” (Freeman and Freeman, 1992, p. 142), reading others’ messages and discussing the issues on the online discussion board clearly encouraged the students’ oral production in English during in-class activities. Furthermore, the online discussion board pushed the students to articulate their ideas and thoughts and visually captured them so that they could revisit other’s ideas and reflect upon them without time constraints. This, in turn, also helped those with less verbal aptitude to participate in online and in-class discussions (Lee, 2005a).

Against the common assumption that oral proficiency should develop prior to written proficiency in EFL language classrooms, the whole language approach supports using and developing all four language modes simultaneously. Many previous studies argue that all four language skills should be integral parts of language classroom activities since the developmental processes of each skill interacts with and greatly influences each other. In other words, using all four language skills work synergistically to develop and support
each other. By implementing different learning modalities, the online discussion board created multiple routes for the students to acquire and internalize the target language and support the various cognitive processes involved in learning language.

3) Learner-centered learning

A learner-centered classroom is sensitive to individual learners’ needs and interests, helps them establish their own learning goals, allows learners to generate their own meaning, and accommodates different learning styles (Nunan, 1996). In other words, in a learner-centered classroom, students actively construct their own knowledge, rather than passively receiving information from the teacher. In traditional EFL classrooms, teachers deliver lectures, ask questions, and raise topics for class discussions or writing assignments. The students rarely respond to the teacher and seldom create dialogic interactions in class.

Contrarily, the online discussion board promoted a learner-centered classroom by increasing interactions among the students and decentralizing the physical figure of the teacher in the face-to-face classroom. As Warschauer (1995) also points out that “networked learning provides not only a medium but also stimulus... [with a] new emphasis on discovery-based learning and an interest in student-driven learning in a wider sense” (p. 204), on the online discussion board, rather than being confined to the topics addressed by the teacher, the students raised issues of their own interest and inquiry and discussed the opinions of others. Among the 87 threads, only 6 (6%) threads were started by the teachers, and the rest began with the students’ inquiry. During the interview, as Chang (2003) and Han (2004) also confirmed in their studies, the students reported that the online discussion board reduced their language anxiety and increased motivation for using English.

The participants’ messages on the online discussion board also supplied authentic linguistic input to the students, which replaced the traditional classroom text. This further facilitated a learner-centered classroom by deneutralizing the classroom text, which has always been a central figure to the students’ learning besides the teacher. As Lee (2004) also confirmed in her study of an electronic writing space, the students in this study, by using their own and others’ messages as an authentic text and reference of their argument in the online discussion board (e.g. “as Chungwon also mentioned,” or “As an extension of Suna’s idea on...”), solidified their ownership of learning. Evidently, the learner-centered learning environment of the online discussion board lead the students to active engagement with the activity and inevitably, with their own learning.
2. Dubbing movie clips

1) Participants and procedure

This dubbing activity was embedded in a college multimedia English class (the same class in the previous section). Twenty-one college students participated in this activity for two weeks (6 hours in total). All the students participated in questionnaires and interviews after the final exam. The questionnaires and interviews were open-ended, asking their overall learning experiences and attitudes toward the activity.

For the procedure, the instructor downloaded short clips (4 1/2 minutes) from an American movie from the Internet and saved them on the computer. Then, she showed the clips to the students with the sound off and asked them to guess what was going on in each movie clip. The students were allowed to watch the movie clips several times and took notes while watching them. Different movie clips were assigned to each group of the students. Next, the students wrote a script based on the visual cues of the video only. Each role in the movie clip was assigned to each group member and they practiced their roles, trying to match their voice act (performing their scripts only with voice, not with any other physical acts involved) with the video. Later, they performed their voice act in front of the class while they and other students were watching the movie clips. In the meantime, the instructor recorded their voice act, which she later dubbed over the original movie clips, using Adobe Premiere (figure 2). She then replaced the original audio of the
movie with the students’ voices. After all the groups performed their voice acts, they watched the movies again, this time, with the sound on. Thus, the students compared the original screen scripts with their own.

1) Connecting to the whole language approach

(1) Whole to Part

Most Korean English classrooms adapt part-to-whole instruction where the underlying assumption is that separate parts can make a whole. Hence, teachers present the language to students as separate skills. Textbooks simplify the language and break tasks into pieces so that students can learn by practicing the discrete parts of the language. In the same vein, a bottom-up approach is a preferred reading instruction in Korean English classrooms. Reading instructions usually begin with phonics. Only when the student is assumed to have mastered the phonics stage, can he/she move on the next stage, vocabulary, and then on to the sentence level. Writing is not an exception to the part-to-whole approach. In fact, writing is often merely reduced to a practice of grammar or translation exercises from Korean into English, thus, failing to generate meaning. Listening and speaking are also confined to formulaic role plays or drills and practice in isolation. In this situation, students seldom have an opportunity to use the new language for meaning making or communicating with others (Riggs & Hudelson, 1986).

However, the whole is more than the sum of the parts. Moreover, it is not guaranteed that students can construct the whole when the parts are learned in isolation. They may not be able to picture the whole at all, even though they spend a great deal of time and effort to master the individual parts. In fact, it is difficult to understand the individual parts when they are presented out of their context. Studying those meaningless parts for such a long time makes student learning more difficult and hinders motivation. To become more competent users of the new language, students need to be exposed to learning opportunities where they can approach the language as a whole within authentic contexts. As some previous research argues, students can develop better understandings of writing process and create better texts only when they are allowed to produce the whole text from the very beginning (Calkin, 1986; Graves, 1983). The same is true for other language skills. When students are exposed to unadapted, authentic, and whole language input, they can develop better linguistic sensitivity to the language.

Technology-incorporated literacy practices can fill in the gap between the part and the whole. By writing screen scripts for the dubbing activity, instead of concerning too much on the surface structures of the language, the students were allowed to focus on meaning
- how to make meaning in their scripts based on the visual cues of the movie clips. When the students were asked to write an essay for the topic addressed by the teacher in other writing situations, they often struggled with the blank paper, searching for vocabulary, grammar, and all the writing rules in their minds, which frequently precluded them from focusing on meaning. The students did not enjoy this type of writing activity and unfortunately, no matter how hard they struggled, many of them ended up with unsuccessful, not personally meaningful, writing pieces. The dubbing activity, in contrast, drew the students’ attentions more to meaning-making with the language, not the form of the language. This, however, did not result in more grammatical errors in the scripts compared to those in other writing situations. The students created five minute voice acts (six page scripts) on average and compared to the previous writing (personal essays on favorite movies), they made 21% less grammatical errors in their scripts. Since the students understood that the purpose of language is making meaning, and at the same time, did not overlook the importance of using the correct form of language for better meaning-making, effective communication with others and self-presentations were facilitated. This inevitably directed the students to reduce grammatical errors.

(2) Collaborative Learning

Social constructivism views knowledge as socially constructed and distributed within a community of practice, not residing inside an individual’s mind. Within this frame, collaboration is an essential key to learning, making authentic engagement with others in a certain discourse community vital, as “language develops when the language learner focuses on accomplishing something together with others rather than focusing on the language itself. So group activities ... are ideal” (Rigg and Hudelson, 1986, p. 117).

The dubbing activity was by nature a collaborative task, which required the group members to collaboratively construct the script, take each role, and practice the play together to perform in front of the class. In addition to the nature of the activity, the physical configurations of the computer lab naturally promoted collaboration among the students as physical centrality of the teacher was not as evident as in the classroom (Chapelle, 2001). Moreover, as the students did not regularly look at one another’s books or notebooks in the classrooms, they could easily view other students’ screens in the computer lab. This public display of the computer screens naturally led the students to compare and discuss their work and learn from others. Thus, the computer lab provided an effective zone of proximal development within which the students learned from more advanced peers and constructed knowledge collaboratively through negotiations within the learning community.
In the questionnaire, the students reported that collaboration allowed them to discover others’ strengths and complement their weaknesses, which, in turn, facilitated better outcomes. They appreciated their peers’ knowledge and skills both in language and technology, and utilized them for a maximum result.

3) PowerPoint Producer

(1) Participants and procedure

Seven Korean middle school students participated in the PowerPoint Producer activity in a after-school curriculum for three weeks (9 hours in total). Even though the participants in this activity were much younger than those in the other two activities, their English proficiency was no less than the college students due to their experiences living in English speaking countries for a few years. Since their English proficiency exceeded the average level of middle school students in public schools, they had an extra English class once a week (three hours each), where they produced multimedia-integrated language projects. For data collection, besides their products of the activity, in-depth individual interviews with all the students were conducted.

As the first step, they read different books on science from the Horrible Science Series for a week. Since each group (two or three students for each group) were assigned a different book, each group was asked to summarize their book and present it using PowerPoint to the whole group. To present the book to the class, each group needed to digest the content of the book thoroughly, and then discuss what to include in their presentation and how to deliver their content more effectively to their audience. Their discussion involved not only the content (both text and images) but also the format, such as organization, background, font, and layout. They created 10 page PowerPoint slides, which they believed included the most significant information appearing in each book. The instructor video-taped their presentations using PowerPoint Producer. PowerPoint Producer is a shareware, which can be downloaded from www.microsoft.com and used free of charge. This program allows users to incorporate movies into PowerPoint slides (the black window -in the upper lefthand corner - in Figure 3) so that their audience can browse each slide with actual presentation (including both video and audio) in Window Explorer. When the explanation on each slide finishes, it automatically moves to the next slide and explanation.
(1) Content Learning

Content may refer to different things in different eras in English education. Historically, it has been defined as grammatical structures, vocabulary, or communicative practices. According to the most recent definition, derived from content–based instruction, content means subject matter, encompassing themes and topics based on student interests and needs (Snow, 2001). Many previous studies ascertained the positive learning outcomes from the combination of language learning and content knowledge. Studies also found that content–based instruction increases intrinsic motivation (Cloud, Genesee & Hamayan, 2000; Snow, 2001).

Learning language through meaningful content rather than focusing on the language itself clearly helps students find the purpose of learning and increase student interest and motivation. Yet, too often, EFL classrooms in Korea focus mainly on the form of the language, which subsequently diminishes English education to the acquisition of discrete language skills and discourages content learning. Put briefly, students are forced to learn the language through drill and practice without extended opportunities to use the language. Thus, they do not realize that language is a tool to acquire knowledge, despite the fact that the four language skills and communication skills are often fundamental qualifications and pre–requisites for all other content areas of learning.

Technology can bridge the gap between learning the usage of language and using language in authentic contexts (Lee, 2005b). The students involved in this PowerPoint Producer activity used the language to accomplish their goal, not just learn about the language. As in the previous activities described earlier, the PowerPoint Producer activity required whole language, as it included reading, research, discussion, presentation
(listening at the same time), and writing. However, the students never learned or practiced language for its own sake. Instead, language naturally evolved and developed around content learning and the task. In this activity, the content knowledge, not the language, was placed as the center of language learning, and language was a tool to acquire content knowledge, evolution, energy, and light (the topics of the science books that they read). Therefore, the activity functioned as a meaningful context for language learning, which offered an authentic purpose of learning language and meaningful input. This also promoted the students’ motivation and interests in learning and transformed their learning experience into something more meaningful.

(2) Active Construction of Meaning

The PowerPoint Producer activity facilitated the active construction of meaning by emphasizing content-based and purposeful learning, instead of concentrating on the form of language. In fact, active involvement in learning and the construction of knowledge are essential to successful language learning, as thinking and learning are active processes, not only cognitively but also socially. During the activity, the students did not just depend on rote-learning or the passive reception of knowledge, but actively generated meaning, activated their knowledge about the topic, and connected their previous knowledge with new knowledge.

After reading the books, the students in each group summarized and reconstructed the text in a much more compact form for PowerPoint. This activity also required high order thinking skills, such as inferencing from their previous knowledge (e.g. checking what they already knew about evolution), evaluating the information (e.g. comparing their

![Figure 4](Image)
previous knowledge and new knowledge about evolution and comparing their knowledge with others’), deciding the hierarchy of information (e.g. deciding to include Darwin and Mendel as examples among many other theorists in evolution), and negotiating with the group members (e.g. deciding to use a timeline to explain the history of the earth instead of text).

To construct meaning, the students also incorporated images, charts, graphs, and tables, which delivered the content in a visual and more effective manner. While the other two technology-incorporated activities were geared toward viewing and listening to multimedia (thereby, receiving and consuming), the student actively partook in creating meaning through multimedia (producing) in this activity. As shown in Figure 3 and 4, the students orchestrated nonverbal and verbal symbols to generate meaning by complementing each other. The students employed nonverbal symbols to present what the text already presents (iconic use: e.g. the images of fossils next to the text to explain about the fossils) and to construct shared meaning together with the text, not simply illustrate it (indexical use: e.g. Figure 4) (McKillop, 1996). The experience of interacting with both verbal and nonverbal symbols is fundamental to language learning because, as Valmont (2003) stated, "the real world does not just reside in a verbal form, nor can be fully expressed by language" and moreover, “constructing meaning as you read printed words alone is quite differently from constructing meaning as you interact with multimedia.” (p. 34). This is especially important in the electronic era as students interact with nonverbal symbols everyday through the Internet and other multimedia. Shetzer and Warschauer (2000) also contend that “becoming literate is not just a matter of learning how to decode and put to paper letters and words, but rather a matter of mastering processes that are deemed valuable in particular societies, culture, and contexts” (p. 172). Hence, language education should help students become creative and critical users of nonverbal symbols as well as verbal symbols (Sung, 2004).

(3) Emphasis on productive skills

Unlike most EFL classrooms in Korea, which focus heavily on receptive skills – listening and reading, the PowerPoint activity furnished opportunities for productive skills – speaking and writing. During the 20th century, a variety of teaching methods have been developed in second and foreign language acquisition, and during the several transitions, EFL teachers vacillated between the emphasis on receptive skills and the emphasis on productive skills, even though this dichotomy is sometimes blurred because of the collaborative and interactive nature of making meaning. Traditionally, receptive skills have been stressed over productive skills in EFL classrooms. However, later in the 20 century
with the perspective of communicative language learning and the sociocultural view of language, language became viewed as social behavior among participants of the discourse community. Interpretation, expression, and negotiation are the best terms which represent these perspectives (Savignon, 2001). In these perspectives, productive skills have gained more significance in EFL classrooms.

Students in Korean EFL classrooms have very limited opportunities to engage in productive skills, often due to large class sizes. Another reason for this limited opportunity for productive skills is the school curriculum and textbooks, which do not allow spaces for productive skills. In addition, it is not always easy for the teachers to measure the productive skills of the students, particularly in large classes. For these reasons, the current curriculum and textbooks in Korea still rely immensely on receptive skills even though it has been decades since the communicative approach has gained popularity in Korea.

Like the other technology activities introduced in this paper, the PowerPoint Producer activity offered opportunities for the students to use speaking and writing skills through discussions, and by creating PowerPoint and presentation, as illustrated above. Each PowerPoint consisted of 10 slides, and presentation took 7 1/2 minutes on average. The presentation was lexically dense without much pause or hesitation, as the students took a memo and practiced prior to the presentation. The presentations included 819 words on average.

This activity allowed not only an authentic topic, task, and context for the students to use the language, but also visualized and finalized the product. While most speaking activities in EFL classrooms are momentary, the activity captured their presentations, so that they could share the presentations with others outside the classrooms. This also permitted the students to view the files, analyze their own and others’ performances after the presentation, and reflect on individual learning progress and outcomes, which could contribute to better performances in future.

IV. CONCLUSION

This paper has reviewed three technology-integrated EFL activities from the whole language approach - how these activities supported whole language principles and bridged the gap between traditional Korean EFL classrooms and whole language principles. As portrayed in the previous section, all three activities effectively incorporated the principles...
of the whole language approach (Table 2). Through these activities, the students learned
the new language by using it and interacting with others, not learning about the language
merely in textbooks and from the teacher’s lectures. During each activity, the students
actively participated in the learning process and collaboratively constructed knowledge
with their peers. Moreover, content-based learning activities allowed student
inquiry-driven and student-centered learning, which took into consideration the student as
a whole person, his/her previous knowledge, experiences, and interests.

In fact, technology played a key role in each activity by ceding power and control over
the learning process to the students by mediating the activities and thus, somewhat
diminishing the physical presence of the teacher and textbooks. In all three
technology-integrated EFL activities, language was approached as a holistic and integrated
whole within an authentic social context, rather than isolated bits and pieces. Technology
was not a mere tool but functioned as an authentic context of language learning. The
technology-incorporated language activities also transformed these activities into
project-based learning, which pushed the students to develop an effective balance between
receptive skills and productive skills, and between accuracy and fluency (Skehan, 1998).
Here, technology served as a venue for the expression of the students’ interests and
creativity, satisfied their own inquiry, and promoted their needs and motivation to
communicate and interact with others, which ultimately contributed to positive linguistic
outcomes and positive attitudes toward learning.

<table>
<thead>
<tr>
<th>The principles of the whole language approach</th>
<th>Board</th>
<th>Dubbing</th>
<th>Producer</th>
</tr>
</thead>
<tbody>
<tr>
<td>whole to part</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>all four language skills involved</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>contextualized learning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>content learning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>collaborative learning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>learner-centered, active learning</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>different learning modes and modality</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Although technology was a critical component to realizing whole language principles in
the activities described in this paper, the roles of teachers should not be overlooked in the
student learning process. Relinquishing power to students does not mean that the
teacher’s role is diminished. Instead, teachers are responsible for planning, designing,
orchestrating, moderating, evaluating, and re-designing activities to accommodate
students’ various needs, interests, and cognitive complexities.

Those who are interested in using technology in their language classrooms should consider the following: 1) if the infrastructure for technology is available, 2) if the cost is affordable; 3) if technology can be effectively and seamlessly embedded in the curriculum and which multimedia use is the most effective in their situations, 4) if the students are ready for technology-integrated project-based learning, and 5) what technology can do in the language classroom, which cannot be done without it.

In the electronic era, as technology becomes an everyday means of communication and education, to be a successful language learner, students are expected to acquire different sets of abilities from those of previous era, and it is the language teacher’s responsibility to help them thrive in this era. Since mere uses of technology are not sufficient for student needs, teachers need to constantly tailor class assignments, invent a wide range of tasks, maintain instructional interactions, and encourage students active participation in learning.

**REFERENCE**


Han, J. (2004). The effective use of real-time computer-mediated communication tools for the development of Korean EFL learners’ oral communicative competence. *Foreign


Key words: whole language approach, EFL, technology project-based learning

Authors: Sangmin Lee (Woosong University); mleepsu@yahoo.com

received: May 14, 2006
accepted: July 15, 2006

Integrative tests are superior to discrete-point tests in measuring students’ performance competence. Moreover, a dictation test, a prime example of integrative tests, has advantages when incorporated with multimedia. For this study, a dictation test using multimedia has been constructed and given to Korean high school students to investigate the extent to which it can be used as a valid testing tool reflecting students’ performance competence. Furthermore, it attempted to suggest how to implement the test to Korean high school students. In addition to the dictation test, a TEPS (Test of English Proficiency developed by Seoul National University) type of discrete-point test was given as a criterion test. The following conclusions were reached: 1) The scores of the dictation test showed high correlations with a paper-based test, showing a high validity of the test. 2) The passage presented in an incremental way could lead to the highest validity. 3) When the chunks were given twice consecutively, a higher discriminability was gained. 4) The item scoring method did not bring a discriminability power for Korean high school students, therefore, the exact word scoring method is recommended. 5) The survey results showed that there is not a problem administering a computerized dictation test.
I. INTRODUCTION

There is a growing demand for research on the development of a test tool to measure students’ communicative competence in foreign language teaching. Integrative tests are superior to discrete-point tests in measuring students’ performance competence (McNamara, 2001), and a dictation test, a prime example of integrative tests, has advantages when incorporated with multimedia. In this study, a dictation test using multimedia has been constructed and given to Korean high school students to investigate the extent to which it can be used as a valid test tool reflecting students’ performance competence.

The purpose of the study is to provide the answers to the following questions: 1) Can a dictation test using multimedia be a valid test tool that can be substituted for current dominant discrete-point tests? 2) What is the best way to insure high validity in presenting the text concerning its length and frequency? 3) Which type of scoring method is valid and practical? Finally, a survey on the dictation test using multimedia was conducted.

II. LITERATURE REVIEW

1. Discussion on Dictation Tests

A dictation test, which is an integrative test, is considered to reflect the nature of real-life communication better than a discrete-point test does. During the test, the test-takers are required to listen to a string of sound and based on what they’ve listened to, understand the meaning of the words in sequence. Therefore, it requires a high-level of language proficiency to take the test, integrating syntactic as well as vocabulary knowledge. Furthermore, it requires test-takers to activate their expectancy grammar to construct the meaning out of what they’ve listened to by using analysis-by-synthesis processing (Heaton, 1988). Oller (1971) claimed that a dictation test involves the ability to discriminate phonological words, the ability to draw meaningful or syntactic units, and the ability to spell the analysed units. In the case of a verbal form of dictation, repetition, Ur (2003) said that it is only when there is a high level of comprehension on the part of the repeater that a long passage can be accurately repeated. Thus a dictation test can measure both students’ listening skills and spelling ability.
2. Types of Dictation Tests

There are several kinds of dictation tests. First, a standard or full dictation (Valette, 1977) or complete dictation test (Paulston & Bruden, 1976) requires test-takers to write down everything they can hear. Secondly, a partial or spot dictation (Paulston & Bruden, 1976), or selective dictation test (Bebout, 1980) requires test-takers to fill in given blanks as they listen to a passage. Another type of dictation test is called dictation/composition or dicto-comp or grammar dictation. As the names imply it encompasses both dictation and composition. It differs from other types of dictation tests in that the whole passage is given at once. In this type of test, test-takers are required to produce what they’ve listened to after hearing the entire passage several times (Oller, 1986). Here key-words can be put on the board if necessary (Brown, 2001). In addition, a similar kind of test is called a dictogloss (Mayo, 2002). Dictogloss differs from the previous test in that test-takers are allowed to take notes as they listen to the passage. Finally, there are an elicited imitation and dictation with competing noise. The former requires test-takers to verbally repeat what they heard, or to reorder what they heard, and the latter presents the passage with noise (Oller, 1986).

3. Scoring Methods

The scoring method for a dictation test can be divided into two kinds based on its scoring unit: word-scoring method and item-scoring method. Here the ‘item’ refers to the unit presented between pauses (see Madesen, 1983; Valette, 1977, for various types of word-scoring methods).

Furthermore, the exact spelling or appropriate spelling scoring method can be employed based on the degree of the exactness it accepts. An appropriate spelling scoring method allows some degree of spelling or phonological errors; therefore, it tends to be influenced by the rater’s subjectivity (Cziko, 1982). In addition, conveyance of meaning can be used as a criterion for scoring (Savignon, 1982).

Oller (1986) introduced two kinds of scoring methods based on the frequency of errors test-takers show: the correct-words-in-sequence method and the error-counting method. The correct-words-in-sequence method is recommended for use when errors are frequent, and it counts the correct words in a correct sequence. On the other hand, the error-counting method can be used when errors rarely appear, and it deducts points for errors from a perfect score (Oller, 1986).
4. Things to Consider in Administering Dictation Tests

Rivers (1981) pointed out things to consider when you administer a dictation test: the difficulty level of the passage, the construction of items, and the way the test is presented. The way the test is presented includes the order in which it is presented, the frequency, the presence of noise, and includes many others. The difficulty level of the passage is recommended to be a bit beyond the students’ proficiency level (Madsen, 1983). The length of the passage depends on whether the test is given with other types of tests or alone. When it is used as an independent test, it is desirable to use approximately 125–200 words per passage, and when it is used as a sub-test, it is suggested to use passages with 75–100 words.

Brown (2001) described a typical dictation procedure as follow. First, the whole passage is presented once or twice at normal speed. Then, the passage is presented two to three words at a time with a pause between chunks. During the pause, the test-takers write exactly what they have heard. Finally, the whole passage is presented again at normal speed for the test-takers to check their answers. It is important not to repeat a particular word or phase at the students’ demand (Madsen, 1983). Morley (1974) introduced a dictation test which has four phases, including repetition.

Oller (1986) said that the pause should be placed so that each unit can form a meaningful chunk. While there is no absolute criterion in the length of each unit presented, it is better to give a pause every seven words, which will challenge the short-term memory load and provoke the test-taker’s higher cognition and reflection skills, rather than simple phonological imitation. On the other hand, Brown (2001) pointed out that it is usual to give a pause between every three to four words. Furthermore, the length of the pause is recommended to be long enough for the test-taker to read the chunk twice. In Cziko’s study (1982), he divided the number of words in one unit by 2.25 and rounded off to the nearest tenth to determine the length of the pause. Moreover, the speed the dictation test passage is given at is recommended to be normal speed or a moderate speed ranging from 160 to 190 wpm (Rivers, 1981).

In addition, Morris (1983) claimed that a passage for the dictation test has to be coherent. Madesen (1983) mentioned that if the passage selected for the test is part of a long passage, an introduction sentence which can assist with understanding the general idea of the long passage can be added at the beginning or the end. Taylor (1983) suggested using ‘raw dictation,’ which is a text that is not designed especially for a dictation test, but directly reflects real-life spoken language (Heller et al, 1995). And Weir (1990) pointed out that the content for the dictation test passage should consider the
learners’ educational context. Finally, punctuation should not be counted in scoring if it is not specifically required to indicate (Oller, 1986).

5. Benefits of a Dictation Test Using Multimedia

It is crucial to maintain consistent conditions when a dictation test is given to different groups of students to compare their language proficiency level (Valette, 1977). Therefore, employing multimedia in a dictation test would bring many advantages because they can help consistently control the factors to consider when a dictation test is given mentioned earlier (Oller, 1986; Rivers, 1981). With Automatic Speech Recognition–based TTS, speed and pronunciation can be controlled, and it comes in very handy in EFL situations where a native speaker is not readily available. In addition, the test can be given without concern for time and place barrier if it is incorporated with multimedia.

Choi (1991, 2005) mentions other benefits when multimedia is employed in language education. They enable the teacher to obtain the educational data such as students’ names, date, time, their response times, their scores, and many others. Here, the response time should be considered a crucial factor because a language use inevitably involves a time constraint. The time elapsed before the test-taker’s response is also an important factor since the dictation test only requires them to write what they hear (Ur, 2003; Chapelle, 2001). Language testing research has usually been centered on the product approach, but a more process-oriented approach including the time factor is necessary (Chapelle, 2001). Furthermore, test results can be obtained immediately after the test ends, and with the analysis of errors saved in the computer, the teacher can make a plan for the following lesson. In addition, computer scoring will lift the burden from the rater, especially in the case of full dictation, and will attack the intra- as well as inter-rater reliability problems.

III. RESEARCH METHODS

The following explains the participants, research period, and instrument including the paper–based test and the dictation test using multimedia.

1. Participants and Research Period

The participants for the study consisted of 120 first and second grade high school
students in Korea, 19 from a school located in the northern part of Seoul, 39 in the southern part of the city, and 62 from the Kyunggi area. The experiment was conducted during the months of September and November 2005. Originally 270 students from 4 different schools participated in the study; however, due to the out-dated computers the schools possessed, it was impossible to get all the data from the students.

2. Instrument

First, the paper-based test was conducted, followed by the dictation test. Then, the questionnaire was given to the students.

1) Paper-based Test

To obtain the validity of a dictation test, a traditional discrete-point of paper-based test was given. The paper-based test basically follows the format of the TEPS and two more composition questions were included (see Appendix 1).

2) Dictation Test Using Multimedia

(1) Test Construct

The dictation test is composed of 5 parts and the entire test lasts 10-20 minutes, depending on the test-takers. Each part has a coherent passage extracted from the 8th grade textbooks from the 6th curriculum to avoid passages the students may have encountered before (see Appendix 2). To compare results from parts presented differently, other factors held constant, such as the vocabulary level and a sentence complexity. For Part 1, the pause was given between every 2-7 words, and for Part 2, every 3-14 words. In Part 2, the length of each chunk becomes longer as the test progresses. In Part 3, sentences were given between pauses, and each sentence was given only once. However, in Part 4, each sentence was read twice consecutively. Finally, in Part 5, the entire passage was given at once.

In Part 1, each chunk consisted of less than 7 words, which does not challenge the short-term memory load. This is based on Miller’s (1956) “magic seven, plus or minus two” rules, which states in almost every case humans have the ability to learn anything close to 7 units. Chafe (1985) contended that usually about 7 words can be comfortably held in the working memory (p. 10). In Part 1, 2, 3, and 5, the frequency of the passage presented was held constant by one to see the influence the length of chunks presented. And in Parts 3 and 4, everything was given the same, except the frequency of the chunks
was given to see how the frequency affects test-takers.

(2) Procedures

Before the test starts, the directions are given in both written and spoken modes in Korean, and an example question is provided to help test-takers understand the test procedure. The test is programmed to proceed by clicking the button on the computer screen, and test-takers cannot return to a previous page. At the bottom of each page, the page number is shown. Each part proceeds in the following manner: 1) The whole passage is presented to get the general idea, 2) The passage is presented in segments, and the test-takers are to write down what they hear during the pauses, 3) After Part 1–5 end, the passages for each part are presented again, and the test-takers are supposed to correct their writing if necessary.

(3) Scoring Methods

To find out which scoring method is suitable to measure the general English proficiency of Korean high school students in an EFL setting, four different scoring methods have been adopted. The scoring was done by the researcher, and punctuation was not scored because the test did not indicate it was required. Because there were a number of errors in the students’ answers, the correct-word-in-sequence method was employed. For the first scoring method, the exact word scoring method was used, and one point was given only for the right word in the right sequence. This scoring method will come in handy when incorporated with computers. For the second scoring method, the appropriate word scoring method was used. One point was given for the right answer, and a partial credit of 1/2 point was given for a mis-spelled that is still recognizable. For the third scoring method, the exact item scoring method was adopted. According to the previous study, the item scoring method would give valid results, and reduce the scoring time when compared with the word scoring method (Cziko, 1982). To see if it could be applied to Korean high school students, the exact item scoring method was used. Finally, the appropriate item scoring method was employed. One point was given for the right item, and 1/2 point was given for an item that was recognizable. The following is an answer for the first sentence of part 4 from a subject for this study and the given scores.

Original sentence: For a long time, man wanted to fly like the birds.
Answer: for a long time man want to fly like a bird

Scores for the first sentence of part 4: EW 8, AW 9, EI 0, AI 1
3) Questionnaire

A survey was conducted after the two tests to find out the practicality of the dictation test using multimedia and the students’ opinions about the test. The survey consisted of 20 questions.

IV. RESULTS and ANALYSIS

The following presents the correlational analysis results between the scores of the paper-based test and the scores of the dictation test using various scoring methods, followed by the correlational analysis results between the dictation scores using exact word and appropriate word scoring methods. Finally, the survey results were discussed.

1. Correlation Between the Paper-Based Test and the Dictation Tests

1) Exact Word Scoring Method (EW)

Table 1 shows the average and standard deviation of the paper-based test score and the dictation test scores by exact word scoring method (EW). Table 2 represents the correlations between the score of the paper-based test and the scores of the dictation tests by EW method. In every case, their correlations were statistically significant at the level of .01. With the frequency being equal, the correlation between the score of the paper-based test and the score of Part 2 of the dictation test was the highest. This tells us that the test presented in an incremental way could lead to a higher validity than other methods when the EW scoring method is used.

<table>
<thead>
<tr>
<th>[Table 1] Descriptive Statistics (EW)</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper-based</td>
<td>11.2583</td>
<td>3.59153</td>
<td>120</td>
</tr>
<tr>
<td>EW 1</td>
<td>29.0333</td>
<td>9.14398</td>
<td>120</td>
</tr>
<tr>
<td>EW 2</td>
<td>23.9250</td>
<td>10.51383</td>
<td>120</td>
</tr>
<tr>
<td>EW 3</td>
<td>15.5000</td>
<td>8.32835</td>
<td>120</td>
</tr>
<tr>
<td>EW 4</td>
<td>21.2583</td>
<td>9.10582</td>
<td>120</td>
</tr>
<tr>
<td>EW 5</td>
<td>9.4583</td>
<td>9.19161</td>
<td>120</td>
</tr>
<tr>
<td>EW total</td>
<td>99.1750</td>
<td>41.91361</td>
<td>120</td>
</tr>
</tbody>
</table>
An Analysis of the Validity of the Computerized Dictation Test and Its Scoring Method

<table>
<thead>
<tr>
<th>[Table 2] Correlations Between the Dictation Test Scores (EW) and the Paper-based Test Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper-based</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>Paper-based</td>
</tr>
<tr>
<td>EW 1</td>
</tr>
<tr>
<td>EW 2</td>
</tr>
<tr>
<td>EW 3</td>
</tr>
<tr>
<td>EW 4</td>
</tr>
<tr>
<td>EW 5</td>
</tr>
<tr>
<td>EW total</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).

With the unit of the chunk presented being equal, Part 4 (.724) showed a higher correlation than Part 3 (.700). Therefore, it is assumed that when the chunks were given twice consecutively, students got higher scores and this type of test could reflect their proficiency level better.

2) Appropriate Word Scoring Method (AW)

Table 3 shows the average and standard deviation of the score of the paper-based test and the dictation test using the appropriate word (AW) scoring method.

According to Table 4, the scores of the paper-based test and the dictation tests correlated significantly at .01 level in all cases. With the frequency the chunk was presented at equal, Part 2 has the highest correlations with the paper-based test. Part 5 showed the lowest correlations. The results using the AW scoring method differ a bit from the results using EW scoring method, but Part 2 correlated highest while Part 5 showed the lowest correlations with the paper-based test in both scoring methods.

With the unit of the chunk being equal, Part 4 showed higher correlations with the paper-based test when compared to Part 3. This means that the way the chunk is presented consecutively twice could lead to higher validity in dictation tests when the AW scoring method is used.

<table>
<thead>
<tr>
<th>[Table 3] Descriptive Statistics (AW)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Paper-based</td>
</tr>
<tr>
<td>AW 1</td>
</tr>
<tr>
<td>AW 2</td>
</tr>
<tr>
<td>AW 3</td>
</tr>
<tr>
<td>AW 4</td>
</tr>
<tr>
<td>AW 5</td>
</tr>
<tr>
<td>AW total</td>
</tr>
</tbody>
</table>
3) Exact Item Scoring Method (EI)

Table 5 shows the average and standard deviation of the scores of the paper-based test and the dictation test. The perfect scores for Parts 1–5 were 10, 6, 4, 4, and 1 point, respectively.
Table 6 represents the correlations between the scores of the paper-based test and the dictation tests. The score of Part 5 showed very little correlation that is not statistically significant, which is very different from the two previous results. This is because the perfect score for Part 5 is one, and almost no one got a perfect score. Furthermore, other parts of the dictation test showed low correlations. With the frequency of the chunk given being equal, Part 1 showed the highest correlations with the paper-based test, and Part 5 the lowest. With the unit of the chunk being equal, Part 4 showed higher correlations with the paper-based test when compared to Part 3.

Figure 1 represents the relationship between the paper-based test score and the dictation test scores, showing how the dictation test scores can reflect the students’ proficiency level. In other words, with the paper-based test score, we can predict the highest score a student can get from the dictation test. For example, those who scored 6 or lower points on the paper-based test would never get a 3 or higher score on the dictation test, and those who scored an 11 or lower score on the paper-based test would never get a 4 or higher score on the dictation. In the same way, those who scored less than 12 points on the paper-based test never got 5 or more points, and those who got less than 15 on the paper-based test never got 6 on the dictation test.
To see who got the last segment in the Part 2, which is the longest one, right, the cross-tab analysis has been done for each item. As Figure 2 and Table 8 show, those who got the last item right were those who scored between 15 and 20 points on the paper-based test. Tables 8-13 show the relations between the scores of the paper-based test and the scores of each item in Part 2. From the tables we can conclude that as the item gets longer, only those who got higher scores on the paper-based test got it right, which means a well-constructed dictation test can be a great criterion-referenced test. Since Part 2 in this study showed high correlations with the paper-based test, it may seem to have the same results with the previous study, which concluded that a paragraph presented incrementally will lead to a high validity (Cziko, 1982; Fouly & Cziko, 1985). However, a difference has been found between this study and the previous one. The previous study suggested that those who get the same total score on the dictation would respond in a similar way to the same item, but the results from this study did not correspond with that conclusion.
For instance, those who got a total score of 2 on the dictation test got 4 and 17 points each on the paper-based test, and they responded in a very different way.
The results shown above imply that the exact item scoring method does not have discriminative power for Korean high school students. The differences between the previous study can be found in the following way. The subjects for the previous study were college students in an ESL setting, whereas the subjects for this study were high school students in an EFL setting. For that reason, it can be concluded that for those who have a lower level of English proficiency, the word scoring method rather than item scoring method would lead to more valid results. In fact, the previous study already mentioned that the suitable scoring method can differ depending on the situation (Cziko, 1982).

4) Appropriate Item Scoring Method (AI)

Table 14 shows descriptive statistics of the scores of the paper-based test and the dictation test scored by the appropriate item (AI) scoring method.

Table 15 shows the correlations between the two tests. Except for the score of Part 5, their correlations showed statistically significant at the level of .01. With the frequency of the chunk presented being equal, Part 1 showed the highest correlations. With the unit presented being equal, Part 4 (.552) had higher correlations with the paper-based test than Part 3 (.455).

<table>
<thead>
<tr>
<th>[Table 14] Descriptive Statistics (AI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td>Paper-based</td>
</tr>
<tr>
<td>AI 1</td>
</tr>
<tr>
<td>AI 2</td>
</tr>
<tr>
<td>AI 3</td>
</tr>
<tr>
<td>AI 4</td>
</tr>
<tr>
<td>AI 5</td>
</tr>
<tr>
<td>AI total</td>
</tr>
</tbody>
</table>
Generally, the AI scoring method brought the same results as EI, but the EI scoring method is better in that AI could be influenced by a rater’s subjectivity.

**Table 15** Correlations Between the Dictation Test Scores (AI) and the Paper-based Test Scores

<table>
<thead>
<tr>
<th></th>
<th>Paper-based</th>
<th>AI 1</th>
<th>AI 2</th>
<th>AI 3</th>
<th>AI 4</th>
<th>AI 5</th>
<th>AI total</th>
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<tr>
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<td>1</td>
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<td>.627(**)</td>
<td>.455(**)</td>
<td>.552(**)</td>
<td>.019</td>
<td>.678(**)</td>
</tr>
<tr>
<td>AI 1</td>
<td>.663(**)</td>
<td>1</td>
<td>.747(**)</td>
<td>.617(**)</td>
<td>.711(**)</td>
<td>.128</td>
<td>.500(**)</td>
</tr>
<tr>
<td>AI 2</td>
<td>.627(**)</td>
<td>.747(**)</td>
<td>1</td>
<td>.623(**)</td>
<td>.730(**)</td>
<td>.126</td>
<td>.884(**)</td>
</tr>
<tr>
<td>AI 3</td>
<td>.455(**)</td>
<td>.617(**)</td>
<td>.623(**)</td>
<td>1</td>
<td>.674(**)</td>
<td>.311(**)</td>
<td>.772(**)</td>
</tr>
<tr>
<td>AI 4</td>
<td>.552(**)</td>
<td>.711(**)</td>
<td>.730(**)</td>
<td>.674(**)</td>
<td>1</td>
<td>.184(*)</td>
<td>.865(**)</td>
</tr>
<tr>
<td>AI 5</td>
<td>.019</td>
<td>.128</td>
<td>.126</td>
<td>.311(**)</td>
<td>.184(*)</td>
<td>1</td>
<td>.203(*)</td>
</tr>
<tr>
<td>AI total</td>
<td>.678(**)</td>
<td>.936(**)</td>
<td>.884(**)</td>
<td>.772(**)</td>
<td>.865(**)</td>
<td>.203(*)</td>
<td>1</td>
</tr>
</tbody>
</table>

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

2. Correlations Between the Scores by EW and AW Scoring Methods

So far, we have looked at the correlations between the scores of the paper–based test and the dictation tests and found that the word scoring method could lead to more valid results than the item scoring method. Even though both the exact word and appropriate word scoring methods showed high correlations with the paper–based test, it is generally thought that the latter reflects students’ proficiency level better. However, it will be easier to adopt the exact word scoring method if we have the test scored by a computer. Therefore, to see if the appropriate word scoring method can be substituted for by the exact word scoring method, a correlational analysis has been done.

Table 16 shows the average and standard deviation of the scores of the dictation test by both scoring methods, and Table 17 shows the correlation between the scores by the two scoring methods. Each part showed very high correlations with a correlation coefficient of greater than .989. Therefore, we can conclude that the exact word scoring method can be employed for computer scoring and provide valid results. As a matter of fact, according to Tables 2 and 4, most of the time, except for Part 4 and 5, the dictation score by the EW scoring method showed higher correlations with the paper–based test than the scores by the AW scoring method. This could be interpreted that there were cases where it was not clear whether the spelling errors were significant or not, and it is possible that too many credits may have been given incorrectly.
### Descriptive Statistics (EW and AW)

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<td>21.2583</td>
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<td>AW 4</td>
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### Correlations between EI and AW

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<th>EW 4</th>
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<tr>
<td>AW 1</td>
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<tr>
<td>AW 3</td>
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<td>.845</td>
<td><strong>.989</strong></td>
<td><strong>.837</strong></td>
<td>.693</td>
<td><strong>.922</strong></td>
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<td>AW 4</td>
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<td>.848</td>
<td><strong>.992</strong></td>
<td>.657</td>
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<td><strong>.998</strong></td>
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<td><strong>.931</strong></td>
<td><strong>.928</strong></td>
<td><strong>.809</strong></td>
<td><strong>.998</strong></td>
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</table>

** Correlation is significant at the 0.01 level (2-tailed).

### Questionnaire Results

The survey was given to the 129 students who took the dictation test. Because only 120 students out of 129 took the paper-based test, the previous correlational analysis included only those 120 students who took both tests.

As Table 18 shows, the Cronbach alpha index is greater than .6; therefore, it is considered to be reliable. Table 19 shows the average and standard deviation of the survey question answers. From analysing each question item, the following results were found. First, it is stated that the ASR and NLP technology will have a great influence on the language testing area, and with it more reliable and practical performance tests will be possible (Choi, 2000). However, the students feel less certain when the test was given by computer. It is assumed this is because they have never taken a language test by computer, and therefore it is necessary for them to become familiarized with the computerized tests. Furthermore, it was found that the students were uncomfortable with
typing in English. Since more and more English language testings are adopting computers, English typing practice is required. Second, the students reacted to the pronunciation by TTS more positively than that of the non-native teacher. Therefore, using TTS is recommended, especially in an EFL setting where it is not easy to access to native speakers. Third, even though the dictation test using computers has a different nature from the traditional pen and paper test, with the help of the example question given at the beginning, the students did not have any problem adjusting to it. Finally, the difficulty level chosen by the students corresponded to their test scores except for one case, Part 5. The students thought that the test reflects their proficiency level well when they thought the questions hardest, but Part 5, which the students feel is hard, turned out to be the one with the lowest validity.

**Table 18** Reliability Analysis

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<td>.661</td>
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**Table 19** Average and Standard Deviation of the Survey Questions

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<th>Minimum</th>
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<td>5</td>
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Valid N (listwise) 129
III. CONCLUSIONS

For this study, a prime example of integrative tests, a dictation test, was constructed using multimedia and administered to Korean high school students, and the following conclusions have been reached. First, the scores of the dictation test showed high correlations with a paper-based test, showing a high validity of the test. The results correspond to the previous studies, and a dictation test can substitute for the traditional discrete-point tests or can be used as a performance testing tool.

Second, with different types of dictation passage presentation, it could be concluded that the passage presented in an incremental way could lead to the highest validity when the word scoring method was used. The passage presented by incremental chunks helps the test-takers to guess what comes next, and to use effectively a top-down strategy. In addition, with the item scoring method, as the item length gets longer, only those who got high scores on the discrete-point test answered correctly. That means a dictation test can be a great criterion-referenced testing tool, which can be constructed easily with different degrees of difficulty level created only by manipulating the length of the chunks to be given. Moreover, among the five different ways of presenting a dictation passage, a passage presented as a paragraph unit showed the lowest correlations with the criterion test. A dicto-comp type of dictation test gave too much information at once and placed a burden on students, that lead them to not answer the questions. Therefore, it is recommended for use as a teaching method rather than as a testing tool. Furthermore, it is found that the frequency of the presentation of the chunks of the passage affected the validity of the dictation test. When the chunks were presented twice, the test showed higher correlations with the traditional discrete-point test than when the chunks were presented only once. Even though different subjects would bring different results, for the participants in this study, when the chunks were given twice consecutively, a higher discriminability was gained.

Third, the item scoring method did not bring a discriminability power for Korean high school students, and the results of the exact word scoring method and the appropriate word scoring method showed little difference. In fact, with the exact word scoring method, both inter- and intra-rater reliability can be reduced and computer scoring can be easily adopted, which will eventually make scoring fast and easy. Therefore, it can be concluded that it is better to employ the exact word scoring method.

Next, the survey results showed that there is not a problem administering a computerized dictation test, although it is necessary for the students to become
familiarized with language tests using multimedia. A TTS can be made use of where and when it is not easy to get native speakers. Furthermore, if computers were adopted for scoring the test, it will reduce the labor on the part of the raters, and test scores can be obtained immediately.

Finally, the students surveyed thought that the dictation test tests their memory load rather than their language proficiency, which means their short-term memories have been challenged. Therefore, it is concluded that the dictation test reflects their individual language proficiency level differences. Moreover, the difficulty level chosen by the students corresponded to their test scores except for one case, Part 5. The students thought that the test reflects their proficiency level well when they thought the questions hardest, but Part 5, which the students feel is hard, turned out to be the one with the lowest validity.

This study showed that a dictation test using multimedia could be used as a performance test for Korean high school students and suggested the way the test should be presented and scored. Moreover, it shows the advantages of using multimedia in a dictation test.

REFERENCES


APPENDICES

1. The Paper-based Test (20 questions X 5= 100 points.) 20 min.

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<td>Appropriate response after listening to a dialogue (3)</td>
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<td>2</td>
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2. The Dictation Passage

Part 1
There are many people/ who work for us./ The milkman brings us milk/ every morning,/ and the paperboy/ brings us the newspaper./ The mailman brings letters to us./ And we must not forget the people /who clean the streets for us.

Part 2
New York City/ is the largest /and busiest city in the United States./ Several islands make up this city./ New York is famous for its many tall and wonderful buildings./ If you take a boat around the city, you can see the beautiful skyline.

Part 3
Bike riding is a popular sport today. In fact, it is getting more and more popular every day. Many towns and cities are building roads for bike riders. Every town wants to have such roads.

Part 4
For a long time, man wanted to fly like the birds. Many people made machines to fly in the
air, but they couldn’t fly. Some people put wings on their arms. Man tried and tried to fly.

Part 5
We live comfortably today. So we often forget that we need to work hard and save money and energy. There are some people who do not work hard and just waste money and energy. (*The words in italics have been given on the computer screen.)

Key words: computerized dictation test, integrative test, scoring method
Author: Lee, Sun Joo (Korea University); angell@korea.ac.kr

received: May 3, 2006
accepted: July 15, 2006
MEMBERSHIP APPLICATION FORM

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</table>

I hereby agree with the goals of KAMALL and submit this application.

**Applicant’s Signature**: ___________________  **Date**: ___________________

**Membership Fees**
- New Membership Fee: ₩40,000 ($40) including Annual Fee, ₩20,000 ($20)
- Overseas Membership Fee: ₩40,000 ($40)
- Life time Membership Fee: ₩300,000 ($250)
- Library Membership Fee: ₩100,000 ($100)

The payment should be made to Kookmin Bank account 027701-04-007991 (Cho, Sei-Kyung KAMALL), and a copy of the receipt must be mailed to the Secretary General with this application form.
한국 멀티미디어 언어교육학회
The Korea Association of Multimedia Assisted Language Learning(KAMALL)

446-701 경기도 용인시 기흥구 서천동 1번지
경희대학교 영미어학부 상기천(총무이사)
Tel: 031-201-2274, CP: 011-9729-9096
Email: kiwansung@khu.ac.kr 홈페이지: http://www.kamall.or.kr

■ 입회비: ₩20,000 (연회비 ₩20,000) ■ 평생회비: ₩300,000
국민은행 027701-04-007991 예금주 조세경

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멀티미디어언어교육학회 활동목적에 동의하여 회원임원직서를 제출합니다.

200   년     월     일

신청인 : ☐

한국멀티미디어언어교육학회장 귀하
Information for Contributors

Purpose

Multimedia-Assisted Language Learning, the journal of the Korea Association of Multimedia-Assisted Language Learning (KAMALL) is devoted to the application of technology to foreign language teaching and learning. Multimedia-Assisted Language Learning is a refereed journal and publishes articles, research studies, reports, book and software reviews, and professional news and announcements related to media technology, especially Computer-Assisted Language Learning (CALL), Multimedia-Assisted Language Learning (MALL) and Web-Based Instruction (WBI).

General

• Multimedia-Assisted Language Learning is published three times a year, in Spring (April), Summer (August, International Issue), and Winter (December).
  The language of the International Issue is normally English.
• Papers previously published or accepted for publication elsewhere will not be considered.
• Papers should be submitted to the Editor-in-chief:
  Prof. Inn-Chull Choi
  Dept. of English Language Education
  Korea University
  Anamdong 5-ga, Seongbuk-gu
  Seoul, 136-701 Korea
  Email: icchoi@korea.ac.kr

Submission of Manuscripts

• Submission Date: the spring issue, January 15
  the summer issue, May 15
  the winter issue, September 15
• Manuscript Length: No more than 25 double-spaced pages preferred (including abstract, references, notes, figures, and tables).
• Manuscript Format: MS-Word or HWP (Hangul Word-processing) format.
• Submission Requirements: Authors should submit their manuscript including an abstract of no more than 200 words through e-mail. Please include a cover sheet containing the title of the manuscript, name, affiliation, address, home, office, and mobile phone numbers, e-mail address, and key words of the manuscript.
편집위원회 규정

제1장 총칙
제1조 본 위원회는 한국 멀티미디어 언어교육학회 편집위원회라 칭한다.
제2조 본 위원회는 한국 멀티미디어 언어교육학회 회칙 제13조에 의거하여 학회 내에 둔다.

제2장 구성
제1조 편집위원회는 전공 분야별로 안배하여 20명 내외로 구성하고, 위원장과 이사, 위원 및 간사를 둔다.
제2조 편집위원장은 수석 부회장이 겸임하고, 임기는 부회장의 임기와 같다.
제3조 편집위원은 투고 논문을 세부 전공별로 심사할 수 있도록 각 영역 전문가를 고루 선정하며, 학술 연구 실적이 뛰어난 회원 중에서 학회 회장이 추천하여 이사회의 인준을 얻어 임명한다. 임기는 학회 임원의 임기와 같다.

제3장 기능
제1조 편집위원회는 학회지의 체제, 발간 횟수, 분량, 논문 심사 기준 및 투고 규정을 정한다.
제2조 편집위원장은 학회에 접수된 논문의 심사위원을 선정 의뢰하고, 편집위원회는 심사 결과를 참조하여 논문 게재 여부를 최종적으로 의결한다.
제3조 논문 게재 심사 이외의 편집위원회가 의결한 사항은 이사회의 인준을 거쳐 발효한다.
제4조 편집위원회는 학술지 투고 논문의 심사를 위해 심사위원의 선정과 게재 논문 결정을 위해 학술지 발간 기간에 맞추어 정기적으로 소집한다.
제5조 편집위원회는 편집위원장의 소집과 과반수 이상의 출석으로 성립되며 출석 위원 과반수 이상의 찬성으로 의결한다.

제4장 논문 심사 기준
제1조 내용의 적절성 : 논문은 멀티미디어를 활용한 언어교육의 이론과 실제에 관한 비판, 실험 논문, 새로운 제안 등의 내용이어야 한다. 인질 학문에 관한 논문은 멀티미디어를 활용한 언어 교육적 내용을 포함한 것이어야 한다.
제2조 내용의 독창성 : 논문의 내용은 국내외 학술지에 게재되지 않은 새로운 및 창조적인 것이어야 한다.
제3조 전개의 논리성 : 논문의 구성과 전개는 멀티미디어 언어 교육 이론을 근거로 논리적이고 명료해야 한다.
편집위원회 규정 201

제4조 연구 방법론의 타당성: 논문은 연구 문제 제기, 연구의 활용성 및 효과의 기대성 등에 대한 분석과 과정이 각각의 연구 방법에 적절해야 한다.

제5조 학문적 기여도: 논문의 내용은 멀티미디어 언어 교육의 이론과 실제를 창출하거나 발전시키는 데 기여할 수 있어야 한다.

제6조 형식적 적절성: 논문은 본 학술지 투고 규정에 적합한 형식을 갖추어야 한다.

제5장 심사 절차

제1조 접수: 발행 예정일 3개월 전까지 논문을 접수하고, 편집위원장은 투고 논문 도착 즉시 "접수 확인서"를 작성해서 저자(들)에게 전자우편으로 발송한다. 다만, 논문의 투고 규정이나 작성 요령을 지키지 않은 논문은 접수하지 않고 반송한다.
(발행 예정일: (1) 봄호-4월 30일, (2) 여름호-8월 31일, (3) 겨울호-12월 31일)

제2조 심사위원 선정: 편집위원장은 접수된 논문을 언어별, 전공별로 분류하고 회장단 및 편집이사와 협의하여 심사위원을 선정한다. 심사위원은 해당 언어 분야에서 학술 활동이 뛰어난 회원 중에서 3인을 선정한다. 이때 당해호의 투고자는 제외하는 것을 원칙으로 한다.

제3조 심사의뢰: 편집위원장은 해당 심사위원에게 심사 의뢰서, 심사 대상 논문 그리고 논문 심사서 양식을 보낸다. 이때 논문 투고자의 이름과 소속이 심사위원에게 알려지지 않도록 투고 논문에서 삭제해서 보낸다. 세부 분야가 동일한 논문이 2편 이상 투고 된 경우에는 한 심사위원이 2편 이상을 심사할 수 있다.

제4조 심사: 각 심사위원은 배당된 논문을 심사하고 '게재', '수정 후 게재', '수정 후 재심사', '반송'의 4등급으로 판정하고, 심사평 난에 판정의 근거를 구체적으로 기술한다.

제5조 심사 보고서 제출: 각 심사위원은 심사 결과를 KAMALL 심사보고서 양식에 구체적으로 작성하여 수정이 표기된 파일을 전자우편으로 편집위원장에게 보낸다. 수정을 제의하는 경우에는 수정할 곳과 방향을 구체적으로 지시한다.

제6조 편집위원 회의: 편집위원장은 편집회의를 소집하고 이 편집회의를 통하여 심사내용을 검토한다. 3인의 심사위원 중에서 2인 이상이 '게재' 혹은 '수정 후 게재' 이상을 부여하면 '게재'가, 2인 이상이 '반송'으로 부여하면 '게재 불가'로 판정한다. 2인 이상이 '수정 후 재심사'로 판정하면 수정 후에 다시 심사위원의 심사를 받아 '게재'의 판정을 받아야 한다.

제7조 결과 통보: 편집위원장은 심사결과 보고서와 수정 요구사항이 제시된 파일을 전자우편으로 투고자에게 송부한다.

제8조 기타: 게재하기로 결정되었으나 게재된 이후라도 다른 학술지에 게재된 적이 있는 논문이나 무단 도용이 밝혀진 논문에 대해서는 편집위원회의 의결에 따라 게재를 취소하고 일정 기간 동안 논문 제출을 제한한다.
한국 멀티미디어 언어교육 학회지 중요 양식 안내


1. 본문 속에서의 인용이나 괄호 안의 문헌 표기

1) 직접 인용 1: They stated, "The meanings of ‘audience’... tend to diverge in two general directions: one toward actual people external to a text, the audience whom the writer must accommodate; the other... listeners" (Kirsch & Roen, 1990, p. 14).
   * 위와 같이 인용문은 “ " 안에 넣고, 그 안에서 다시 인용이나 강조를 할 때에는 ' '를 쓴다. 인용의 문장이 끝나도 마침표는 괄호(참고 문헌의 정보)가 끝난 후에 찍는다. 괄호 안에는 보기처럼 저자, 연도, 쪽수를 쉼표로 분리하여 표기하고, p.(한 쪽의 경우) 혹은 pp.(여러 쪽의 경우) 뒤에 한 칸을 띄고 쪽수를 쓴다. 한글 논문도 이에 준한다.

2) 직접 인용 2: Kirsch and Roen(1990) pointed out that “The meanings of ‘audience’... tend to diverge in two general directions: one toward actual people external to a text, the audience whom the writer must accommodate; the other... listeners” (p. 14).

3) 직접 인용 3:
   According to Kirsch and Roen(1990):
   The meanings of ‘audience’... tend to diverge in two general directions: one toward actual people external to a text, the audience whom the writer must accommodate; the other... listeners (p. 14).
   * 위와 같이 직접 인용한 문장은 본문 기준으로 왼쪽 및 오른쪽 각각 "5 ch" 들여쓰기를 한다.

4) 간접 인용:
   (1) 한글 논문: 조세경과 이충현(1998)은 멀티미디어는 ...
   멀티미디어는 외국어 교수 및 학습에서 ... (조세경, 이충현, 1998).
   (2) 영어 논문: Ellington(1998) stated that multimedia is defined as ...
   Multimedia is defined as ... (Ellington, 1998)

5) 1명의 저자: Ellington(1998) stated that multimedia is defined as ...
6) 2명의 저자: 본문이 영어이면 "and"로, 한글이면 "과/와"로 연결하고, 괄호 속에서는 "&"를 사용한다.
   (1) 한글 논문: Tomlinson과 Henderson(1995)은 그들의 선행연구(Tomlinson & Henderson, 1991)에서 ...
   (2) 영어 논문: Tomlinson and Henderson(1995) reported that their previous study(Tomlinson & Henderson, 1991) showed ...

7) 3~5명의 저자: (1) 처음 언급할 때는 모든 저자의 이름을 표기하고, (2) 그 다음부터는 영어 논문에는 "et al."로, 한글 논문에서는 "등"이나 "외 3인"이라는 식으로 표기한다.
   (1) 한글 논문: Ahmad, Corbett, Rogers, 와 Sussex(1985)는 ...
   영어 논문: Ahmad, Corbett, Rogers, and Sussex(1985) found that ...
   (2) 한글 논문: Ahmad 등(1983)은 컴퓨터는 ... 혹은 Ahmad 외 3인(1983)은 컴퓨터는 ...
   영어 논문: Ahmad et al.(1985) stated that computers should be used for ...

8) 6명 이상의 저자: 처음 언급할 때부터 영어 논문에는 "et al."로, 한글 논문에는 "등" 혹은 "외 5인"으로 표기하고, 참고 문헌(References)에는 이름을 모두 표기한다. et al.은 라틴어 et alii(and others)의 약어이므로 al.에만 점을 사용하고, 이탤릭체로 표기하지 않는다.

9) 여러 저자를 괄호 안에 소개: 여러 저자를 소개할 경우, 알파벳 순으로 배열하고, 세미콜론(;)으로 분리한다. 동일 저자의 것은 연대 순으로 배열하고, 쉼표로 분리한다.
   Hill(1988, 1990, 1995) reported that some research studies(Ahmad et al., 1985; Bangs, 1987; Higgins, 1988; Windeatt, 1990) dealt with a network-based ...

10) 동성 이명(同姓異名)의 저자들: 본문에서는 이름의 약자를 사용하여 혼동을 피한다. 비록 연도가 다르더라도 이름의 약자를 사용하여 표기한다.
   (1) 외국인 저자: F. R. Jones(1993) and G. Jones(1986) pointed out that ...
   (2) 한국인 저자: 한국인들은 성만으로는 혼동이 많으므로, 원 저자의 영문 이름 표기 방식에 따라 성 앞에 이름의 머리글자(Min-Su, Kim ⇒ M-S. Kim)를 쓴다. 한글 논문에서 한국인 저자는 성명을 다 쓴다.

2. 표(Table)나 그림(Figure) 자료를 그려 넣는 경우
   표나 그림 자료는 편집하는데 제한점이 많이 있으므로 다음 크기에 준하여 넣는다.
   1) 표: 한 면에 넣을 수 있는 표의 최대 한도의 가로 크기는 14cm, 세로의 크기는 표의 타이틀을 포함하여 20cm로 한다. 표의 제목(대고딕 9.5, 줄간격 150%)은 표의 위쪽 중앙에 위치하여 다음 보기와 같이 쓴다.
**Table 1** The Subjects 또는 [표 1] 실험 대상

<table>
<thead>
<tr>
<th>Cognitive strategies</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word level strategies</td>
<td>61 38.36</td>
<td>26 52</td>
</tr>
<tr>
<td>Comprehension level strategies</td>
<td>98 61.63</td>
<td>24 48</td>
</tr>
</tbody>
</table>

2) 그림이나 출력 화면: 한 면에 넣을 수 있는 그림의 최대 화면의 가로 크기는 14.5cm, 세로 길이는 (그림의 타이틀을 포함하여) 21cm로 한다. 그림의 제목(데코타 9.5, 줄간격 150%)은 그림의 아래 중앙에 위치하며 아래 보기와 같이 쓴다.

![Figure 1](image.png)

**Figure 1** The Main Screen of Dave Sperling's Internet Guide 또는 Dave Sperling의 인터넷 가이드의 주화면

3) 영상 자료: 영상 자료는 컴퓨터에서 편집이 안 되므로 가장 화질이 좋은 것으로 별도로 출력하여 수정분과 함께 제출하여야 한다.

3. 참고 문헌 목록(References) 표기

참고 문헌에는 논문에 언급된 것만을 빠짐없이 저자 성의 알파벳순으로 싣는다. 한글 논문의 참고 문헌 목록에 한글 문헌과 영어 문헌을 싣을 경우, 한글 문헌을 먼저 가나다순으로 싣고, 영어 문헌을 저자 성의 알파벳순으로 싣는다. 한국어 참고 문헌 표기 방법은 영어에 준한다. 단 논문을 영문으로 쓴 경우, 참고문헌에 싣을 한국어 저작은 필자와 논문 및 책제목을 Yale 표기법의 로마자로 표기하고 [ ] 안에 영어로 번역을 넣는다.
1) 학술지의 논문(Journal Article)

2) 책(Book)

3) 편집된 책에 실린 논문이나 장(An Article or Chapter in an Edited Book)

* 책 혹은 논문의 저자, 연도, 제목 등은 저널이나 책에서의 표기 방법과 같다. 그러나 편 저자 (Ed., 혹은 Eds.)의 성명은 책 혹은 논문의 저자의 표기 방법과는 달리 이름의 약자를 먼저 쓰고 성을 뒤에 쓴다.
4) 잡지(Magazine Article)
* 잡지 기사는 월간일 경우에는 출간 달까지 표기하고, 주간일 경우에는 두 번째 보기와 같이 달과 일까지 표기한다.

5) 뉴스레터(Newsletter)

6) 신문기사(Newspaper Article)
* 신문 기사는 날짜까지 표기한다. 또한 기사가 비연속적으로 분리된 경우에는 위와 같이 해당 면을 표기한다.

7) 연구 보고서(Report)
* 보고서의 제목을 이탤릭체로 한다. 연구보고서를 ERIC에서 입수한 경우 위와 같이 ED 번호를 괄호 안에 밝혀 표기한다.

8) 학회 발표 논문(Proceedings of Meetings and Symposia)


* 발표 논문집이 출간된 경우 논문 제목은 보통체, 논문집의 이름은 이탤릭체 표기한다. 이와 반대로 미 간행 발표 논문집일 경우에는 논문 제목은 이탤릭체, 논문집의 이름은 보통체로 표기한다.

9) 학위 논문 (Doctoral Dissertations and Master’s theses)


10) 인터넷 자료 (Internet Resources)

(1) 온라인 저널 (On-line Journal)


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2) 전자우편 (E-mail)
Lunn, F. (1996, June 18). Summary of responses to request for CALL lab info. TESLCA-L [Discussion list]. Retrieved December 18, 1996, by e-mail: listserv@cunyvm.cuny.edu.

3) 웹사이트 (Website)


11) 컴퓨터 프로그램, 소프트웨어 혹은 프로그래밍 언어 (Computer program, Software, or Programming language)
논문 투고 규정

1조 논문의 내용
멀티미디어 언어교육의 이론 및 실제에 관한 내용, 즉 멀티미디어 외국어교육 교과과정, 멀티미디어를 활용한 교수 및 학습 방법, 멀티미디어 외국어교육 수업 모형, 멀티미디어 이학실 구축과 활용 방안, 교사 교육, 코스웨어 및 소프트웨어 설계, 코스웨어 및 소프트웨어 비평 등에 관한 연구로서 교육적인 내용이 함축되어 있어야 한다. 또한 국내외의 학회지에 게재되지 않은 논문으로서 창의적인 내용이어야 한다.

2조 원고 제출
1) 심사용 논문은 "아래아 한글(호글)"로 작성된 파일을 전자우편으로 편집위원장에게 제출한다. 별지에 투고자의 논문 제목, 성명, 주소, 전화번호(집, 근무처 및 휴대폰), 팩스 번호, 전자우편 주소를 명기한다.
2) 수정 보완을 요구한 논문의 최종 본은 "아래아 한글(호글)"로 작성된 파일을 전자우편으로 편집위원장에게 제출한다.
3) 최종 교정을 위한 편집원고는 출판사에서 저자(들)에게 전자우편으로 전송하며, 저자(들)는 이를 인쇄하여 완벽하게 교정한 교정지를 우편으로 정해진 기한내에 출판사에 등기속달로 우송한다.
4) 마감 일자는 다음과 같다.
   (1) 봄 학술지: 1월 15일까지
   (2) 여름 학술지: 5월 15일까지
   (3) 겨울 학술지: 9월 15일까지
5) 원고 보낼 곳:
   136-701 서울시 성북구 안암동 5가 고려대학교 영어교육과
   최인철 교수 (수석부회장/편집위원장)
   Tel: 02-3290-2358 M.P: 011-9719-7078
   Fax: 02-3290-2358
   Email: icchoi@korea.ac.kr

3조 논문의 체제
1) 논문의 전체 길이는 학회지 기준 25쪽 이내로 한다.
2) 논문은 A4 용지 크기에 작성한다.
3) 논문의 위, 아래 여백은 42mm로, 왼쪽, 오른쪽 여백은 35mm로 머리말, 꼬리말은 12mm 한다.
Jerry W. Larson (Brigham Young University)

This article begins by exploring benefits associated with using computers in language testing in such areas as test preparation and test delivery, ...

I. INTRODUCTION (혹은 서론)

Over the years various techniques and innovations in language testing...

II. 장 제목

1. 절 제목

Certain features of the computer ...

1) 소 제목

(1) 세부 제목

① 미세 제목

2. 절 제목

각주
REFERENCES (혹은 참고 문헌)
<신령 경명조, 영문일 경우 대문자, 가운데 정렬, 줄 간격 160%, 문단 간격: 아래 4mm, 장평 95%, 자간 -8%>
<1줄 띄움>

APPENDIX 혹은 APPENDICES (혹은 부록)
<신령 경명조, 영문일 경우 대문자, 13, 가운데 정렬, 줄 간격 160%, 문단 간격: 아래 4mm, 장평 95%, 자간 -8%>

1. 부록 소제목
<신령 태고딕, 영문일 경우 각 단어의 첫 자만 대문자, 11, 문단 간격: 위 5mm, 아래 3mm, 장평 95%, 자간 -10%>

Key words: CALL, Internet-based language learning, text-chat
<신령조, 10, 줄간격 160%: 주제어는 영어로 표기한다.>

Author(s): Kim, Cheolsu (Hankuk University, 1st author); ckim@hankuk.ac.kr
Park, Jinju (Gyounggi University, 2nd author); jpark@kyounggi.ac.kr
Hong, Kildong (Daehan University, 3rd author); kdhong@daehan.ac.kr

4조 기 타

1) 영어 논문 제목에는 이름과 성의 순서(예: Min–Su Kim)로 하며, 영문 초록 및 표지 목차에는 성과 이름 순(예: Kim, Min–Su)으로 통일한다. 단, 논문 투고자의 특별한 요청이 있을 시에는 투고자가 정한 철자법을 따른다.
3) 게재로 결정된 원고의 교정은 투고자가 책임을 지고 행한다.
4) 투고자는 논문 게재 시 소정의 교정료를 납부하여야 한다. 기준 높수 초과 시에는 한 쪽당 1 만원을 추가로 부담하여야 한다.
5) 회원으로 가입한 후 6 개월이 지나야 논문을 투고하여 게재할 수 있다.
6) 게재된 논문의 투고자에게는 학회지 3 부를 증정한다.
7) 게재 예정 증명서는 편집 위원회에서 ‘게재 가’로 결정된 이후에만 발급 받을 수 있다.
Multimedia-Assisted Language Learning

Vol. 9, No. 2 Summer 2006

발행인: 조 세 경
발행처: 한국 멀티미디어 언어교육학회
연락처: 446-701
경기도 용인시 기흥구 서천동 1번지
경희대학교 영미어학부
송무의사 성기완
Tel: 031-201-2274, CP: 011-9729-9396
Email: kiwansung@khu.ac.kr
홈페이지: http://www.kamall.or.kr
발행일: 2006. 8. 31
제작처: 북코리아
서울시 마포구 공덕동 173-51번지
TEL: 02)704-7840/7845 FAX: 02)704-7848
홈페이지: http://www.ibookkorea.com
이메일: sunhaksa@korea.com

학회구좌: 국민은행 027701-04-007991 (조세경)