Multimedia-Assisted Language Learning

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

Vol. 12, No. 2
Summer 2009
The Korea Association of Multimedia-Assisted Language Learning (KAMALL)

Founded in 1997 for promoting the teaching/learning of foreign languages through multimedia

**Board Executives**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>President</td>
<td>Inn-Chull Choi (Korea University)</td>
</tr>
<tr>
<td>Vice Presidents</td>
<td>Chung-Hyun Lee (Hankuk University of Foreign Studies)</td>
</tr>
<tr>
<td></td>
<td>Jae Kyung Kim (Pai Chai University)</td>
</tr>
<tr>
<td></td>
<td>Jin-Kyong Ae (Korea Institute for Curriculum and Evaluation)</td>
</tr>
<tr>
<td></td>
<td>Daejin Kim (Seoul National University of Technology)</td>
</tr>
<tr>
<td></td>
<td>Duck-Gi Min (Chongju National University of Education)</td>
</tr>
<tr>
<td></td>
<td>Ki-Wan Sung (Kyung Hee University)</td>
</tr>
<tr>
<td>Secretary Generals</td>
<td>Heyoung Kim (Chung-Ang University)</td>
</tr>
<tr>
<td></td>
<td>Jungtae Kim (Pai Chai University)</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Sangmin Lee (Kyung Hee University)</td>
</tr>
<tr>
<td>International Affairs</td>
<td>Ho Lee (Chung-Ang University)</td>
</tr>
<tr>
<td>Officers</td>
<td>Dan Craig (Indiana University)</td>
</tr>
<tr>
<td>Public Relations Officer</td>
<td>Young Woo Cho (Pai Chai University)</td>
</tr>
<tr>
<td>Auditor</td>
<td>Hee-Jeong Ihm (Seoul National University of Education)</td>
</tr>
<tr>
<td>Editorial Board</td>
<td>Haedong Kim (Hankuk University of Foreign Studies)</td>
</tr>
<tr>
<td>Members</td>
<td>Jie-Young Kim (Chung-Ang University)</td>
</tr>
<tr>
<td></td>
<td>Namhee Kim (Hanyang Cyber University)</td>
</tr>
<tr>
<td></td>
<td>Seo Young Yoon (Hankuk University of Foreign Studies)</td>
</tr>
<tr>
<td></td>
<td>Jeong A Lee (Hankuk University of Foreign Studies)</td>
</tr>
<tr>
<td></td>
<td>Yoonjung Cha (Hanshin University)</td>
</tr>
<tr>
<td></td>
<td>Tae-Young Jeong (The Korea Military Academy)</td>
</tr>
<tr>
<td></td>
<td>Tae-Eun Kim (Soongsil University)</td>
</tr>
<tr>
<td></td>
<td>Hosung Choi (Hankuk University of Foreign Studies)</td>
</tr>
<tr>
<td></td>
<td>Bong Kyu Kim (Sunghsin Women’s University)</td>
</tr>
<tr>
<td></td>
<td>Sujung Park (Hanyang Cyber University)</td>
</tr>
<tr>
<td></td>
<td>Richard Lynch (Korea University)</td>
</tr>
<tr>
<td>Editorial Committee</td>
<td>Chung Ja Kwon (Sogang University)</td>
</tr>
<tr>
<td>Members</td>
<td>Daejin Kim (Seoul National University of Technology)</td>
</tr>
<tr>
<td></td>
<td>Sung-Yeon Kim (Hanyang University)</td>
</tr>
<tr>
<td></td>
<td>Youngwoo Kim (International Graduate School of English)</td>
</tr>
<tr>
<td></td>
<td>Jin Seock Kim (Korea Institute for Curriculum and Evaluation)</td>
</tr>
<tr>
<td></td>
<td>Heyoung Kim (Chung-Ang University)</td>
</tr>
</tbody>
</table>
Ki-Wan Sung (Kyung Hee University)
Eunkyung Sung (Cyber Hankuk University of Foreign Studies)
Dongkwang Shin (Korea Institute for Curriculum and Evaluation)
Sangmin Lee (Kyung Hee University)
Wonho Yoo (Sogang University)
Hyun-Woo Lim (Hankuk University of Foreign Studies)
Sei-Kyung Cho (Kyung Hee University)
Kyung-Whan Cha (Chung-Ang University)
Seonghee Choi (Kyonggi Institute of Technology)
Heekyong Choi (Gyeongin National University of Education)
Hee-Jeong Ihm (Seoul National University of Education)
Jong-Bai Hwang (Konkuk University)
Jungtae Kim (Pai Chai University)
Duck-Gi Min (Cheongju National University of Education)
Beom Yoo (Chungbuk National University)
Chang-In Lee (Pai Chai University)
Kyutae Jung (Hannam University)
Kyong-Hyun Pyo (Dankook University)
Maria Oh (Jeonju National University of Education)
Jae Chul Choi (Chonbuk National University)
Dongkyoo Kim (Busan National University of Education)
Shin-Hye Kim (Keimyung University)
Chongwoon Park (Pukyong National University)
Ju-Seop Lee (Cheju National University)
Dan Douglas (Iowa State University)
Jamie Myers (Penn State University)
David Jonassen (University of Missouri)
Steve Thorne (Penn State University)

Chang-Yong Shim (Gyeongin National University of Education)
Jinkyu Park (Kyung Hee University)
Keun Huh (Hannam University)
Sunhee Hwang (Samreung Elementary School)
Joo-Ri Chang (Deungehon Elementary School)
Hee Chul Jun (Yongcheon Elementary School)

Ji Young Nam (Korea Polytechnic University)
Yoo-Ah Jun (Korea Institute for Curriculum and Evaluation)
Young Joo Kim (Pai Chai High School)
Mikyung Oh (Puchonbuk High School)
Seon Hee Park (Sutaek High School)
So-Ra Jung (Sungsa High School)
Hyo-Eun Lee (Noil Middle School)
Soyoung Kim (Changdong Middle School)
Il Ee Park (Chongam Middle School)
Yae-Jin Lee (Mansoo Middle School)
The Journal of KAMALL is published three times a year in April, August, and December. For a membership application and other information, write to:

KAMALL
Prof. Jungtae Kim, Secretary General
Dept. of TESOL, Pai Chai University
Doma2-dong, Seo-gu, Daejeon-si, Korea, 302-735
Email: kim.jungtae@gmail.com
Tel: 042-520-5913
C.P: 010-7239-6104

Annual membership fees are ₩20,000 for individuals and ₩100,000 for the library and institution with the postage included. The fee for admission to KAMALL is ₩20,000 for individual membership. The life-time membership fee is ₩300,000.

Copyright © The Korea Association of Multimedia-Assisted Language Learning
<p>| 고 문 | 김성억(한남대), 김홍배(고려대), 배두본(한국교원대), 최수영(한국교원대), 김인식(동덕여대), 조성경(경희대) |
| 자문위원 | 김영기(오리엔트 AV), 김영이(EKLC), 김성수(영글러쉬무루), 이찬규(신학사), 박용(서일시스템) |
| 회장 | 최인철(고려대) |
| 부 회장 | 수석 (편집 및 출판) 이충현(한국외대) |
| | 기획 및 조정 김재영(매제대) |
| | 학술 연구 김성영(교육과정평가원) |
| | 회원관리 및 프로그램개발 김대진(서울산업대) |
| | 교육 및 연수 민택기(청주교대) |
| | 홍보 및 설외 성기완(경희대) |
| 총무이사 | 김혜정(중앙대), 김정태(매제대) |
| 국제이사 | 이호(중앙대), Dan Craig(Indiana University) |
| 홍보이사 | 조영우(매제대) |
| 재무이사 | 이상민(경희대) |
| 감사 | 임희정(서울교대) |
| 편집 이사 | 상임이사: 김해동(한국외대) |
| | 김남회(한양사이버대), 김봉규(성신여대), 김성연(한양대), 김지영(중앙대), 김태은(숭실대), 박수정(한양사이버대), 윤서영(한국외대), 이상훈(한국외대), 정태영(육사), 차은정(한신대), 최효성(한국외대), Richard Lynch(고려대) |
| 편집 위원 | 국내 |
| 권정재(서강대), 김태진(서울산업대), 김동규(부산교대), 김신채(계명대), 김은희(한양사이버대), 김영우(국제영어대학원), 김성태(매제대), 김진식(교육과정평가원), 김혜영(중앙대), 민택기(청주교대), 박종원(부경대), 성기완(경희대), 신동 ')' 교육과정평가원), 성순경(서울외국어대), 오마리아(선우교대), 유범(충북대), 윤형호(서강대), 이상민(경희대), 이주성(서울교대), 이창인(매제대), 임원우(한국외국어대), 정규대(한남대), 조재경(경희대), 차경환(중앙대), 최성회(경기공업대), 최재철(전북대), 최재경(경인교대), 표경현(단국대), 한동영(이화여대), 황종배(건국대) |</p>
<table>
<thead>
<tr>
<th>학술 연구 및 교육 이사</th>
<th>해외</th>
</tr>
</thead>
<tbody>
<tr>
<td>초등</td>
<td>Dan Douglas(Iowa State University), David Jonassen(University of Missouri), Jamie Myers(Penn State University), Steve Thorne(Penn State University)</td>
</tr>
<tr>
<td>중등</td>
<td>장합미(경인고등학교), 박진규(성균관대), 김수영(서울외국어고등학교), 이현희(서울여자외국어고등학교)</td>
</tr>
<tr>
<td>대학 I</td>
<td>성남이사(경남학부), 김정우(경남대)</td>
</tr>
<tr>
<td>대학 II</td>
<td>김영미(고려대), 윤현주(한국외국어대), 이경희(연세대), 염용영(한양대)</td>
</tr>
<tr>
<td>외국어</td>
<td>성남이사(고려대), 김영규(연세대)</td>
</tr>
<tr>
<td>인구 (교수학습)</td>
<td>성남이사(한국교원대), 이재근(한국교원대)</td>
</tr>
<tr>
<td>연구 (교육공학)</td>
<td>성남이사(한국교원대), 이준(한국교원대), 임원호(경희대)</td>
</tr>
<tr>
<td>연수</td>
<td>성남이사(한국교원대), 허영남(경기도교육정보연구원)</td>
</tr>
<tr>
<td>초등 연수</td>
<td>성남이사(한국교원대), 하영수(서울초등학교)</td>
</tr>
<tr>
<td>중등 연수</td>
<td>성남이사(한국교원대), 송정호(자양고등학교)</td>
</tr>
</tbody>
</table>
Multimedia-Assisted Language Learning

The Korea Association of Multimedia-Assisted Language Learning (KAMALL) Vol.12, No.2 Summer 2009

Kyungja Ahn
Do Innovative Technologies Bring about Innovative Practices?
A Case Study of a Korean EFL Teacher’s Class under the Curricular Reform Context 9

Meewha Back
The Effects of Technology-Enhanced Instruction on Business Letter Writing Skills 43

Kwang Hee Hong
CALL Technology Education for L2 Teachers: Does It Work? 73

Sook-Kyung Jung
Students’ Evaluation of the Effect of Video Conferencing on Promoting Speaking Fluency 105

Jae Kyung Kim
Effects of Collaborative Writing in Weblogs 135

Jeong-ryeol Kim
A Study of Basic Vocabulary for Integrated English Education: Building ECI Learners’ Dictionary 163

Seo Young Yoon
A Study on Voice Recordings and Feedback through BBS 187

Chung-Hyun Lee
in Teaching and Learning Pronunciation

• 학회지 관리 편집위원 규정 .................................................................................................................. 217
• 논문 투고 규정 ...................................................................................................................................... 219
• Information for Contributors .................................................................................................................. 224
• 연구 윤리에 관한 규정 .......................................................................................................................... 225
• 한국물리학자회 및 인문학회 학회지 종사 양식 안내 .............................................................................. 228
• 회원 입회 원서 ....................................................................................................................................... 236
• Membership Application Form .................................................................................................................. 237

This case study examines how a Korean university-level EFL teacher's use of innovative technologies such as the Internet and multimedia materials influenced his instructional practices, specifically under the CLT-based curricular reform context. In order to understand the teacher's instruction and the context, Engeström's activity system model (1987, 1993, 1999) was employed as a theoretical and analytical framework. Five two-hour lessons and interviews with the teacher and his four students were audio/video-taped and analyzed using grounded content analysis (Bogdan & Biklin, 1998). While the teacher continued to use new technologies throughout the term, his actual instructional practices focused on repetition drills and pronunciation correction. He justified his instructional practices based on a combination of student resistance to the communicative approach and his own belief that accurate pronunciation is essential before communication can be taught. Thus, he failed to use these technologies to their potential to develop students' L2 use as proposed by the curricular reforms. These findings indicate that using technologies does not necessarily bring about innovations in a teacher's instructional practices. Rather, teaching practices are influenced by teacher beliefs, students' normative ways of participating in schooling, and the educational, social, and cultural contexts in which a specific classroom is situated. This study has important implications for policy makers, teacher educators, and teachers themselves concerning teaching L2 in technology-based classrooms within the context of curricular reform.
I. INTRODUCTION

Since the 6th national curriculum was launched in the mid 1990s, curricular innovations toward communicative language teaching (CLT) have been adopted in the Korean educational system. These reforms were designed to influence and innovate teachers' instructional practices and to improve learners' communicative competence in the L2. As one of the ways to support the curricular reform implementation, computer technologies have been employed in foreign/second language classrooms. Innovative technologies such as the Internet and computer-mediated communication (CMC) are believed to have the potential to offer L2 learners opportunities to gain access to authentic materials and communicative activities and thus support communicative instructional practices and even promote L2 learning (Chun & Plass, 2000; Thorne, 1999).

Despite positive expectations about using these technologies in the classroom under the context of CLT-based curricular reform, few studies have been conducted on how these new technologies actually influence teachers' perceptions in L2 learning/teaching as well as classroom practices and student learning, as the reforms proposed. Thus, this study traces a Korean university EFL teacher as he integrated innovative technologies into his instruction within the institutionally mandated curricular reform. To this end, the present study provides a thick description of the context where the teacher's classroom is situated. More specifically, it examines his English learning and teaching experiences and beliefs as well as the nature of the classroom practices that was present in his technology-oriented lessons. Furthermore, this study includes a description of the institutional context and students' voices in this specific classroom as they are important to fully understand the teacher's instruction.

As its theoretical and methodological framework, this study adopts activity theory (Engestrom, 1987, 1993, 1999; Leontiev, 1978, 1981). This theory recognizes social practices and activities as interconnected with historical, cultural, social, institutional and discursive forces (Lantolf & Thorne, 2006). This perspective is compatible with this study, which examines how an EFL teacher's use of technology influences his instructional practices by considering sociohistorical contexts of the teacher himself, his students, and the institution where he works. The theory is applicable to this study's context of curricular reform, since "the goal of activity theory is to define and analyze a given activity system, to diagnose possible problems, and to provide a framework for implementing innovations" (Thorne, 2004, p.65). Thus, an activity theory analysis can offer insights into the complexities involved in a teacher's technology-based L2 classroom in the face of
curricular reforms, and provide us with direction for planning and implementing L2 education policies and teacher education programs.

II. LITERATURE REVIEW

1. English Curricular Reforms

In defining curricular innovation, Markee (1994) stressed that curricular innovation should bring about reforms in new materials and teaching methods as well as in the planning and enactment processes. Most importantly, he argued that altering teachers’ pedagogical values and beliefs is essential for the successful implementation of any curricular innovation. In fact, teacher beliefs are resistant to change and act as a filter through which all aspects of instructional thoughts, judgments, and decisions are made (Johnson, 1994; Nespor, 1987; Nisbett & Ross, 1980; Pajares, 1992). Pajares (1992) and Richards (1998) point out the context-specific nature of teacher beliefs and argue that it is crucial to examine the context where teachers learned their L2 as well as where they teach. Several studies have shown a consistent relationship between teachers’ beliefs and practices in both ESL contexts (Johnson, 1992, 1994) and EFL contexts (Sato & Kleinsasser, 2004), and the critical role of teacher beliefs in the success of curricular reform implementation (E-J. Kim, 2008; Sakui, 2004).

Curricular innovation promoting communicative approaches in secondary school English classrooms was first announced in 1995 by Korea’s Ministry of Education in the 6th national curriculum. This curriculum was intended to replace the predominant grammar translation or audiolingual methods (Kwon, 2000; Ministry of Education, 1994) in order to enhance English learners’ communication capability. Furthermore, the 7th national curriculum, launched in 2001, emphasized task-based instruction and teaching English through English (Ministry of Education, 1998). Although these reforms were employed in order to influence teachers’ instructional practices, numerous studies indicated a mismatch between the policy makers’ expectations and the teachers’ enactment of these policies (Choi, 2000; Guilloteaux, 2004; Jeon & Hahn, 2006; E-J. Kim, 2008; S-Y. Kim, 2002; Li, 1998). These studies report that secondary school teachers’ perceptions of these specific educational reforms and their classroom practices remained firmly based in traditional teaching methods due to various factors involving the teachers, students, and their instructional contexts. These studies have also suggested that Korean teachers’ adequate understanding of CLT is central to the success of this innovation and thus its
implementation must be gradual and adjusted to the institutional issues embedded in EFL instructional contexts.

At the university level in Korea, researchers have argued for the need to adopt more practical, integrative, and communicative approaches (J-E. Park, 1997; N-S. Park, 1994; S. Park, 1988). Since the late 1990s, many universities have mandated communicative approaches in order to improve students' oral communication and composition skills as well as receptive skills. Furthermore, several universities have adopted the teaching English through English policy. These programs have been evaluated using surveys that examined students' and teachers' self-reported perceptions, and by investigating whether there have been significant gains in students' scores between pre- and post-tests (Lee, 2000; J-E. Park, 1997; Song & Y-Y. Park, 2004). However, little research has analyzed the actual classroom practices that occur in these programs, and/or included teachers' and students' actual voices and experiences as participants in these reform efforts. Moreover, few studies have examined technology-based settings, the use of which has been promoted to help embrace such educational innovations. Considering the importance of the context-specific nature of the curricular reform implementation, this study aims to investigate how institutional English curricular reforms have been enacted in the context of a technology-based university English classroom in Korea.

2. Technology in L2 Classrooms

In the field of second and foreign language education, computer-assisted language learning (CALL) has gained much attention among teachers and researchers over the past three decades (e.g., Crystal, 2001; Kern & Warschauer, 2000; Thome, 2008; Warschauer & Healey, 1998). Kern and Warschauer (2000) proposed that based on differing theoretical backgrounds, characteristics, and consequent ways in which they promote and contribute to L2 learning development, CALL can be divided into three main approaches: structural, cognitive, and sociocognitive. Structural approaches to CALL have emphasized the formal analysis of language structures. Accordingly, computers are used "to provide unlimited drill, practice, tutorial explanation, and corrective feedback" (p. 8). In contrast, cognitive approaches view L2 literacy as an individual psycholinguistic or cognitive process; hence, the computer's primary role is "to provide language input and analytical and inferential tasks" (p. 8). However, other researchers recognize the importance of more social or sociocognitive approaches to CALL, viewing language as a socially constructed phenomenon and supporting task-based and content-based approaches in authentic social contexts. Within this approach, computers are used "to provide alternative contexts for
social interaction; to facilitate access to existing discourse communities and the creation of new ones” (pp. 8-9). In particular, it has been reported that innovative technologies, including the Internet and computer-mediated communication (CMC), can provide various authentic materials and create communication opportunities for students (Chun & Plass, 2000; Thorne, 1999), thus enhancing their communicative competence and even intercultural competence (Belz & Reinhardt, 2005; Belz & Thorne, 2006).

More recently, Warschauer and Grimes (2007) introduced two additional theoretical frameworks to explain new types of online communication, Web 2.0 (e.g., blogs, wikis, and social network sites), specifically in terms of the meaning of exercising authorship, communicating with an audience, and producing artifacts. The first theoretical framework, dialogism, views language as “a continuous generative process implemented in the social–verbal interaction of speakers” (Volosinov, 1929, p. 98). Authorship of individuals is constructed through constant interaction and thus the reader becomes conversant with the author. On the other hand, within poststructuralistic perspectives of language, authorship loses importance due to the unstable multiple meanings involved in multivocal, multimodal artifacts. The audience deconstructs the meaning of text in a way that may be unrelated to an author’s intent. Warschauer and Grimes argue that each of the three Web 2.0 technologies is compatible with a different theoretical background. Whereas wikis allow for collaborative editing based on community rules and thus, match social constructionism, blogging creates numerous authors and connects them to audiences and acts as an example of dialogic interaction. In addition, social networking sites (e.g., Facebook, MySpace) obscure the original authors’ intentions as well as the borders between language and other signs, exemplifying a poststructural view.

Sykes, Oskoz and Thorne (2007) suggest the powerful potential of Web 2.0 for second and foreign language education. Specifically, they maintain that these new tools support collaborative and individual creation of text and multimedia. In particular, they argue that these tools allow students’ agency to develop beyond the traditional institutional identity of ‘student’ and for expertise to be distributed across participants.

Many studies have focused on the effects of L2 learners’ technology use on their language learning, and research also has been conducted that considers the impact of teachers’ beliefs, experiences, and computer abilities on how computers are actually used within language teaching classrooms (H. Kim, 2001; H. K. Kim, 2003; Moore, Morales, & Carrel, 1998). In particular, H. Kim (2001) found that the beliefs of three university-level ESL teachers about network-based language learning (NBLT) varied related to their second language pedagogy, computer use experiences, and subjects taught, and these
beliefs were reflected in their selection and application of web lessons. In addition, H. K. Kim (2003) examined three ESL teachers’ integration of computer use and found that the teachers’ beliefs about the roles of teachers and language teaching affected their integration of computers as both facilitating and hindering factors to classroom learning. Although the teachers believed that computers served as tools in their language classrooms, they did not use the computer technology to its full potential primarily due to the realities and constraints of actually using technology in their classroom contexts.

Although these studies indicate the important role of teachers in the way technologies are used for student learning, little research has investigated how technologies impact teachers’ instructional practices by considering various contexts surrounding teachers, students, institutions, and L2 education policy. Thus, this case study provides an in-depth description of an EFL teacher’s instruction in his technology-oriented classroom under the institutionally mandated curricular reform context. The research questions of this study are (a) How does a teacher’s L2 learning and teaching history influence his instructional practices in a technology-based L2 classroom? (b) What role does his use of technology play in his instructional practices? (c) To what extent do his instructional practices support the institutional curricular mandates?

III. THEORETICAL FRAMEWORK

In order to examine how an EFL teacher implemented curricular reforms through the use of the Internet in his EFL classroom, this study employed activity theory (Engeström, 1987, 1993, 1999; Leontiev, 1978, 1981) as its theoretical and methodological framework. Activity theory views all human actions as goal-oriented and artifact-mediated (Cole & Engeström, 1993; Engeström, 1987, 1993, 1999; Lantolf & Thorne, 2006; Leontiev, 1978, 1981). As people attempt to reach their goals by using artifacts, their cognition and goal-oriented actions develop and transform. In addition, activity theory proposes that human cognition and behavior are interdependent in their development and should be considered in the contexts in which they are socially and historically constructed and reconstructed (Leontiev, 1978; Rohrer-Murphy, 1999). Thus, this theory enables us to consider the broader social, historical and cultural contexts of an ESL teacher’s instruction within the activity system where he operates as the subject.

In order to reveal how actions are intertwined and how cognition is constructed and emerges in contexts, Engeström proposed a human activity system model (1987, 1993,
This model provides a framework for "mapping and transforming the complexities of social practice in educational settings" (Thorne, 2004, p. 57), by identifying the participants and process of an activity system as subject, mediating artifacts, object, outcome, community, rules, and division of labor. To frame these relationships, the following model was posited:

![Diagram of Human Activity System](attachment:image.png)

In the upper triangle, the subject and his/her goal-directed activity are mediated by certain artifacts: the subject is an individual or subgroup whose agency is the focus of the analysis, and the object indicates the orientation of the activity, which is transformed into outcomes. The base area of the diagram (community, rules, and division of labor) incorporates local human activity, and larger social, cultural, historical structures. Community is the participants who share the same general object. Division of labor describes both a horizontal and vertical division of power and status among community members. Division of labor within the system is controlled by rules that afford or constrain behavior. The multidirectional arrows in this model indicate that each component is interconnected, influencing each other directly and/or indirectly. Furthermore, people would be involved in different activity systems in different activities at different times. Mutual influences emerge among different activity systems, as Thorne (2004) contends "multiple activity systems are always at work and will have varying influences on the local or focus activity system at hand" (p. 58).

Specifically, the notion of history is important for understanding the current activity system since the current system has been influenced by previous activity systems. In this study, both Mr. Nam's personal history regarding language learning and teaching, and the history of English curricular policies in Korea were taken into account, since they are necessary to understanding the current instructional activity system wherein Mr. Nam...
functions as the subject.

Moreover, inner contradictions are an important concept in activity theory. Engeström states that the unstable and unpredictable nature of human behavior naturally leads to inner contradictions (Engeström, 1999) and defines contradictions as the "clash between individual actions and the total activity system" (Engeström, 1987, p. 39). When "a strong novel factor" is injected into any constituents of the activity system and acquires a new quality, contradictions emerge between that component and some other components of the system (Engeström, 1993, p.72). While resolving any contradictions, the activity system has the potential to be transformed or to maintain the status quo. In the case of the curricular reforms in Korea, teachers may experience inner contradictions between how the government expects them to teach and how they are actually teaching. The activity system will be transformed only when the curricular reforms create particular contradictions within the system and the teachers make efforts to resolve such contradictions.

IV. METHODOLOGY

1. Setting and Participants

The data were collected in summer 2004 from an EFL classroom at a university located in Seoul, Korea. This class was part of the Practical English Program, a credited and required course for undergraduates that lasted 14 days for a total of 28 hours (i.e., two hours a day). The English program was initiated in 1996 to replace traditional college English classes that had primarily focused on reading.

The participants were an EFL instructor and his 33 Korean undergraduate students, including four students who were interviewed. The researcher obtained the permission of the teacher and his students to observe the classrooms and to interview the teacher as well as the four students.

The teacher was Mr. Nam, a non-native speaker of English in his mid 30s. He first

1) Among the four levels of inner contradictions that Engeström (1987, 1993) posited, these contradictions refer to secondary contradictions that are considered very important to understand transformations of activity systems. On the other hand, primary contradictions occur within each component of an activity system. Tertiary contradictions can be found between the current activity system and a "culturally more advanced" activity system such as governmental curricular reforms (Engeström, 1987, Chapter 2, p. 43).

Lastly, quaternary contradictions appear between a central activity system and its neighbor activities.

2) Pseudonyms were used for all participants' names.
learned English in Korean secondary schools and studied English literature and linguistics for his BA and then English linguistics in the MA program at a Korean university. In addition, he studied abroad in the U.S. for about two years. He had not received formal EFL teacher training except for a few teaching methodology courses during his BA studies. He had taught for six years in the context of several Korean universities and was recognized as a capable and innovative teacher by students, peers, and the administration, mainly in acknowledgement of his teaching methods, use of the Internet, and inclusion of authentic materials. Even though teachers in this program were expected to use the assigned textbooks, he had received approval to use materials that he had created himself. Furthermore, he conducted action research regarding use of multimedia materials in his L2 classroom and presented his results at professional conferences. Consequently, he was confident in his teaching and thought of himself as an innovative teacher.

The students in the classroom varied in their majors, grades, and English proficiency levels. Most of the students had majors related to foreign languages including European languages (40%) and Asian languages (36%). The others majored in business and economics (12%), law (6%), and natural sciences (6%). About a half of the students were juniors (49%) while the rest were seniors (27%), sophomores (21%), and freshmen (3%). In addition, there were about three times as many male students (76%) as female students (24%) in this particular class. Moreover, sixty-three percent of the students had registered for the class in order to improve the low scores they had previously received in the same course. Based on the surveys and/or the interviews with the teacher and students, most of the students appeared to be at an intermediate proficiency level, while a few students seemed to be at a high beginner or advanced level4).

Specifically, information concerning the four students who volunteered for the interviews as well as for participation in this study is shown in Table 1. In this table, their majors were varied: while three students had majors related to foreign languages, the fourth (Jihun) was in economics. All four participants registered for this class to enhance low grades that they had previously obtained in an identical course.

Their prior experiences learning English consisted primarily of courses in secondary

---

3) Students' majors were based on their first major, if there were more than one. European languages here did not include English. However, it is possible that some students such as Minho had their second major in English or in English education.

4) In the survey, half of the students gave their score in the standardized tests (49%) such as TOEIC (43%) and TOEFL (18%). Four students (12%) submitted scores in both tests. Their TOEIC scores ranged from 520 to 965. More specifically, two students had TOEIC scores in the 500s–600s, two in the 700s, seven in the 800s, and three in the 900s.
Do Innovative Technologies Bring about Innovative Practices? A Case Study of a Korean EFL Teacher’s Class under the Curricular Reform Context

Schools and/or private institutes, supplemented by self-study. Minho had more English learning experience than the other students and stronger motivation to learn English. He was enrolled in English language education as a second major with his first major in foreign language education (i.e., French); he had traveled to the U.S. and Canada to take language courses, and intended to study in North America for his graduate program. On the other hand, Sujin, Jihun, and Taesu had no experience studying abroad nor had plans to study in an English speaking country. At the end of the class, Sujin received the highest grade, followed by Minho, Jihun, and Taesu.

<table>
<thead>
<tr>
<th>Name</th>
<th>Gender</th>
<th>Major</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sujin</td>
<td>F</td>
<td>Dutch</td>
<td>Sophomore</td>
</tr>
<tr>
<td>Minho</td>
<td>M</td>
<td>French Edu (1st), English Edu (2nd)</td>
<td>Sophomore</td>
</tr>
<tr>
<td>Jihun</td>
<td>M</td>
<td>Economics</td>
<td>Sophomore</td>
</tr>
<tr>
<td>Taesu</td>
<td>M</td>
<td>Romanian</td>
<td>Junior</td>
</tr>
</tbody>
</table>

2. Methods of Data Collection and Analysis

For this study, five lessons (a total of ten hours) were observed and video-recorded. Additionally, an interview was conducted with the teacher, Mr. Nam, which included a stimulated recall session (Shavelson & Stern, 1981) of one of the five lessons (June 30) in order to explore his thoughts and decisions about his own teaching. Furthermore, four students were interviewed at the end of the term. All these oral classroom and interview data were transcribed verbatim. Field notes on classroom activities were taken by the researcher, and, following the observation period, e-mails were exchanged with the instructor regarding additional questions from the researcher. Finally, a collection was made of teacher-authored instructional materials from Mr. Nam’s website, a course syllabus, and class handouts.

The data were examined thoroughly and analyzed based on the principles of ethnographic semantics in which the meanings that people give to their verbal expressions become the primary focus of investigation (Spradley, 1979; Spradley & McCurdy, 1972). Based on a grounded content analysis (Bogdan & Biklin, 1998), the data were examined to reveal Mr. Nam’s perceptions about technology use and teaching as well as his instructional practices within the context in which his teaching was situated. More specifically, the classroom discourse and the interviews were read carefully and
conceptually coded. In so doing, salient and recurring patterns and themes were identified and then relationships among these patterns were investigated in order to create tentative conceptual categories (Bogdan & Biklin, 1998). Using conceptual coding and iterative and refining processes of data reduction and verification (Miles & Huberman, 1994), final themes emerged.

For example, a final theme of "L2 learning occurs through imitation, repetition and memorization" emerged (see Table 2), refined through multiple initial codes and tentative categories from the classroom and interview data. Sentences in the interview data in Excerpt 7 (see the Findings section) were initially coded depending on their meaning: "teacher belief: L2 learning process should be similar to that of L1 acquisition", "strategy instruction: memorizing sentences through image training", "image training: its effect supported by action research", "image training: similar to L1 acquisition." The classroom data in Excerpt 8 was coded as "classroom practice: reading aloud text", "image training: repetition drill". In the case of Excerpt 9 (classroom discourse), initial codes include "reduction: teacher's explanation", "reduction: repetition drill." Through further data reduction and analyses, the final theme, that is, "L2 learning occurs through imitation, repetition and memorization, appeared. Through more analyses, the final theme was included in a macro-theme, "teacher beliefs and instructional practice."

The following table indicates three macro-themes and two to three respective sub-themes underneath:

<table>
<thead>
<tr>
<th>Table 2 Summary of Grounded Content Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher's L2 learning and teaching history:</td>
</tr>
<tr>
<td>- Imperative to use technology: Keeping up with the world and students</td>
</tr>
<tr>
<td>- Important to follow norms of L2 native speaker: Learning useful expressions and accurate pronunciation</td>
</tr>
<tr>
<td>- Students' resistance to communicate in L2</td>
</tr>
<tr>
<td>Teacher beliefs and instructional practices:</td>
</tr>
<tr>
<td>- Accurate pronunciation must precede actual communication</td>
</tr>
<tr>
<td>- L2 learning occurs through imitation, repetition and memorization</td>
</tr>
<tr>
<td>Contextual factors:</td>
</tr>
<tr>
<td>- Students' conflicting expectations about English classrooms</td>
</tr>
<tr>
<td>- Idealized institutional mandates: L2 as a means of communication</td>
</tr>
</tbody>
</table>

These themes were then analyzed within Engeström's activity system model (1987, 1993, 1999a) in order to expose Mr. Nam's instructional activity system as being

---

5) In this paper, "Mr. Nam's activity system" refers to an activity system within which he operates as the subject with other community members. The possessive in one's activity system is used only for convenience and does not mean s/he possesses the activity system.
interwoven with individual, historical, social, and other contextual factors. This allowed the researcher to not only identify important components of his activity systems, but also to illuminate the origins and complex nature of each component. Additionally, it enabled the researcher to investigate how inner contradictions emerged within each component and/or between different components within an activity system. Moreover, this helped to explicate how inner contradictions were resolved within the activity system and what those resolution processes imply in terms of the implementation of the curricular reforms in the teacher's technology-based English classroom.

In order to ensure the trustworthiness of this study (Creswell, 2003), multiple data sources including classroom observations, interviews, e-mail exchanges, instructional materials, and syllabus were triangulated. Also, rich and thick description about the participants' experiences and the related context were given. Furthermore, peer debriefing was conducted by two researchers in applied linguistics to enhance the validity of the coding process, the emerging themes, and the interpretations of the data. The debriefers gave feedback concerning the researcher's data analysis and asked probing questions about the study including querying the researcher on her assumptions.

V. FINDINGS

1. The Overview and Configuration of Mr. Nam's Instructional Activity System

The course syllabus articulated the course description, teaching methods, course materials, and tentative schedule. The course was thus described: "This is an integrated skills course, where four areas of language skills (listening, speaking, reading, and writing) are integrated to strengthen overall language development." Moreover, by incorporating various materials and teaching methods, the course was designed to improve learning efficiency. Instead of the course textbooks, the teacher employed various kinds of materials (e.g., a speech, CNN news video clip, sitcom Friends) uploaded in his homepage. The tentative schedule indicated that the instructor intended to cover slang expressions, explanation of various pronunciation phenomena (e.g., stress, pause, thought groups, linkings, reductions), and pronunciation drills (e.g., image training, group practice project) in addition to reading and writing skills.

Based on classroom observations and the interview, Mr. Nam's lessons were found to consist of two components: lecture/whole class practice and team practice sessions. At the beginning of the term, the first component dominated the class hour, while as the term
progressed, the second component began to take up a larger amount of time. Over the course of the term, for lecture/whole class practice, Mr. Nam explained and then conducted pronunciation drills on (1) 29 slang expressions and several pronunciation phenomena (i.e., thought groups, pitch, stress, beat & rhythm, 20 linkings, 53 reductions) using non-authentic, edited materials, (2) a CNN news clip (North Koreans Seek Asylum in Spanish Embassy in Beijing; 2.5 minutes), a Hillary Clinton address (4 minutes), and a segment from an episode of Friends (The One with a Chick and a Duck; 2 minutes/20 minutes). During the team practice session, (1) Mr. Nam visited each team (4–5 students) and listened to individual students’ pronunciation when they read the script of the Hillary Clinton speech, correcting their pronunciation as necessary, and (2) each team practiced memorizing a two-minute segment from Friends (in the role of Chandler or Joey). More specifically, during each of the five lessons observed by the researcher, the lecture and the whole class practice were conducted covering the course materials. Also, the team practice session was observed in the two lessons (June 24 and 29).

Audio clips, video clips, files of scripts, and handouts were posted on Mr. Nam’s homepage and hard copies of the scripts and handouts were given to the students during the class. He frequently stressed how his students should use these materials. For example, during the class on June 30, he stated that he expected his students to listen to the materials repeatedly, imitate native speakers’ pronunciation, and memorize some of these materials accurately, while emphasizing the importance of practicing stress (Hillary Clinton speech), image association with thought groups (CNN news clip), and informal conversational language with normal speed and various gestures (Friends).

The following figure represents the instructional activity system in Mr. Nam’s classroom. The model was posited based on the classroom observation and interview data.

---

6) For example, the first ten slang expressions were covered on June 23 and the next fifteen expressions on June 24. The first 16 reductions were explained and practiced on June 29, and the next 18 reductions on June 30. Whereas each team practiced the first and the second paragraphs of the Hillary Clinton speech segment on June 29, they focused more on the third paragraph of the same material on June 30.
Mr. Nam as the subject of this instructional activity system had two objects. One was teaching accurate pronunciation and useful expressions and the other was mastering assigned authentic materials. To these ends, authentic audio and video materials outside the textbook as well as technologies such as an Internet homepage and multimedia materials were used as artifacts. He also frequently used imitation, repetition and memorization as instructional practices. L1 and L2 as artifacts were utilized differently in his classroom: Whereas L1 was the medium of instruction, L2 was considered a target form to be imitated and used only when the participants read L2 texts aloud. The community of this activity system included Mr. Nam's students and peer teachers at his institution. In addition to mastering assigned materials, traditional classroom norms such as teacher-directed instruction and students' passive participation were an important rule of this activity system. This feature defined division of labor of this instructional activity system: the teacher controlled and transmitted knowledge and his students received it. Finally, the outcome of the system was students' enhanced pronunciation and knowledge of useful expressions.

Although only Mr. Nam's present instructional activity system is represented above, it should be noted that his prior activity systems as a student and a novice teacher influenced the construction of his current activity system in the classroom.

The next section shows the results of the grounded analysis of Mr. Nam's perceptions and instruction, which explicate both the origins and complex nature of each component of
this instructional activity system. Moreover, the results reveal existing contradictions within his prior and current activity systems and how he reacted to these contradictions. Thus, these findings help explain to what extent Mr. Nam was able to enact the curricular reform mandates in his technology-based classroom and why this enactment took place.

2. Mr. Nam's L2 Learning and Teaching History

1) Imperative to Use Technology: Keeping up with the World and Students

Mr. Nam was very interested in computer technology and maintained a high level of computer proficiency. Development of information technology caused him to seriously think about how the world would be developing in the future and thus to decide to study and use technologies actively (Interview with Mr. Nam—July 6). As a student and a teacher, his use of technologies created contradictions with old artifacts (e.g., cassette players), raising his awareness that using computer technology is essential in modern society to keep up with the outside world. During the class (June 6), he mentioned that the Internet enabled people to gain access to large amounts of information and thus made it possible for L2 learners to obtain information or materials related to L2 learning which had been inaccessible prior to the widespread use of computers. More specifically, the following interview segment indicates why he was willing to employ technologies in his classroom:

Excerpt 1. Interview with Mr. Nam (July 6)7
I have been very interested in technology. Also, many times, I thought about what qualities and capabilities good teachers should have in the 21st century. I concluded that if we teachers continue to conduct traditional teaching styles with traditional materials, students will outpace teachers. I felt a little sense of crisis. Also, I wanted to do something new.

Here, Mr. Nam, in his role as a teacher, believed using technology in the classroom was crucial to catch up with students who would feel comfortable using new technologies. Thus, he thought that ability to use technology could be a measuring device of teachers’

7) All the interviews were conducted in Korean, and for this paper, the interview excerpts were translated into English. In presenting the interview and classroom excerpts here, the utterances given in parenthesis indicate implied meaning, but were not actually given in Korean. The interview with Mr. Nam including the stimulated recall session was conducted on July 6.
qualifications. Moreover, he was eager to conduct innovative teaching through new technologies.

2) Important to Follow Norms of L2 Native Speakers: Learning Useful Expressions and Accurate Pronunciation

Mr. Nam's experiences communicating with L2 native speakers created contradictions in his prior activity system as a learner. The following excerpt shows the difficulties he experienced understanding informal conversational English while studying in the U.S.:

Excerpt 2. Interview with Mr. Nam
As I mentioned earlier during the class, in my case, in the morning on the first day of my class in the U.S., I arrived at the classroom earlier than anyone else, sat in the first row, and listened to the class. Then, since I was able to understand the instructor's talk fairly well, I felt very happy. But when I wanted to talk with the American students (during the break), I could not understand what they were saying at all. Oh my! So I was very shocked. From that point, I regretted the way I had been taught English in Korea. So I think those experiences influenced (my current teaching).

In this excerpt, although Mr. Nam understood university lectures in English relatively well, he felt frustrated when he was not able to understand American students outside of his classes. Then he criticized the way he was taught English during his schooling. Later in the interview, he stated that he analyzed the reason for the comprehension difficulty as English native speakers' "slang" [informal conversational language] and "contractions" [reductions] in pronunciation. In other words, he realized that casual and informal conversations were harder for him to comprehend than formal lectures, primarily due to unfamiliar vocabulary, expressions, and pronunciation.

Mr. Nam's contact with authentic L2 caused contradictions with his formal classroom experiences, and these contradictions influenced the present instructional activity system where he functioned now as a teacher. He believed that it is important to use authentic materials, particularly ones that would be helpful for knowing about and practicing native-like pronunciation and expressions found in informal speech. For this reason he employed Friends in his class curriculum:

Excerpt 3. Interview with Mr. Nam
As I emphasize stresses, I looked at the sitcom focusing on the pronunciation (of the
actors in *Friends*. Also, in particular, as *Friends* is the story about people living in New York, I think the actors speak standard American English. Also, because the actors are young people, I think they use lots of useful slang expressions.

This excerpt shows that, through exposure to the sitcom, he wanted his students to listen to "standard" American pronunciation and "slang" expressions spoken by younger Americans. For example, after watching one episode from *Friends* at the beginning of the term, he checked to see if the students caught any "slang" expressions that they had learned (e.g., *It's not a big deal, It's weird*). In all, Mr. Nam considered authentic materials to present native speaker norms that should be mimicked by learners.

3) Students' Resistance to Communicate in L2

When Mr. Nam was a novice teacher, he attempted to teach communicatively by teaching English through English. However, as this practice did not match the way his students had been socialized during their schooling (via nonnative speaker teachers' teaching English through Korean), they resisted. This created dissonance with his students and within himself as indicated in his interview:

Excerpt 4. Interview with Mr. Nam
In the first semester that I taught *Practical English*, I only spoke English during the class. Even during the break, I only accepted questions in English. Then I felt alienated from the students who did not want to make eye contact with me in class. Few students were able to communicate with me in English. After that semester, I regretted that I failed in improving students' English. Even though I spoke only in English in the class as I was very confident (in my teaching methods and my English), perhaps students felt that speaking English was a burden and they came to hate English. I thought that was not what I wanted. I reflected on my instruction a lot, and I chose the current teaching style.

Here, it can be seen that this teacher had been thoroughly discouraged by the students from adopting a more challenging approach that he believed effective for student learning. Thus, rather than guiding the students into the new approach, he adapted his teaching to these students' expectations. Therefore, this contradiction resulted in a change in his teaching methods (from the communicative approach to audiolingual) as well as the medium of instruction (L2 to L1) as represented in his present activity system.
Overall, into Mr. Nam's prior activity systems (as an L2 learner and teacher), strong novel factors (technology use, access to authentic language, and students' resistance to learning L2 through L2) were injected in different times and places, and conflicts arose within the systems. These inner contradictions were apparent in that they co-occurred with drastic emotional changes (e.g., I felt happy vs. I felt very shocked in excerpt 2) and regret (excerpt 4). In terms of the contradictions caused by innovative technologies and authentic language within his previous system as a learner, the resolution was that he adapted those new artifacts in his learning and teaching English. On the other hand, when he, as a novice teacher, experienced contradictions due to students' resistance to a communicative approach, he resolved them by changing his teaching methods from a communicative to a more traditional approach.

In sum, Mr. Nam's L2 learning and teaching history influenced his present instructional activity system, specifically in terms of his beliefs about L2 learning and teaching (accurate pronunciation, imitation, and repetition) as well as the artifacts (technologies, authentic materials, use of L1 as the medium of instruction, drill and memorization) he employed in his classroom practices.

3. Teacher Beliefs and Instructional Practices

1) Accurate Pronunciation Must Precede Actual Communication

Access to authentic L2 caused Mr. Nam to believe that learning about accurate pronunciation is essential to understanding what native speakers say and that pronunciation practice should precede actual communication. The excerpt below demonstrates his view of the importance of accurate English pronunciation:

Excerpt 5. Stimulated Recall with Mr. Nam
I don't want perfect pronunciation from my students, but I think at least students' pronunciation should be beyond a certain level... As language is spoken anyhow, pronunciation should be well established first in order to communicate (efficiently). That's why I emphasize pronunciation.

This excerpt shows that Mr. Nam considered English pronunciation practice as a primary instructional focus in order to make communication in English more effective. However, later in the interview, he clearly stated that communication in the target language would not be part of his instruction because he believed it was more important
to practice pronunciation in his class. He also mentioned that certain technological tools (e.g., instant messaging programs) could be used for students to communicate in English but that such activities should be conducted by individual students outside the classroom.

As a result, Mr. Nam selected authentic materials based on their appropriateness for pronunciation practice. In the interview, Mr. Nam stated that he chose a *Hillary Clinton* speech because he thought the speaker's clear pronunciation would be helpful to practice word and phrase level stress patterns.

During several lessons, he frequently used this authentic speech for repetition drills to imitate stress patterns. For example, during the whole class session (June 30), he explained how to pronounce one paragraph appropriately in terms of word and phrase stress and then asked the students to read the whole script echoing the speaker from the four-minute audio clip. He also emphasized that students should understand the rationale for this activity. Furthermore, during the team session, he focused on correcting individual students' pronunciation and encouraged them to practice repeatedly:

Excerpt 6. Classroom Data (June 29)\(^8\)

((Mr. Nam is requesting a student to read the third paragraph of the *Hillary Clinton* speech, "But we'll never accomplish what we need to do for our children if we burden them with a debt they did not create.")

1 T: Seypencay mwuntan hanpen chenchenhi ilkepwa, khukey.
   *Read the third paragraph slowly and loudly:*

2 S: But we'll never accomplish what we need to do

3 T: Pwapwa ca we'll never accomplish eyse acco\(^\prime\)mplish eyse
   (kangseylul anoci/ acco\(^\prime\)mplish kangseyul nehese ilke\(^\prime\)`\)aci

4 tasi hanpen ilkepwa
   *Look at (me). Okay. When (you) read we'll never accomplish, there was no stress on acco\(^\prime\)mplish. (You) should read it with a stress on acco\(^\prime\)mplish. Read it one more time."

5 S: But we'll never accomplish what we need to do for our children

6 T: Yakkan kwacangtoykey ilke need to DO\(^\prime\)`hako kwacangtoykey

---

\(^8\) In the excerpts, T stands for Mr. Nam, S one student, Ss several students. Also, "" indicates pitch peak, : sound stretch, / rising intonation, and [ ] overlapping speech. Upper case letters mean increased volume of the utterance. In (( )), various contextual events are noted, usually only when they affect comprehension of the surrounding discourse. The Yale system (Martin, 1992) was used for Korean Romanization. English utterances are marked by underlines whereas the italicized writing is English translation.
ilke kwacangtoykey. tasi hanpen cheumpwuhte
'Read it by exaggerating the stress like need to DO'. Read it one
more time from the beginning.'

S: Um (clears his throat) But we'll never accomplish what we
need to DO: for our chi'ldren if we bu'ryden them with a de'bt
they did- did not no't create.

In this segment, Mr. Nam asked a student to read a specific paragraph and then he
corrected the word stress (accomplish line 3) and asked the student to read the same
segment again (lines 4-5). He was observed to conduct this kind of correction for half of
the students (4 teams; about 16 students) while his assistant teacher\(^9\) worked with the
other half in a similar way.

Overall, the authentic materials were used only to model native-like pronunciation,
demonstrating his beliefs that accurate pronunciation was a prerequisite for effective
communication in English. These pronunciation practices were conducted primarily through
repetition and memorization as represented in the following section.

2) L2 Learning Occurs through Imitation, Repetition and Memorization

Mr. Nam believed that L2 learning was similar to first language acquisition in terms
of the order of acquisition (listening, speaking, reading, writing) and that L2 teaching
should focus on spoken language skills (listening, speaking) first and then written
language skills (reading, writing). In the excerpt below, he indicates the rationale for his
instructional practices based on his theory of second language acquisition and the positive
results of his practices:

Excerpt 7. Interview with Mr. Nam
College students learn L2 when they are already adults. But I think they need to start
with listening and then speaking in the same way people acquire their native language.
Then they need to learn something like reading skills... In my class, I have asked my
students to pronounce English texts and memorize sentences through image training.
It was very effective and the students felt satisfied with it. Image training was not
developed on my own, though. According to research papers and experimental
examples with regard to the method, if L2 learners were trained through this method

\(^9\) The assistant teacher was one of Mr. Nam's novice peer teachers in Practical English Program. She
temporarily helped and observed Mr. Nam's teaching during the summer term.
intensively for 5 to 6 months, it was very fruitful. I think that kind of process is very close to first language acquisition.

In this excerpt, he indicated that L2 learning can happen through repetition and memorization since the early stages of first language acquisition are, he believed, the result of constant listening and imitation. In particular, he emphasized memorization through associations of thought groups with images. He supported these beliefs with expert knowledge (findings from research papers) and craft knowledge (findings from actual teaching experiences) (Kennedy, 1999). In the classroom excerpt below, Mr. Nam conducted whole group drills using what he called image training in which the students memorized a news clip by associating each thought group with an image:

Excerpt 8. Classroom Data (June 29)

((Mr. Nam plays a video clip of CNN news, explaining thought groups and stresses. Then, he asks his students to associate each thought group with an image to memorize the script, and checks to see if they memorized the first sentence))

1-4: Mr. Nam asks students to read aloud the first sentence together)

5 ALL: Wearing baseball hats, the group of North Koreans including eight children, casually approached Spain’s embassy in Beijing, just like a typical tour group

((8-13: Mr. Nam asks students for pronunciation practice and memorization))

14 T: Ca chespenca ca yakwu mocalu ssun iken etehkey hayyo/ ‘Okay. Let’s start with the first (sentence). How do (you) say ‘wearing baseball hats’ (in English)?’

16 Ss: Wea[ring baseba]ll ha’ts.

17 T: [Wearing baseball ha’ts]

((18-34: The class practices the rest of the sentence in the same way above))

Mr. Nam started this routine by reading a paragraph aloud together with his students (lines 5-7) and then asked them to memorize the text by focusing on pronunciation (lines 8-13). Next, using L2 translated phrases, he checked to see if the students had memorized the corresponding L2 phrases or thought groups from the text (lines 14-34).

Even before actually practicing pronunciation of authentic materials, Mr. Nam consistently used repetition drills for intensive pronunciation practice employing formulas related to linking, reductions and other pronunciation phenomena:
In the excerpt above, he emphasized the importance of accurate pronunciation. More specifically, he explained the reduced sounds (i.e., could have → could’a, could not have → couldn’a) followed by several repetition drills. During this term, Mr. Nam used this kind of repetition drill for approximately 53 phrases with reduced sounds (e.g., want to → wanna), 20 cases of sound linking (e.g., in an hour → /inunour/), in addition to several sample cases of thought groups, pitch, stress, and beat and rhythm.

4. Contextual Factors

1) Students’ Conflicting Expectations about English Classrooms

Most students had positive reactions to Mr. Nam’s class as represented in their course evaluations (4.75 out of 5.0). Interviews with the four students also showed that all four of them were mostly satisfied with his class as stated in the following segment:
Excerpt 10. Interview with Sujin (student) (July 5)
This kind of speaking test to check how well we imitate native speakers was new to me... It was fun rather than difficult... I wouldn't say my English has improved a lot over this one term (which was relatively short). But I'm very satisfied that I came to know how to study and pronounce English (more accurately). I think I may not be afraid of pronouncing English any more, if I practice pronunciation for additional two or three months in the ways the teacher showed us.

This excerpt indicates that Mr. Nam's instructional practices and rationale did in fact influence this student's understanding of L2 learning and her emotions and attitudes toward learning the L2 (from anxiety to confidence). The same student was also satisfied with the technologies that her teacher used as shown below:

Excerpt 11. Interview with Sujin (July 6)
What I liked most in this class is that the professor prepared a lot of materials for the class on his homepage... I know it would be also good for us to look for something by ourselves and study them. But I prefer to study what I receive from teachers because I am more familiar with it. I know these days the Internet is well connected everywhere. But if we have to find something to study over the Internet on our own, I'm not sure if we could do that well. In the case of Mr. Nam's class, he might say, "How can't you study well, given that I provide you with everything you need?" So, we can't help studying hard.

This excerpt reveals that Mr. Nam's class motivated the students through his use of innovative technologies and materials and that he provided diverse resources the students could use for their class. On the other hand, it also shows that his class remained traditional to the extent that it positioned students as passive recipients of knowledge. Overall, the two segments above show that Sujin felt comfortable with Mr. Nam's view about students and his teaching style.

Some students, however, had different needs for their language learning. For example, Minho was clearly aware that there could be more challenging and beneficial practices in L2 classrooms beyond the drill and practice that most teachers and students have been socialized into. As shown below, this student preferred more challenging L2 instruction that helped him use the L2 as a communication tool:
Excerpt 12. Interview with Minho (July 6)
It could be my prejudice, but Korean non-native speaker teachers of English or French tend to stick to the teaching methods which they were familiar with or they believe effective. But, native speaker teachers emphasize participating in conversation rather than underscore specific effective methods to learn L2. That’s why I prefer native speaker teachers’ classes... I would stay alert throughout native speaker teachers’ classes and focus on the classes more because I’m afraid I might miss something told or taught by them. Also, (when I participate in the class), I can use L2 expressions that I learned and I feel good about it.

It seems that this particular student experienced contradictions in his L2 learning activity system, between learning about the L2 (e.g., through drill and practice) and using the L2 (e.g., through communicative approach). In the native speaker teachers’ classes, he adopted different artifacts (communicative approach) and held a different expectation (learning English through communication), which shifted other components of the activity system (e.g., division of labor, object, and outcome). On the other hand, through his experiences with nonnative speaker teachers, he expected that he would experience particular ways to learn English, in this case, drill and practice to acquire accurate pronunciation. The student was able to conceal his perceived communication expectations in order to meet the objectives and requirements in Mr. Nam’s class, which resulted in his gaining high final scores in the class.

The different reactions to Mr. Nam’s class of the two students (Sujin and Minho) might be due to their dissimilar backgrounds, learning styles, proficiency levels, and experiences in learning and/or teaching English. Sujin, who had relatively less L2 learning experience, was willing to accept Mr. Nam’s outcome for the class. On the other hand, Minho, who had more L2 learning experience since his second major was English language education and he had studied abroad in the U.S. and Canada, was somewhat critical of Mr. Nam’s class. This indicates that students also have their own L2 learning history based on their previous activity systems, which then influence their perceptions of their current activity systems. Despite the differences between the two students, the data showed that they had similar expectations about nonnative speaking English teachers (e.g., using drill and practice, learning about L2 knowledge rather than communicating in L2), which were mostly met in Mr. Nam’s classroom.
2) Idealized Institutional Mandates: L2 as a Means of Communication

The institution mandated the CLT-oriented curriculum as articulated in the course description that was shared by all the program instructors in their syllabus:

Excerpt 13. Course Description of the Practical English Program
This is an integrated skills course, where four areas of language skills (listening, speaking, reading, and writing) are integrated and related activities are intended to strengthen overall language development. The primary goal of this program is to cultivate students' ability to use the language and communicate smoothly in different situations. The secondary goal of the course is to improve effective reading and writing skills. Students will be exposed to the cultures and customs of the English speaking world through this course.

However, Mr. Nam perceived that particular theories, such as CLT, cannot be directly applied to Korean classroom settings and need to be adapted to fit the Korean educational context. Based on his teaching experiences, he stated, "Because theories (such as CLT) have not been made based on Korean EFL contexts, I think there could be many problems if we adopt those (directly) into our Korean classroom settings" (Interview). This was evidenced by his students' resistance to his communicative approach (Excerpt 5). Furthermore, as shown below, at other times in the interview he argued that contextual factors inhibited his students from developing their communication ability in English:

Excerpt 14. Interview with Mr. Nam
Korean learners of English may experience much difficulty because there is no environment to use English (other than classrooms)... The problem is that English is taught only at university (classrooms)... Another problem is related to social issues. This society appreciates high scores on exams such as TOEIC or TOEFL (rather than people's capabilities to communicate in English)... I think these contexts make it difficult (for Korean students) to learn English.

In this excerpt, Mr. Nam recognized that the Korean EFL context did not provide students with an environment for contact with English outside of the classroom, and that there was intense pressure for high scores on standardized tests in order to graduate and/or find employment. These factors discouraged teachers and students from using the L2 as a means of communication.
Under these circumstances, the teacher believed that knowing about the L2 (e.g., accurate pronunciation, useful expressions) through drill and memorization was more realistic and beneficial for his students than using the L2 through the communicative approach. Thus, the outcome of his current instructional activity system (improving students’ L2 knowledge and pronunciation) remained different from that of CLT-oriented curricular mandates (developing students’ ability in L2 communication).

Consequently, these mandated reforms by the institution were rejected by Mr. Nam because he believed that the curricular mandates were too ideal and unrealistic, especially in the face of students’ resistance to more communicative activities and within the EFL context that provided rare opportunities to communicate in English.

VI. DISCUSSION

The findings reveal that although Mr. Nam believed that innovative technologies were essential learning tools, he used them in very traditional ways to provide audio/video materials and/or multimedia resources for drill and practice, instead of engaging in communicative uses of the L2 as mandated by the institution. As a result, the practices in his classroom differed from the goals of the CLT-oriented curricular reform proposed by the university administration.

The question that remains is why Mr. Nam used innovative technologies (Internet) as he did. From Mr. Nam’s perspective, innovative technologies were used to realize his beliefs about L2 learning and teaching rather than to achieve the potentials of these technologies, in other words, to support L2 use/communication (Chun & Plass, 2000; Thorne, 1999) as well as social interaction in the L2 as represented in social/sociocognitive approaches to CALL (Kern & Warschauer, 2000). While his institution regarded him as an innovative teacher, respecting his decision to use innovative technologies, he was not encouraged or expected to rethink his beliefs and instructional practices in relation to curricular reform initiatives. Moreover, students’ positive reactions to Mr. Nam’s present class and their expectations about nonnative speaking English teachers reinforced his current instructional activity system. Furthermore, traditional classroom norms such as teacher-fronted instruction and participation structure, and students’ passive participation supported his current instructional practices. Thus, these findings suggest that teachers like Mr. Nam who are open to the use of innovative technologies may continue to organize their instruction in ways that are inconsistent with curricular reforms.
The impact of Mr. Nam’s prior experiences and beliefs on his use of technology within the curricular reform context can be explained through the notion of ontogenesis, the development of an individual (Lantolf & Thorne, 2006). According to activity theory, the personal histories and past experiences of the subjects of the activity system should be understood first for a more complete understanding of their present practices and development. In this study, the teacher’s prior experiences and beliefs were very powerful force impacting his current instructional practices in his technology-based classroom. These findings also revealed how what the subject brings with him/her to the activity system is critical. While the typical activity system model (Engeström, 1987, 1993, 1999) assumes the importance of the subject, the model could be improved by making the ontogenetic nature of the subject more explicit.

Although technology use, access to authentic L2, and students’ resistance to his communicative approach created contradictions and transformed Mr. Nam’s prior activity systems at different times and places, few contradictions emerged within the current instructional activity system specifically related to the curricular mandates. In order to fill the gap between the outcome of his current activity system and that from the curricular mandates, the curricular reform should have created contradictions in this current activity system. Otherwise, Mr. Nam’s instruction would most likely remain quite stable. Under these circumstances, any professional development activities designed to support the full implementation of the mandated curricular reforms must seek to intervene in teachers’ instructional activity systems so that the activities can work to transform those activity systems.

Interventions may take several forms. One form of intervention may be to expose teachers to alternative beliefs which are more compatible with the basic principles of the curricular reform (learning L2 occurs when L2 is used as a means of communication). Such a strong novel factor can help expose conflicts with teachers’ existing beliefs. Exposure to alternative beliefs can co-occur with another strong novel factor. For example, in Mr. Nam’s case, this would be alternative ways of using technology to foster L2 use (e.g., CMC, blogs, wikis). This sort of intervention requires that teachers be provided with realistic and concrete instructional models that illustrate exactly how to use innovative technologies to promote learners’ L2 use. Lastly, professional development interventions need to support teachers as they resocialize students into new ways of acting and interacting in the L2 classroom.

When professional development interventions target specific components of teachers’ activity systems, these interventions should be accompanied by efforts to alter other
components of this activity system as well. For instance, unless the nature of the socialization pattern of students in schools (limited participation in classroom/L2 communication) is shifted, the educational reform efforts will most likely have little impact on the teacher's instructional practices. Professional development opportunities and efforts to alter the classroom participation structure would influence other components such as division of labor of the activity system. As teachers work to implement instructional practices that support students' L2 use/communication, the division of labor will most likely change so that teachers and students are able to co-conduct knowledge through the use of communicative activities. Eventually, the object and outcome of the system will shift to using L2 as a means of communication and, hopefully, lead to the improvement of students' communicative competence.

VII. CONCLUSION

The findings of this case study indicate that despite Mr. Nam's use of innovative technologies, his instructional practices focused on repetition drills and pronunciation correction and thus institutional mandates towards CLT were not successfully implemented in his EFL classroom. Although the technologies employed have the potential to improve L2 communicative ability as proposed by the CLT-oriented curricular reform, Mr. Nam's L2 learning and teaching history led him to use these technologies in very traditional ways.

These findings confirm that teachers are the key to effective implementation of any educational reform. Thus, as evidenced in this study, top-down curricular reform initiatives may result in a disconnect between policy makers' intentions and teachers' perceptions and implementations in the classroom (Hiramatsu, 2005; Wang, 2006). As teachers work in their specific instructional contexts, they will be more likely to change, refuse, or disregard curricular mandates in their classrooms (Wang, 2006; Widdowson, 1993). Thus, this study implies that for the successful implementation of the curricular reforms, there should be collaboration and communication between policy makers and teachers as implementers in policy making as well as policy implementation. The present study also implies that appropriate professional development activities regarding curricular reforms should be enacted in ways in which both top-down and bottom-up efforts are combined, since even under the educational reform context, teachers' learning emerges out of the settings in which they work (Johnson & Golombek, 2003). In particular, promoting
teachers' communities of practice is necessary to help teachers reflect on and discuss issues regarding their teaching with peer teachers, particularly more capable ones, as well as with teacher educators and policy makers.

Activity theory, as a theoretical framework for this study, provides us with synchronic and diachronic insights into how teachers’ classrooms are situated within contexts influenced by historical, cultural, social, and institutional forces. In addition, activity theory enables us to examine teachers’ learning and teaching histories and contradictions that influence their present activity systems, and to consider how these systems can be reoriented to achieve different instructional outcomes. An activity theory analysis of Mr. Nam’s class supplies teacher educators, policy makers, and other professional development providers with an understanding of why certain instructional practices occur as they do and also exposes aspects of the instructional activity systems that can be altered and/or targeted for intervention. On the surface, outsiders might consider Mr. Nam an innovative teacher who has successfully implemented the current curricular reform mandates in English education in Korea. However, an activity theory analysis exposes a much different view of Mr. Nam’s class. For Mr. Nam’s instructional practices to be consistent with curricular reform mandates, targeted professional development interventions and the change in the contextual structure are called for. The contribution of activity theory is to identify exactly what needs to be targeted and/or altered.

Although this case study provides significant implications for technology-based English teaching, it is difficult to know how typical or universal these findings, which examined only one teacher’s classroom, may be. Studies investigating teachers in other technology-based classroom settings may possibly yield different results. Thus, future research should investigate various classroom contexts that employ innovative technologies. In addition, research is needed to examine the effectiveness of professional development activities that work to enable teachers to reconceptualize their beliefs and instructional practices specifically in technology-based L2 classrooms so that they are more consistent with curricular reforms and accomplish the potentials of using technologies. Perhaps the next logical step for research is to examine how the implementation of curricular reforms in technology-oriented classroom influences students’ learning. This enterprise of understanding multiple issues embedded in technology use in L2 classrooms should be continued, as technologies are frequently adopted in L2 teaching and learning. This study is a first step in that direction.


Do Innovative Technologies Bring about Innovative Practices? A Case Study of a Korean EFL Teacher's Class under the Curricular Reform Context

55(1), 93-118.


Key words: CALL, curricular reform, communicative language teaching, activity theory, activity system model, inner contradiction, teacher beliefs, teacher education program

Application levels: tertiary education

Author: Kyungja Ahn (Seoul National University); kjahn21@gmail.com

Received: May 15, 2009
Reviewed: July 30, 2009

This study investigated the effectiveness of technology on the instruction of business letter writing in a Korean university by comparing technology-enhanced lessons with traditional instruction. Writing performance for both the traditional and technology-enhanced approaches was analyzed for four types of business letters such as hotel reservations, complaints, cover letters, and sales promotion letters and were evaluated based on overall impression, ideas and argument, accuracy, fluency, and appropriacy. There were 29 students for the conventional writing instruction and 40 students for web-based instruction. The students who received web-based instruction showed more improvement than those who received traditional training for making hotel reservation and writing complaint letters. In addition, the results showed significant improvement in 'overall impression' and 'ideas and argument' for hotel reservations and in 'overall impression' and 'fluency' for complaints as well as in 'appropriacy' for cover letters. Low level learners benefited the most from technology-enhanced lessons. These findings suggest that integrating technology into EFL business letter writing lessons enhances writing performance, particularly in several areas of analytic evaluation.

I. INTRODUCTION

The rise of globalization has led to greater contact among numerous companies and government organizations around the world. Such a phenomenon signifies the importance of identifying and producing specific genres in English for both businesses and
organizations in Korea as English is often the mode of communication between these entities. International tourism, scientific exchange, media, and other business related activities have also increased in recent years, thus creating a greater need for functional interaction in English. This trend poses a challenge to Korean college students as prospective employees and consumers expect proficiency in English. Despite the growing need for communicative skills in English, a large number of Korean EFL students have not had sufficient experience and training in writing skills related to business functions.

Since the university entrance examination and some standardized tests such as the TOEIC or the TEPS assess only reading and listening aptitudes the primary concerns for teaching and learning English as a foreign language in Korea have focused on receptive skills. This circumstance impedes opportunities to acquire functional proficiency, develop competent writing skills, and gain knowledge of conventions in English. Learning to write in English for EFL learners requires both "information about composing skills" and "comprehensible access to specific types of linguistic knowledge" (Milton, 1998). These dual demands lead to a difficulty in terms of producing the target language meaningful within a target context (Hyland, 2003). Considering the immense educational needs of EFL learners, an effective instructional approach, such as business letter writing, may play a key role in teaching specific language skills to Korean students.

The field of language education has been greatly affected by computers in the last few decades. Computers have particularly revolutionized the teaching of writing in the L2 context. Numerous research has explored effective methods for supporting or assessing student writing through computers (Chapelle, 2001). Studies have found that writing completed in a computer-equipped context is more beneficial than writing in a conventional classroom (Chuo, 2007; Ferris & Hedgecock, 2005; Pennington, 2004). However, the focus of research addressing the effects of L2 writing instruction using technology has been mostly placed on general essay writing, academic composition, e-mailing to instructors or peers, or on the effects of peer feedback. On the other hand, scant attention has been given to the direct impact of technology on teaching specific language skills.

Furthermore, English for Specific Purposes (ESP) focused studies have sought to describe the need for the explicit teaching of rhetorical structures in ESL/EFL by using structural move analyses (Hyland, 1990; Hyon, 1996; Swales, 1990). Among the studies which investigated the efficacy of genre-based instruction, studies such as Marshall (1991) and Mustafa (1995) focus on a single genre, term paper and report writing, respectively, and Henry and Roseberry (1998) focus on the parts of an academic essay, instruction and
conclusion. Conversely, despite current attempt (Swami, 2008) to evaluate the efficacy of genre-based instruction by identifying two genres (sales promotion and job application) and academic essays, little research has been conducted to examine the direct impact of genre-based pedagogy by including a set of genres together in a single study.

While genre-based empirical research has shown positive effects on writing, there have been few studies on the efficacy of genre-based approaches in business letter writing in a Korean EFL context. Research related to ESP in Korea has mainly focused on the development of effective business English teaching programs for secretaries (Hwang, 2001, 2002; Jeon, 2001) or nurses (Soh, 2004). Therefore, in order to help Korean university students to become confident, independent writers in their future work places, further research is needed to find efficient business letter writing instruction methods. Currently, most of the available web-based writing tools for learners have been limited to mainly developing academic writing skills. Accessible web sites for instructional or self study purposes for business letter writing are rare except for those which require a fee for the services. Thus, the purpose of this study is to explore the direct effectiveness of technology enhanced instruction on business letter writing compared to traditional instruction for four different types of business letters: hotel reservations, complaints, cover letters, and sales promotion letters for Korean university students. Pedagogical implications are presented to offer a feasible application of technology-based web tool for L2 specific genre writing classrooms.

II. LITERATURE REVIEW

1. Theoretical Background

The theoretical framework of TEWI is based on the input (Krashen, 1982), interaction (Long, 1996), and output theories (Swain, 1985). Input, output, and interaction are widely regarded as three vital elements for second language acquisition (Chuo, 2007). The input theory rests on the idea that learning occurs primarily through exposure to language input in the form of written or spoken texts and language descriptions. Moreover, the likelihood of learners' acquiring linguistic input increases if their attention is drawn to salient linguistic features (Robinson, 1996; Schmidt, 1990; Skehan, 1998). One way that learners can improve their understanding of a language is "input enhancement" (Smith, 1993). Glossing and annotation methods were adopted for enhancing language input in this work.

The interaction theory emphasizes that input alone was not sufficient for language
acquisition, and that interaction and learner output were necessary as well (Long, 1996). TEWI was designed for providing multiple interaction channels: between learners and the technological medium and among learners themselves. Swain further developed Long's interaction theory in her comprehensible output hypothesis (Long, 1983, 1996; Swain, 1985; Swain & Lapkin, 1995). In her work, learners were asked to complete writing assignments in English. The materials also incorporated a "reading to writing" approach. According to Krashen (1984), the best way to learn to write is to receive rich and comprehensive input from reading. Exposure to a large number of letters provided a wealth of easily accessible reading materials for writing input.

2. Genre Based Approach

The current literature on the use of genre-based approaches in L2 writing instruction claims that genre is a key notion that helps students gain more insight in writing and in learning a language (Grabe & Kaplan, 1996). With the understanding of the genre as a set of communicative activities (Swales, 2002) and social actions (Halliday & Hasan, 1989; Miller, 1984) to establish rhetorical goals and accomplishment, gaining insights of a particular communicative context in which a genre is set is essential in order to achieve these specific needs, goals, and values of a community or culture (Halliday & Hasan, 1989). Contextual knowledge, which is called moves (Bhatia, 1993; Swales, 1990) are also necessary to meet the genre expectations of the reader or hearer. The inclusion of all the obligatory moves in acceptable order is necessary for accomplishing the communicative goals of a genre (Henry, 2007).

However, it is often difficult for non-native speakers of English to identify specific features of a certain genre in a target language since they must learn linguistic formulas for constructing a genre and how to produce texts that meet the community's purposes, values, and expectations (Paltridge, 2000). Thus, effective genre-based instruction needs to help students gain awareness of the communicative purposes and linguistic features of texts that they need to read and write in their disciplines and professions. Explicit instructions of the particular moves and steps of a genre will help them write properly. Benefits of explicit training in rhetorical structures have been reported for ESL or EFL writing development (Flowerdew, 2000; Henry & Roseberry, 1998; Hyland, 1990; Hyon, 2001; Johns, 1995; Lee, 2006; Mustafa, 1995; Sengupta, 1999). However, most of the research focusing on genre-based instruction has been conducted in an English for Academic Purposes (EAP) context.

Though little attention has been given to business writing in English, one empirical
study (Swami, 2008) evaluates the efficacy of explicit genre-based instruction on two genres such as sales promotions and job application letters and academic essays. The researcher found that the genre-sensitivity developed through this instruction has empowered the ESL learners not only to understand the rhetorical move structures of the target genre but also to identify the moves and the strategies generally used to achieve their communicative goals. He also observed an interesting impact of sensitization that students were able to transfer their awareness of the sales promotion letter to the effective writing of a job application letter in the pre-test. The students' ability to transfer their awareness of the genre to other situations indicates "the possibility of learning transfer or transferability of skills from one to another, especially due to the promotional nature of the two genres (p.10)."

3. Technology-Enhanced Writing Instruction

From the beginning of this century, research sought to improve L2 students' writing ability by using technology report the beneficial effects of teaching writing in a computer context over writing in a conventional classroom (Chuo, 2007; Huh & Kang, 2006; Kim, 2000; Pennington, 2004; Song, 2006). However, there have been further efforts to reveal the advantages of specific technological features built into programs by collecting tracking data of students' reaction to the CALL materials. The studies provide a general view of the effective ways to develop CALL materials and extend our understanding of individual SLA principles. Several technological features applied to designing the web site for this study have followed the empirical results of the studies.

Regarding input enhancement, De Ridder (2000, 2002, 2003) found that input enhancement without some kind of elaboration such as gloss, had no effect on vocabulary learning. She concluded that indiscriminate clicking does not facilitate student learning. Collentine (2000) tracked students' use of various components to determine which components contributed to students' performance. He determined that some components such as video viewing were less beneficial for learning than other components like enhanced input supported by corrective feedback in exercises. Therefore, the results demonstrate that functional saliency including elaboration of word meanings and grammatical features with multimedia annotations has an impact on students' learning. For glossing, Miyasako (2002) compared the effectiveness of L1 and L2 glosses based on two different proficiency levels. He found that L2 glosses tended to be more effective for higher-proficiency level learners, whereas L1 glosses were more effective for lower-proficiency learners. The materials designed for this study mostly used salient input
enhancement with L1 glosses.

Heift (2003) explored the concept of output hypothesis testing by using three different response formats. She used multiple-choice, drag-and-drop, and type-the-answer formats in exercises designed to help students learn German word order. The results revealed that the drag-and-drop and type-the-answer formats had a significant impact on student learning over the multiple-choice formats. However, the analysis of her tracking data showed that students made errors in the drag-and-drop format four times more than multiple choice or typing formats. The students easily examined language structures in the drag-and-drop format without having additional time to retype entire sentences. Since type-the-answer format demands multiple grammatical structures and spelling correctly, it could distract the students from the task at hand. This study applied all three different response formats considering relevancy and expected required time to complete each task.

There are other benefits of using technology in a L2 classroom. Web-based environments increased interaction through learners, technological mediums, and the instructor (Sullivan, 1993). Instant feedback (Chapelle, 2003) and easy access to online-reference tools help produce better work. Despite the benefits associated with technology-based instruction, certain drawbacks were also been reported. These were as follows: shallow or confusing information, slow or failed access, and inability to properly use the technology (Chuo, 2007). These findings offer insights on making decisions about instructional design, especially with respect to the use of specific instructional features of this study. Thus, this study is aimed to investigate the effectiveness of technology enhanced business letter writing instruction for Korean university students. Furthermore, the current study attempts to compare four different types of business letters in two different mode groups to determine which conditions and letters create a more effective learning environment for different groups of students. Three research questions have been formulated as follows:

1) Are there significant differences in writing performance for four different types of business letters between two different mode groups?

2) Are there significant differences in terms of overall impression, ideas and argument, accuracy, fluency, and appropriacy between the two study groups?

3) Are there significant differences in writing performance for the four different types of business letters in terms of proficiency level between the two different groups?
III. METHODOLOGY

1. Participants

This study investigated the work of 69 college students at a university in Gyung-gi Province. The students were chosen since Paltridge (2001) claimed that genre-based approach is especially beneficial for beginners and intermediate students in terms of the productivity of a text that serves its intended purpose.

In this work, the experimental group (N = 40) consisted of 27 sophomores, 12 juniors, and 1 freshman taking a required general English course focusing on reading and writing skills. There were 19 male and 21 female students. The control group (N = 29) was comprised of mostly 10 sophomores and 12 juniors, and 7 seniors. The students were enrolled in a Second Language Acquisition course that was taken as an elective. There were 9 male students and 20 female students. The students’ majors were theology, media & communication art, business administration, music, police & social welfare, information technology, and design. Their ages ranged from 20 to 27.

2. Materials

The participants wrote four different business letters over eight weeks: a hotel reservation letter, a complaint letter, a cover letter, and a sales promotion letter. These letters were chosen because they are the most commonly written letters in the professional world and may help students to prepare for their future careers. To ensure the validity of the study, two shorter letters and two longer letters were chosen based on Cheng’s (2007) analysis. Since cover letters and job application letters are considered a ‘less formulaic genre’ (Cheng, 2007), hotel reservation letters and complaint letters were grouped as more formulaic letters. According to Bhatia (1993), a sales promotion letter and a cover letter, which he refers to as promotional genres, show a virtually identical pattern of moves. Therefore, both letters can be placed in the same category.

The materials in this study were selected from relevant business letter writing websites and business letter writing student books1) according to vocabulary, grammar and sentence length. The resources also matched the students’ proficiency level in English. The tasks were devised for students to reflect and think critically about the order of the moves, their communicative purposes, linguistic realization, and cross-cultural differences. The control group received traditional classroom instruction with handouts in the form of

---

printed materials. For the experimental group, a web site (www.bzwriting.co.kr) was designed and programmed.

The hotel reservation writing prompt was adopted from *Writing tasks for secondary-level foreign-language learners*. The prompt was from an actual project, Colorado Foreign Language Sample Proficiency Project (Weigle, 2002). According to Weigle (2002), authenticity (Bachman & Palmer, 1996) is an essential consideration when a writing prompt in a genre is given. The other writing prompts were given with caution based on White’s (1994) four requirements for writing tasks: "clarity, validity, reliability, and interesting (Weigle, 2002, pp. 90-91)". Following Tedick’s findings that students perform better on a 'discipline-specific' prompt than on a more general prompt (1990), the prompts used in this study were explicit.

3. Procedures

Participants in both groups received half-semester-long instruction. The experimental group attended two one-hour sessions every week in a computer lab while the control group attended two consecutive class hours every week in a paper and pencil-based class. All of the participants were given pre-test writing assignments, instructions that included activities for identifying rhetorical patterns and exercises for language expressions, and post-test writing work.

At the beginning of the experiment, the basic concepts and mechanics of business letters were taught to help students gain an understanding of business letters and how to produce them. For each letter, there were two phases: "pre-test" writing task and "instruction with exercises". For the pre-test session, the participants in each group were given a writing task for each letter. They were asked to complete the task within a limited time frame and number of words without using a dictionary.

Following the pre-test work, participants were given instruction on how to write each of the four business letters described in this study. The writing instructions followed by Dudley-Evans and St. John’s synthesis approach (1998) for genre writing are shown in Table 1. The instruction phase was divided into four main parts. During the first phase, activities for raising rhetorical consciousness were addressed. This part opened with a model of each type of letter. Students read the text for general understanding and then used it as a reference point. Samplers of the same type of writing followed, thereby allowing students to familiarize themselves with each letter type. The cultural differences and nuances related to English letter writing were then discussed.

The second part started with naming and reordering exercises. Students filled in the
name of each part of the letter and reordered scrambled scripts. These tasks helped students recognize rhetorical patterns. Key expressions and useful phrases were provided so that students could study and practice individual language elements, such as grammatical structures and vocabulary. The exercises helped students to work on each language element individually and to combine two or more elements in order to allow them to produce longer sentences or paragraphs.

In the third part, the course combined each of the elements practiced from the beginning into one longer writing task. The post-test writing prompt for each letter was given the same one as the pre-test writing considering the task difficulties of each prompt and students’ affective domains, writing anxiety.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>The Procedures of Instruction</th>
</tr>
</thead>
</table>
| 1) Basic concepts | (1) What must be included in most business letters  
(2) How to write each section of letters  
(3) Using formal writing styles and necessary mechanics  
(4) Three different letter formats |
| 2) Pre-test | (1) Write each letter according to the given prompts |
| 3) Writing instruction | (1) Develop rhetorical awareness by looking at model texts  
- a model letter with questions  
- sample letters  
(2) Practice specific genre features, especially moves and writer stance and linguistic features (controlled-guided- independent)  
- naming each part of the letter  
- reordering scrambled letter text scripts  
- key expressions and useful phrases  
- a letter writing practice  
(3) Carry out writing tasks showing awareness of the needs of individual readers and discourse community and the purpose of the writing (Post-test)  
(4) Evaluate the writing (through peer review or reformulation)  
- giving peer feedback  
- revising their business letters |

Finally, the participants read their group members’ post-test writing scripts and provided feedback according to the peer feedback checklist given by the researcher. The feedback categories consisted of organization, content, and grammar. Then, the students revised their papers. In this study, the pre- and post-test writing scripts were analyzed.

The order of the tasks was as follows: hotel reservation letter, complaint letter, cover letter, and sales promotion letter considering the students’ English proficiency levels and
L2 writing experiences. Since the participants ranged from low to intermediate ability, letters with more simple moves and language patterns such as hotel reservation and complaint letters were completed before the other two types of letters. The web site was opened during class hours only, so the students were only able to access the tasks during the designated times. Both groups were required to complete the writing tasks in class. The total experimental class hours and the contents of the material were the same, and every procedure was identical for both groups.

4. Business Letters on the Web²)

The web site was developed in consideration of the specific needs of EFL learners when writing business letters. The students need contextual knowledge which is known as rhetorical patterns and linguistic knowledge to write business letters. The Web based activities were devised according to the learners’ needs in order to develop a dual knowledge based on the results of the previous research mentioned above. The step-by-step exercises were designed for learners to make them aware of the rhetorical structures and language patterns of business letters.

The contents of each letter on the home page were the same as the paper-based handouts. However, the main functions of the web site differentiated from the paper and pencil based class were as follows. First, key words and important language structures were enhanced visually with colors on most pages. Underlined and bold faced enhancement were also given to the materials for both groups. Since De Ridder (2000, 2002, 2003) showed no effect on vocabulary learning of input enhancement without some kind of elaboration, there was an effort to make salient adding glosses (usually in L1) within enhanced words and structures in this work. A mouse roll-up function for glosses was used on the web site, but the materials for the control group gave the word meaning or explanation next to the parts in the parenthesis in L1.

Second, the web site used three answer formats such as drag-and-drop for reordering or fill-in-the-blanks activities, type-the-answer, and multiple choices considering relevancy and expected required time to complete each task. For the control group, however, the students numbered for reordering activities and wrote in hand for most of the other activities on their handout work sheets.

Third, feedback on the wrong answers was given differently. During the third phase, the writing instruction, students were asked to answer questions or to solve some problems. In these activities, the web site was designed to give instant feedback on the

²) www.bzwriting.co.kr
wrong answers individually. The students could not proceed unless they gave correct answers to every question. For the control group, students were asked to complete each activity first, and then the instructor gave answers orally for the whole class.

Fourth, the web site includes an on-line dictionary function so that the experimental group students were able to access the data when they were allowed to. In order to make both groups identical, the students in the experimental group were not allowed to access other online resources. The control group students used portable dictionaries such as mobile phones or electronic dictionaries when they were told to do so. The instructors’ explanation was supplemented for the entire period for the control group.

![Figure 1] The Main Screen of the Web Site

Fifth, for the last step of the Dudley-Evans and St. John’s synthesis approach (1998), students evaluated writing tasks through peer review or reformulation. Students in the experimental group were encouraged to give feedback on their partners’ post-test writing scripts within the pre-assigned groups. However, students in the control group were assigned to their groups in class according to the order of students who finished the post-test writing tasks; after giving feedback to each other, the students revised their writing based on the feedback they received.
5. Data Analysis

1) Analytic Scoring

To measure the participants' pre- and post-test writing, an analytic scoring method was employed. The Criteria for Assessing Written Genres (Paltridge, 1992) was applied with slight alteration (Appendix 1). Paltridge (1992) categorized his criteria with six subsections: overall impression, ideas and argument, accuracy, fluency, appropriacy, and intelligibility. However, the Intelligibility section was exempted because it overlapped with other sections. Bachman & Palmer (1996) defined language knowledge as grammatical knowledge, textual knowledge, functional knowledge, and sociolinguistic knowledge. Overall impression and fluency covered textual knowledge, meaning rhetorical organization and cohesion. Ideas & argument refer to functional knowledge, accuracy refers to grammatical knowledge, and appropriacy refers to sociolinguistic knowledge. In this study, the highest score each participant could receive for each criterion for analytic scoring was 5 and the lowest was 1. Thus, the highest total score of a well written draft would be 25 points. Five criteria were scored separately and calculated. The researcher and two rater rated the pre- and post-test drafts analytically. To maintain consensus among the raters, inter-rater reliability (Cronbach α = .810-.995) was assessed.

2) Variables and Data Analysis

The major variables were writing instructions for two different modes, the students' proficiency level, and the student writing performance. The data were analyzed via paired T-test to compare the mean scores of pre- and post-test writing tasks between both groups and T-test for the comparison of the proficiency level within each group. In addition, an analysis of covariance (ANCOVA) was used to measure the effects between the instruction modes and writing tasks with each pre-test variable serving as the covariate for the same post-test variable. Descriptive analyses were also applied. The data were analyzed from the SPSS 12.0.

---

3) A rater is a native speaker of English who has been teaching English at Korean universities for 6 years. The other rater is a native speaker of Korean who finished her doctoral course majoring in English Education and has been teaching business letter writing classes for 3 years.
IV. RESULTS AND DISCUSSION

1. The Effects of Instruction on Business Letter Writing Between Two Groups

The mean scores for pre- and post-test for the four business letter writing tasks were analyzed, and ANCOVA was used to investigate the effects of technology-enhanced writing instruction on business letter writing performance between groups. Table 2 shows that both groups significantly increased their writing scores from the pre-test to the post-test (p < .05). The paired t-test results indicated that both methods of instruction had a positive effect on letter writing performance for each task. The finding garners support from a number of studies (Bhatia, 1997; Cheng, 2007; Flowerdew, 2000; Henry & Roseberry, 1998; Hyland, 1990; Hyon, 2001; Johns, 1995; Lee, 2006; Mustafa, 1995; Sengupta, 1999; Swami, 2008). By exposing learners to the target genre and drawing their attention to the rhetorical move structure and appropriate associated linguistic features, the genre-based instruction seems to have enabled learners to gain insights into the working of the genre.

<table>
<thead>
<tr>
<th>Task</th>
<th>Group</th>
<th>N</th>
<th>Pre-test M</th>
<th>SD</th>
<th>Post-test M</th>
<th>SD</th>
<th>Adjusted score (Post-test) M</th>
<th>SE</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel reservation</td>
<td>A</td>
<td>23</td>
<td>13.72</td>
<td>3.47</td>
<td>15.16</td>
<td>3.19</td>
<td>14.08</td>
<td>.63</td>
<td>-2.90*</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>35</td>
<td>9.15</td>
<td>3.34</td>
<td>15.81</td>
<td>2.83</td>
<td>16.52</td>
<td>.49</td>
<td>-10.17*</td>
</tr>
<tr>
<td>Complaint</td>
<td>A</td>
<td>25</td>
<td>12.11</td>
<td>3.63</td>
<td>16.88</td>
<td>3.77</td>
<td>16.39</td>
<td>.64</td>
<td>-7.50*</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>29</td>
<td>9.99</td>
<td>3.34</td>
<td>17.93</td>
<td>3.07</td>
<td>18.35</td>
<td>.59</td>
<td>-10.67*</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>33</td>
<td>10.28</td>
<td>2.98</td>
<td>17.12</td>
<td>3.00</td>
<td>17.31</td>
<td>.51</td>
<td>-10.25*</td>
</tr>
<tr>
<td>Sales promotion</td>
<td>A</td>
<td>22</td>
<td>12.82</td>
<td>2.94</td>
<td>18.30</td>
<td>3.31</td>
<td>17.61</td>
<td>.66</td>
<td>-9.20*</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>31</td>
<td>10.99</td>
<td>2.77</td>
<td>16.22</td>
<td>3.60</td>
<td>16.71</td>
<td>.55</td>
<td>-8.78*</td>
</tr>
</tbody>
</table>

\( p < .05 \)

Group A: Control Group, Group B: Experimental Group

The results for the post-test writing assignment between the two groups were compared with ANCOVA (Table 3). First, for the hotel reservation letter, the results indicate that there was a significant difference for the post-test writing scores between the two groups after controlling for pre-test scores: \( F = 7.94, p < .05 \). For the complaint
letter, there was a significant difference for the post-test writing scores between the two groups after controlling for pre-test scores: \( F = 4.93, p < .05 \). These findings indicate that TEWI was more effective than the traditional instruction in that students in the TEWI class showed greater improvement for the hotel reservation and complaint letters than those receiving traditional instruction.

<table>
<thead>
<tr>
<th>Task</th>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hotel reservation</td>
<td>Model</td>
<td>104.98</td>
<td>2</td>
<td>40.61</td>
<td>7.29</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Covariate(Pre-test)</td>
<td>47.85</td>
<td>1</td>
<td>47.85</td>
<td>6.65</td>
<td>.01*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>57.14</td>
<td>1</td>
<td>57.14</td>
<td>7.94</td>
<td>.01*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>396.03</td>
<td>55</td>
<td>5.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>501.01</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complaint</td>
<td>Model</td>
<td>131.68</td>
<td>2</td>
<td>65.84</td>
<td>6.88</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Covariate(Pre-test)</td>
<td>84.43</td>
<td>1</td>
<td>84.43</td>
<td>8.81</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>47.25</td>
<td>1</td>
<td>47.25</td>
<td>4.93</td>
<td>.05*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>488.99</td>
<td>51</td>
<td>9.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>620.67</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cover letter</td>
<td>Model</td>
<td>59.79</td>
<td>2</td>
<td>29.89</td>
<td>3.55</td>
<td>.04</td>
</tr>
<tr>
<td></td>
<td>Covariate(Pre-test)</td>
<td>45.32</td>
<td>1</td>
<td>45.32</td>
<td>5.39</td>
<td>.02*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>14.47</td>
<td>1</td>
<td>14.47</td>
<td>1.72</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>462.87</td>
<td>55</td>
<td>8.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>522.65</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales promotion</td>
<td>Model</td>
<td>230.67</td>
<td>2</td>
<td>115.34</td>
<td>12.98</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Covariate(Pre-test)</td>
<td>221.32</td>
<td>1</td>
<td>221.32</td>
<td>24.91</td>
<td>.00*</td>
</tr>
<tr>
<td></td>
<td>Group</td>
<td>9.35</td>
<td>1</td>
<td>9.35</td>
<td>1.05</td>
<td>.31</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>444.20</td>
<td>50</td>
<td>8.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>674.87</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\( p < .05 \)

Second, the difference between post-test writing performance scores between the two groups for the cover letter is demonstrated. The results indicate that even though the pre-test writing performance scores for the cover letter were significantly correlated with the post-test writing scores: \( F = 5.39, p < .05 \), there was no significant difference for the post-test scores between the two groups after controlling for the pre-test scores. For the sales promotion letter, the same results were shown: however, although the pre-test
writing performance scores for the cover letter were significantly correlated with the post-test writing scores: \( F = 24.91, p < .05 \), there was no significant difference for the post-test scores between the two groups after controlling for the pre-test scores. These findings reveal that although both instruction methods increased post-writing performance significantly (within group), there was no significant difference in writing improvement between the two groups for the cover letter and the sales promotion letter.

As shown in Table 3, the experimental group improved more than the conventional group on the more formulaic genres. Starting with zero- or low-level awareness of genre in the pre-test of the hotel reservation letter, the experimental group students benefited from using computers. Students in the TEWI course were fond of the several features on the web-sites. In-depth interviews after the experiment showed that one of the benefits of using computers was online dictionary use. The informants reported that using online dictionaries was convenient and useful as portable dictionaries. Enhanced input with L1 glosses, instant feedback on wrong answers, and more various answer formats seemed to play key roles for the experimental group to outperform their counterparts in the traditional writing instruction course (Chapell, 2003; De Ridder, 2000, 2002, 2003; Heift, 2003; Miyasako, 2002). As a formulaic genre, the step by step activities for raising their awareness of rhetorical patterns and linguistic features seemed to foster their writing skills for hotel reservation letters and complaint letters, which is contrary to the control group.

However, there were no significant differences for the other two letters: cover letters and sales promotions. Compared to the hotel reservations and complaints, the less formulaic genres require a longer text that contains at least seven moves: Establishing credentials, Introducing the offer (candidature), Offering incentives, Enclosing documents, Using pressure tactics, Soliciting response, Ending politely (Bhatia, 1993). These are referred to as 'promotional genres' which demand writers' creative and inventive skills as well as considerably proficient linguistic knowledge in English. As revealed by the interviewees in the experimental group, these two tasks were very difficult for them even though they claimed that there were thoughtfully designed materials and easily accessible online dictionaries. They complained about the short amount of time to improve adequate language skills for those two letters. Therefore, for the cover letters and sales promotions, learners' linguistic knowledge and proficiency seems to be critical for technology-enhanced instruction.
2. The Effects of Instruction Based on the Analytic Scores

For a closer examination of writing improvement, a Paired Samples T-test between the pre-test writing and post-test writing was conducted in terms of the total score and five sub-criteria of analytic measurement including ‘overall impression’, ‘ideas and argument’, ‘accuracy’, ‘fluency’, and ‘appropriacy’. In addition, ANCOVA with pre-test writing scores as the covariate was calculated.

1) Hotel Reservation Letter

As can be seen in Table 4, the results showed that significant differences were found in terms of the total score of analytic measurement for the hotel reservations. Specifically, ‘overall impression’ and ‘ideas and argument’ for the analytic measurement were significantly different. These results reveal that the students’ hotel reservations improved after receiving TEWI for both ‘overall impression’ and ‘ideas and argument’. Even though significant differences were not found for ‘accuracy’, ‘fluency’, and ‘appropriacy’, the mean scores for the sub-categories between the two groups showed that the experimental group students improved more than the control group (Table 4).

2) Complaint Letter

Significant differences were found in terms of the total score of analytic measurement for the complaints. Specifically, in terms of five sub-criteria of analytic measurement, ‘overall impression’ and ‘fluency’ were significantly different. These results reveal that the students’ complaints improved after receiving TEWI in both ‘overall impression’ and ‘fluency’. Even though significant differences were not found for ‘ideas and argument’, ‘accuracy’, and ‘appropriacy’, the mean scores of the sub-categories between two groups showed that the experimental group students improved even more than the control group (Table 5). Given the above results, beneficial effects of teaching formulaic business letters with TEWI are placed on ‘overall impression’, ‘ideas and argument’, and ‘fluency’.
[Table 4] ANCOVA Results for Hotel Reservation Writing Performance Based on Analytic Measurement

<table>
<thead>
<tr>
<th>Analytic</th>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Adjusted mean (Post-score)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Overall impression</td>
<td>A</td>
<td>2.88</td>
<td>.74</td>
<td>3.04</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.85</td>
<td>.66</td>
<td>3.19</td>
<td>.67</td>
</tr>
<tr>
<td>Ideas and argument</td>
<td>A</td>
<td>2.62</td>
<td>.88</td>
<td>3.00</td>
<td>.96</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.87</td>
<td>.81</td>
<td>3.14</td>
<td>.87</td>
</tr>
<tr>
<td>Accuracy</td>
<td>A</td>
<td>2.70</td>
<td>.81</td>
<td>2.96</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.87</td>
<td>.73</td>
<td>3.03</td>
<td>.59</td>
</tr>
<tr>
<td>Fluency</td>
<td>A</td>
<td>2.64</td>
<td>.83</td>
<td>2.93</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.90</td>
<td>.75</td>
<td>3.04</td>
<td>.71</td>
</tr>
<tr>
<td>Appropriacy</td>
<td>A</td>
<td>2.88</td>
<td>.69</td>
<td>3.23</td>
<td>.64</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>1.68</td>
<td>.69</td>
<td>3.41</td>
<td>.47</td>
</tr>
<tr>
<td>Total</td>
<td>A</td>
<td>13.72</td>
<td>3.47</td>
<td>15.16</td>
<td>3.19</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>9.15</td>
<td>3.34</td>
<td>15.81</td>
<td>2.83</td>
</tr>
</tbody>
</table>

*p<.05  **p<.01
Group A: Control Group, Group B: Experimental Group

3) Cover Letter

For the cover letter writing task, the total scores of analytic measurement for both groups were not significantly different even though the experimental group’s total mean improved more than the total mean of the students in the control group. Only ‘appropriacy’ among the sub-categories showed a significant difference between two groups. The sub-category ‘appropriacy’ represents appropriate language use to genre, text type, and communicative goal within a good range of genres and text types. In addition, appropriate textual organization and layout to genre and text type were included in this category (Appendix 1). The web site activities such as matching and reordering were helpful for learners to recognize the organization of the text as well as for raising rhetorical consciousness. However, the students who participated in the in-depth interview in the control group reported that writing a cover letter was difficult for them in terms of contents and grammar. They had difficulty using suitable language and writing
grammatically correct sentences (Table 6).

<table>
<thead>
<tr>
<th>Table 5</th>
<th>ANCOVA Results for Complaint Letter Writing Performance Based on Analytic Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Complain letter</td>
</tr>
<tr>
<td></td>
<td>Analytic Group</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Ideas</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Accuracy</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Fluency</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Appropriacy</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Total</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

*p < .05  **p < .01
Group A: Control Group, Group B: Experimental Group

4) Sales Promotion Letter

For the sales promotion writing task, the total scores of analytic measurement for both groups were not significantly different. The control group’s total mean improved more than the total mean of the students in the experimental group for every sub-category (Table 7). Since sales promotion letters are in the same less-formulaic genre category as the cover letters, similar results were expected. However, writing a sales promotion letter requires the writer to catch the reader’s attention through content and form, unlike the job application letter even though both produce an identical pattern of moves. The content includes questions, proverbs, quotations, and startling statements or facts. The form can be manipulated by using such devices as prominent font sizes or designs, underscores, bright colors, and small gifts (Mansfield & Bahniuk, 1987). Unfortunately, the post-test writing page on the web-site does not have such functions except for capitalization.
Students in the control group easily applied and used manoeuvre strategies on their writing promotion letters. In addition, creating interest and desire for the products or services must be included. To do this, concrete language such as vivid, inspiring words must be used to create a desire for the product or service.

Therefore, the students’ language proficiency was related to the post-test writing performance for the sales promotion tasks for each instruction method. A period of half-long semester did not provide sufficient time to learn how to produce effective sales promotion letters. However, the students displayed improvement in the post-test writing tasks.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>ANCOVA Results for Cover Letter Tasks Based on Analytic Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cover letter</td>
</tr>
<tr>
<td></td>
<td>Analytic Group</td>
</tr>
<tr>
<td></td>
<td>Pre-test M</td>
</tr>
<tr>
<td>Overall impression</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Ideas and argument</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Accuracy</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Fluency</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Appropriacy</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td>Total</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
</tbody>
</table>

*p<.05
Group A: Control Group, Group B: Experimental Group

Overall, the results suggest that using technology in business letter writing classes may have a beneficial effect on a certain aspect of the sub-category in analytic scoring except for ‘accuracy’. Although the students were able to improve in certain aspects in a relatively short period of time, improving in ‘accuracy’ appeared to have taken a longer
time. The activities for identifying and describing the moves and their typical textual features such as reordering a text from a set of jumbled paragraphs using drag-and-drop format and naming each move part to the given letter were most beneficial for the shorter letters to experiment group students than any other aspects. For the less formulaic genres, significant effects were not observed on most aspects of the sub-category in analytic scoring except for 'appropriacy' for cover letters. Although any interpretation based on these preliminary findings should be treated with caution, this could be a result of the fact that the cover letter writing task had immediate relevance to the experimental group students' needs. They showed much higher interest and motivation to learn how to write a cover letter in English than the students in the control group. This finding is in line with Swami (2008) that preparing students for real world writing provides students with the confidence to handle specific genres.

<table>
<thead>
<tr>
<th>Table 7</th>
<th>ANCOVA Results for Sales Promotion Letter Writing Tasks Based on Analytic Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Sales promotion letter</td>
</tr>
<tr>
<td></td>
<td>Analytic</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>Overall impression</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Ideas and argument</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Accuracy</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Fluency</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Appropriacy</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Group A: Control Group, Group B: Experimental Group

In Swami's (2008) study, it was reported that the students were able to transfer their
awareness of the previous genre (sales promotion letter) to the effective writing of the pre- and post-tests of job application letters, particularly in the promotional nature of the two genres. However, in the current study, the possibility of transferring learning skills from one to another was not observed. The ability to write cover letters did not seem to transfer to writing sales promotion letters.

3. The Effects of Instruction on Business Letter Writing in Proficiency Level

To investigate the differences on the business letter writing performance at different proficiency levels, the mean differences of the pre- and post-test scores in each group were analyzed at two different proficiency levels using a T-test. The students in both groups were divided into two different levels according to the average scores of pre-test writing performance for each letter. As revealed in Table 8, the low level students improved their writing scores more than the high level students on the four writing tasks. Particularly, the low level students in the experimental group improved their writing performance more than the high level students on each task even though a significant difference was not observed for the sales promotion task.

<table>
<thead>
<tr>
<th>Task</th>
<th>Group</th>
<th>N</th>
<th>High</th>
<th>Low</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>N M SD</td>
<td>N M SD</td>
<td></td>
</tr>
<tr>
<td>Hotel reservation</td>
<td>A</td>
<td>23</td>
<td>12 .69</td>
<td>11 2.24</td>
<td>2.32</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>35</td>
<td>18 4.33</td>
<td>17 9.12</td>
<td>3.62</td>
</tr>
<tr>
<td>Complaint</td>
<td>A</td>
<td>25</td>
<td>13 4.77</td>
<td>12 4.78</td>
<td>2.70</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>29</td>
<td>18 6.11</td>
<td>11 10.94</td>
<td>2.82</td>
</tr>
<tr>
<td>Cover letter</td>
<td>A</td>
<td>25</td>
<td>11 2.85</td>
<td>14 6.10</td>
<td>4.16</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>33</td>
<td>16 4.98</td>
<td>17 8.59</td>
<td>4.08</td>
</tr>
<tr>
<td>Sales promotion</td>
<td>A</td>
<td>22</td>
<td>11 5.21</td>
<td>11 5.76</td>
<td>3.11</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>31</td>
<td>12 4.81</td>
<td>19 5.49</td>
<td>3.58</td>
</tr>
</tbody>
</table>

* p<.05  ** p<.01
Group A: Control Group, Group B: Experimental Group

The results confirmed Paltridge's (2001) claim that a genre-based approach is especially beneficial for beginners and intermediate students in terms of the productivity of a text that serves its intended purpose. A significant improvement shown in the low level
students of the TEWI environment proved that genre-based writing instruction within a technology-enhanced setting is most beneficial to the lower level learners for hotel reservation (M = 9.12, p < .01), complaint (M = 10.94, p < .01), and cover letters (M = 8.59, p < .01). Although a significant improvement between low level and high level learners was not observed for sales promotion letters in two groups, the low level students improved slightly more than the higher level students in both groups.

V. CONCLUSION

As the computer remains to be a key component in our daily lives, it will continue to affect language teaching and reshaping the learners’ needs. Accordingly, keeping constantly informed on computer technology as a valuable teaching aid can benefit language teaching. Meanwhile, computer technology cannot be an effective tool for language learning without integrating pedagogically appropriate tasks for the relevant learners at hand. The results in this study suggest some general implications and recommendations on genre-based writing instruction in an EFL context.

The students’ writing performance improved on the four different types of business letters in both groups. The results of the present study confirm that genre-based writing gives students an opportunity to produce written texts for a special purpose. The first research question analyzed the effects of TEWI on four different types of business letter writing tasks compared to traditional paper-and-pencil based instruction. TEWI was more adaptable to formulaic letter writing tasks even though both groups displayed significant improvement for the four different business letters. The incorporation of technology in a genre-based writing class requires determining tasks in which technology can make valuable contributions as a supplementary tool.

The second research question investigated the effects of instruction based on analytic measurement in terms of ‘overall impression’, ‘ideas and argument’, ‘accuracy’, ‘fluency’ and ‘appropriacy’ between the two study groups. The results proved that the students significantly improved in different sub-categories of the measurement after receiving TEWI. For a balanced development of writing abilities, teachers should be fully aware of the fact that different language features and patterns must be taught by different modes, and technology must utilize appropriate tasks for specific and intended pedagogical orientation and goals.

The third research question analyzed the effects of instruction on business letter
writing at varying proficiency levels. Certain letter writing tasks using technology were more adaptable to a specific genre for writing proficiency levels. The students at low levels improved their writing scores more than those at high levels for the four writing tasks. Particularly, the low level students in the experimental group improved their writing performance more than the high level students on the tasks even though a significant difference was not noted for the sales promotion writing task. These findings can infer that the low level learners benefit more from technology on writing tasks. Therefore, it can be concluded that TEWI will be more useful for low level students for more formulaic business letter writing tasks. In addition, L2 genre writing teachers may motivate lower level students to use technology as well as provide them with useful teaching aids.

Despite several positive findings in this study, a few limitations were found. These were the uneven number of the participants between the two groups and uneven proficiency level of the participants. Data from a small number of participants may not be generalized into a bigger sample. More extended period of time than the current study is needed to find the efficacy of TEWI on developing linguistic knowledge. Further research should explore the potential outcomes of TEWI on different genres. More detailed and in-depth analyses of language use and linguistic features appeared in writing scripts can shed light on what the teachers must focus on when teaching business letter writing.

REFERENCES


The Effects of Technology-Enhanced Instruction on Business Letter Writing Skills


The Effects of Technology-Enhanced Instruction on Business Letter Writing Skills


APPENDIX

1. Analytic Scoring Rubric (Paltridge 1992, pp. 248-49)

**A. Overall Impression**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Good writer.</td>
</tr>
<tr>
<td>5</td>
<td>Can write well within general and own special-purpose areas.</td>
</tr>
<tr>
<td>5</td>
<td>Able to produce organized, coherent, and cohesive discourse.</td>
</tr>
<tr>
<td>4</td>
<td>Competent writer.</td>
</tr>
<tr>
<td>4</td>
<td>Easy to read from start to finish.</td>
</tr>
<tr>
<td>4</td>
<td>Texts generally well organized.</td>
</tr>
<tr>
<td>3</td>
<td>Moderate writer.</td>
</tr>
<tr>
<td>3</td>
<td>Fairly easy to read and understand.</td>
</tr>
<tr>
<td>3</td>
<td>Texts generally well organized.</td>
</tr>
<tr>
<td>2</td>
<td>Limited writer.</td>
</tr>
<tr>
<td>2</td>
<td>Rather difficult to follow.</td>
</tr>
<tr>
<td>1</td>
<td>Intermittent writer.</td>
</tr>
<tr>
<td>1</td>
<td>Very difficult to follow.</td>
</tr>
</tbody>
</table>

**B. Ideas and Argument**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Good range of relevant ideas are coherently expressed.</td>
</tr>
<tr>
<td>5</td>
<td>Evidence is presented and discussed.</td>
</tr>
<tr>
<td>5</td>
<td>Where appropriate, a point of view is presented and developed.</td>
</tr>
<tr>
<td>4</td>
<td>Good range and progression of ideas expressed and coherently arranged, although there may still be isolated problems.</td>
</tr>
<tr>
<td>4</td>
<td>Ideas and evidence are relevant, but more detail may still be desirable.</td>
</tr>
<tr>
<td>3</td>
<td>Moderate range of ideas expressed.</td>
</tr>
<tr>
<td>3</td>
<td>Topic development is present, but may still lack some detail and supporting statements.</td>
</tr>
<tr>
<td>3</td>
<td>Information is generally arranged coherently.</td>
</tr>
<tr>
<td>2</td>
<td>Limited range of ideas expressed.</td>
</tr>
<tr>
<td>2</td>
<td>Development may be restricted and often incomplete or unclear.</td>
</tr>
<tr>
<td>2</td>
<td>Information is not arranged coherently.</td>
</tr>
<tr>
<td>1</td>
<td>Evidence of few ideas with no apparent development.</td>
</tr>
<tr>
<td>1</td>
<td>Little apparent coherence to the text.</td>
</tr>
</tbody>
</table>

**C. Accuracy**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Confident and generally accurate use of lexical and grammatical patterns, cohesive devices, punctuation, and spelling.</td>
</tr>
<tr>
<td>4</td>
<td>Competent grasp of lexical and grammatical patterns, although problems may still occur with punctuation and spelling.</td>
</tr>
<tr>
<td>3</td>
<td>Moderate grasp of lexical and grammatical patterns and use of cohesive devices, enabling the expression of a broader range of meanings.</td>
</tr>
<tr>
<td>3</td>
<td>Occasional faults in punctuation and spelling.</td>
</tr>
<tr>
<td></td>
<td><strong>Meewha Baek</strong> 71</td>
</tr>
<tr>
<td>---</td>
<td>------------------</td>
</tr>
</tbody>
</table>
| 2 | • Limited grasp of lexical and grammatical patterns and use of cohesive devices.  
   |     • Weaknesses in punctuation and/or spelling. |
| 1 | • Very limited grasp of lexical and grammatical patterns.  
   |     • Little grasp of conventions of punctuation and spelling and use of cohesive devices. |

### D. Fluency

|   | **Writes well on general topics and on matters relevant to own special-purpose interests.**  
   |     • Good range of grammatical structures and vocabulary. |
| 5 | • Can generally write spontaneously on general topics.  
   |     • Competent use of a range of vocabulary and grammatical and discourse structures. |
| 4 | • Text show increased development.  
   |     • Writes with a fair range and variety of vocabulary and grammatical and discourse structures. |
| 3 | • Texts may be simple, showing little development.  
   |     • Limited range of vocabulary and grammatical and discourse structure. |
| 2 | • Isolated words or short stock phrases only.  
   |     • Very short text. |

### E. Appropriacy

|   | **Use of language mainly appropriate to genre, text type, and communicative goal within a good range of genres and text types.**  
   |     • Textual organization and layout appropriate to genre and text type. |
| 5 | • Use of language generally appropriate to genre, text type, and communicative goal within a range of text types.  
   |     • Textual organization and layout appropriate to genre and text type. |
| 4 | • Use of language generally appropriate to genre, text type, and communicative goal within a moderate range of genres and text types.  
   |     • Textual organization and layout generally appropriate to genre and text type. |
| 3 | • Use of language generally appropriate to genre, text type, and communicative goal within a limited range of genres and text types.  
   |     • Layout generally appropriate to genre. |
| 2 | • Use of language (including layout) minimally appropriate to genre, text type, and communicative goal. |

**Key words:** technology-enhanced writing instruction, ESP, business letters  
**Applicable levels:** tertiary education

**Author:** Baek, Meewha (Ewha Womans University); mpark63@hanmail.net

**Received:** May 15, 2009  
**Reviewed:** July 30, 2009
CALL Technology Education for L2 Teachers: Does It Work?*

Kwang Hee Hong (The Ohio State University)


Primary issues concerned with CALL teacher education are in two folds: integration of CALL technology with teacher education program; and integration of CALL technology into the L2 classrooms. While increased attention has been paid to the former, there is a relatively small body of research on the latter. Although collective findings suggest the efficacy of CALL teacher education in the teacher education programs, L2 researchers and teacher educators are still challenged by L2 teachers’ integration of technology into the classrooms in relation to their prior education on technology. The present study seeks to address this gap in the literature. It investigates the relationship between L2 teachers’ prior experience on technology education, and their use of computer technology in the classroom. The data were collected from 200 (out of 454) secondary school L2 teachers across an entire county in a midwestern state in the U.S. The results show that L2 teachers with more technology education experience tended to use computer technology more frequently in their classrooms.

I. INTRODUCTION

A need for foreign and second language (L2) teachers who are able to work with computer technology in the technology-enhanced L2 classroom has been increasing over the past decades (Chapelle & Hegelheimer, 2004; Davies, 1997; Hubbard, 2008; Hubbard &

* The earlier version of this study was presented at the annual meeting of CALICO Conference at Tempe, AZ in 2009.
Levy, 2006; Levy, 1997; Moore, Morales, & Carel, 1998). Two primary streams of development in L2 education have led to this need: (1) The proliferation of networked computer technology in and out of the L2 classroom (Kim & Santiago, 2005; Meskill, Anthony, Hilliker-VanStrander, Tseng, & You, 2006a; Parsad & Jones, 2006) and (2) a panoply of Computer-Assisted Language Learning (CALL) research findings on the pedagogical benefits of CALL technology for L2 teaching and learning (Bush & Terry, 1997; Chapelle, 2001; Warschauer & Kern, 2000).

As noted by Levy and Stockwell (2006), it is no longer optional, but rather necessary for L2 teachers in the technology-enhanced classroom to "understand the empowering and limiting features of any technology, and what technology can achieve in relation to the language skills and areas in order to make informed choices about how to implement a CALL component" (p.190). As an attempt to achieve this goal, L2 researchers and teacher educators have paid increased attention to L2 teachers' CALL technology education in the teacher education program (Hubburt & Levy, 2006; Kassen, Lavine, Murphy-Judy, & Peters, 2007). Despite such attempt, researchers and teacher educators are still challenged by L2 teachers' integration of technology into the classroom in relation to their prior technology education (e.g., Egbert, Paulus, & Nakamichi, 2002; Lam, 2000; Meskill et al., 2006a). The purpose of this study is to address this gap by focusing on the relationship between L2 teachers' prior CALL technology education experience and their use of CALL technology in the classroom.

II. LITERATURE REVIEW

Previous studies on L2 teachers' experience of CALL technology education in the teacher education program suggest that teachers' technology training experience serves to set up a foundation for fostering their use of computer technology by expanding knowledge on the available CALL technologies (Desjardins & Peters, 2007; Hegelheimer, 2006; Luke & Britten, 2007) and having a positive attitude (or self-confidence) toward CALL technologies (Kamhi-Stein, 2000; Kassen & Higgins, 1997; van Olphen, 2007). While the ensuing studies have made attempts to look further into the relationship between L2 teachers' technology education and their use of computer technology in the classroom (Egbert et al., 2002; Lam, 2000; Meskill, Mossop, DiAngelo, & Pasquale, 2002; Wong & Benson, 2006), L2 researchers and teacher educators remain confronted by a substantive question of whether L2 teachers' technology education contributes to their use of computer
technology in the actual classroom settings.

Rather than providing a definitive answer to the question, previous research found that other than L2 teachers’ technology education experience, there are numerous other factors that are directly or indirectly relevant to the promotion and hindrance of teachers’ use of computer technology in the classroom. For instance, teachers’ attitudes toward the use of computer technology (Lam, 2000; Wong & Benson, 2006), general computer literacy skills (Egbert et al., 2002; Olesova & Meloni, 2006), teaching experience, age, workload (Meskill et al., 2002; Moore et al., 1998), and various contextual factors such as technology availability in and support from the school (Meskill et al., 2006a).

Such findings are worthwhile in that they exhibit multi-dimensional aspects of L2 teachers’ use of computer technology in the classroom. And yet, the fact that multiple factors are involved indeed makes it a more formidable undertaking for L2 researchers to pursue the substantive question of whether L2 teachers’ technology education experience serves to foster their use of computer technology in the classroom (Egbert et al., 2002; Lam, 2000; Meskill et al., 2002; Wong & Benson, 2006). While it is a thorny undertaking to pursue the question, one possibility to overcome this challenge would be to expand previous studies by addressing their limitations (Coley, 1997). Based on a review of relevant literature on CALL teacher education, Hong (2010) points out the limitations of previous studies in three respects: (1) methodologically, a majority of studies are based on qualitative research of a small sample; (2) analytically, descriptive studies predominate and most studies tend to consider teachers’ technology integration as a unitary construct; and (3) in terms of research context, the number of teachers and schools is small, such as a small group of teachers in only one or two schools, or small number of cohort teachers during or after the formal technology education.

Given the substantive question for researchers to pursue and the above-listed limitations, studies concerned with L2 teachers’ integration of technology into the classroom need to examine the following questions in methodologically more rigorous and analytically more systematic ways: (1) Are secondary school L2 teachers with more technology education experience likely to use computer technology more frequently in the classroom, considering their use of computer technology for different instructional purposes such as delivering instruction, teacher-directed student use of technology to create products, and teacher-directed students’ use of technology during class time?; (2) If yes, how much technology education do L2 teachers need in order to become more frequent computer technology users in the classroom? To investigate these questions, this study uses data collected from public secondary school L2 teachers throughout 91 schools across
16 school districts of a county in a midwestern state in the U.S.

III. METHOD

1. Sample

The present study relies on survey data collected from L2 teachers (including ESL teachers) working at secondary public schools (grades 7–12) across a county in a midwestern state. The sampling frame was made on the basis of public data resources available in the State Department of Education (SDE), from which was obtained the list of L2 teachers, school districts, and schools where the teachers were working during the academic year of 2006–2007. The initial sampling frame from the SDE public resources included a total of 586 L2 teachers. Since the initial sampling frame contained duplicated information about L2 teachers and included American Sign Language (ASL) teachers and elementary school teachers, it was reframed excluding them. The revised sampling frame included a total of 471 teachers working in a total of 91 schools across 16 school districts.

In addition, in an effort to obtain the most updated sampling frame (i.e., reducing mismatches between the teachers in the sampling frame and the current teaching staff members at the time of the study), letters of cooperation were sent to foreign language subject chair teachers in 91 schools, requesting them to confirm the list of the current L2 teaching staff against the list in the revised sampling frame. The L2 chair teachers from 45 schools (49% out of 91 schools) replied to the letter of request, and the final sampling frame reflecting the chair teachers’ response included 454 teachers working in 91 schools across 16 school districts.

2. Procedure

A total of 454 survey packets were sent out to L2 teachers in the final sampling frame in early September, 2007, about one week into the new academic year. The first reminder was sent 3 weeks after sending out the survey packets; the second reminder was sent 3 weeks after the first reminder. Of the 454 questionnaire booklets, 223 booklets (49%) were returned by the indicated due date on the cover letter. Among the 223 returned booklets, 23 (10% out of 223) were excluded in the data analysis due to missing data. Thus, responses from 200 teachers of 62 schools (68% of the total of 91 schools) across 16 school districts were used for data analysis.
3. Measurement

The questionnaire booklet was comprised of 5 parts (Part I – Part V) where question items were asked about the variable of interest. The face validity of the questionnaire was tested with 5 doctoral students majoring in foreign and second language education. The content validity of the questionnaire was reviewed by a panel of 4 experts and 3 former public school L2 teachers. A pilot study was conducted where 20 people who used to work as L2 teachers in public schools in the U.S. (grades 7–12) participated; and the internal consistency of each part of the questionnaire was tested. The following sections detail each part of the questionnaire booklet and the corresponding items.

1) Part I. Outcome Variable: L2 Teachers’ Use of Computer Technology in the Classroom

Part I was designed to measure L2 teachers’ use of computer technology in their classroom. Although teachers’ use of computer technology has multi-faceted aspects (Meskill et al., 2006a; O’Dwyer, Russell, & Bebell, 2005), few studies on L2 teachers’ use of computer technology have considered those aspects pertaining to L2 teachers’ use of computer technology in the classroom. The items for measuring L2 teachers’ use of computer technology in the classroom were adapted from the instruments developed by O’Dwyer and her colleagues (2005). Their instruments were originally designed to measure the use of technology by elementary, middle, and high school teachers in the U.S., considering multi-faceted aspects of teachers’ use of computer technology in their classroom.

The original instruments consist of four specific aspects pertaining to teachers’ use of computer technology: (1) Teacher-Use of Technology for Delivering Instruction (T-UTDI); (2) Teacher-Use of Technology for Class Preparation (T-UTCP); (3) Teacher-Directed Student Use of Technology to Create Products (T-DSUTCP); (4) Teacher-Directed Student Use of Technology during Class Time (T-DSUTCT). Instruments about three of these aspects were taken and adapted for this study: T-UTDI, T-DSUTCP, and T-DSUTCT. T-DSUTCP and T-DSUTCT were comprised of multiple items, while T-UTDI was measured using a single indicator based on a response to the question, ‘How often do you use a computer to deliver instruction in your class?’ on a 5-point ordinal scale (never, less than once per week, once per week, 3 times a week, and daily). The participating teachers’ responses to this item were dichotomized for analysis into ‘Less than once per week’ for teachers who did not frequently use computer
technology (i.e., those whose response was 'never' or 'less than once per week') and 'At least once per week' for those who did so frequently.

The number of items for T-DSUTCP was 4 items adapted from the original 5; and 6 items for T-DSUTCT, adapted from the original 6. The items for both instruments were rated on a 5-point summative scale (1 = never, 2 = once or twice a year, 3 = several times a year, 4 = several times a month, or 5 = several times a week). Higher scores on each aspect indicate that teachers use computer technology more frequently in the classroom for each purpose (Cronbach's $\alpha = 0.70$ for T-DSUTCP and 0.87 for T-DSUTCT).

2) Part II. Attitude toward the Use of Computer Technology for Language Teaching

Previous studies suggest that teachers' attitude toward computer technology is strongly associated with their use of computer technology in the classroom (e.g., Lam, 2000; Mumtaz, 2000). L2 teachers' self-reported attitude toward the use of computer technology was measured by the Computer Attitude Scale for Language Teachers, or CASLT (Daud, 1995). The original CASLT consists of 21 items designed to measure EFL (English as a Foreign Language) teachers' attitude toward CALL (Cronbach's $\alpha = 0.72$). Given the context where the present study was conducted, the original CASLT was reduced to 18 items on a 5-point Likert-type scale (1 = Strongly disagree to 5 = Strongly agree) based on the feedback of the panel of experts and the former L2 teachers who reviewed the questionnaire. The score on the CASLT indicates "how friendly are the teachers toward CALL" (Daud, 1995, p.355). Higher scores indicate that L2 teachers are relatively more friendly toward the use of CALL technology (Cronbach's $\alpha = 0.90$).

3) Part III. Computer Literacy Skills

The findings of previous studies show that technology education for L2 teachers serves to improve teachers' competencies in using computer technology, which in turn tend to encourage teachers to have a positive attitude toward computer technology (Hegelheimer, 2006; Peters, 2006; Wetzel & Chisholm, 1998). Teachers' general competencies in computer technology are often considered as their computer literacy skills. Additionally, different researchers refer to computer literacy skills in different ways. Logan (1995), for example, views computer literacy as a continuum rather than a dichotomy, either computer literate or illiterate (pp.255-258). Warschauer (1999, 2002) considers the notion of computer literacy
in the context of L2 education, proposing electronic literacy, which consists of 4 relevant literacies: computer literacy, information literacy, multimedia literacy, and computer-mediated communication literacy. In light of both perspectives, the Computer–Email–Web (CEW) scale (Bunz, 2004) was adapted to measure L2 teachers' general computer literacy skills. The original CEW scale was designed to measure 4 constructs (Computer fluency, Email fluency, Web navigation, and Web editing) in the ICT environment and consists of 21 items (Cronbach's α = 0.72, 0.75, 0.64, and 0.79, respectively). The adapted CEW scale for this study consisted of 22 items on a 5-point Likert-type scale (1 = not at all to 5 = very well). The summed score was used as a composite measure of L2 teachers' general computer skills. Higher scores indicate that L2 teachers know more about using computers and ICT in general (Cronbach's α = 0.89).

4) Part IV. Focal Question Predictor: Prior Experience of Computer Technology Education

The question predictor of focal interest (i.e., L2 teachers' prior experience of technology education) was measured in Part IV through a series of questions. The questions were about different types of technology education during either the pre- or in-service period. An array of research studies indicate that teachers' technology education experience is related to their use of computer technology in the classroom (Hernández-Ramos, 2005; Lam, 2000; Mumtaz, 2000). Taking Beatty's (2003) definition of teachers' training experience within the framework of a CALL model, teachers' prior experience of computer technology education refers to the formal technology education that they "received from both academic institutions (i.e., teacher colleges and universities) and [technology] training in school placements" (p.138).

The same format of a set of 5 questions was used for 6 different cases of L2 teachers' prior experience of technology education during the pre- and in-service periods (a total of 30 items), asking (1) whether they have taken quarter/semester-long courses specifically designed for CALL during the pre- and in-service periods; (2) whether they have taken quarter/semester-long courses about general instructional technology during the pre- and in-service periods; and (3) whether they have attended workshops about CALL or about instructional technology during the in-service period. Whether L2 teachers have taken any quarter/semester-long courses (either CALL or instructional technology) during the pre-service period was measured as a dichotomy (Yes or No), followed by asking about the 'total number of courses', 'approximate total credit hours of courses taken', and 'L2 teacher's overall evaluation of the courses taken on a scale of not useful, somewhat useful,
useful, and very useful.' For the courses and workshops attended during the in-service period, the format of the questions was identical except for replacing 'pre-service' and 'courses' with 'in-service' and 'workshops', respectively.

Based on the responses of the participants, L2 teachers' prior experience of technology education was measured by the total number of hours that each teacher devoted to courses and workshops during his/her pre- and in-service period. For taking quarter/semester-long courses, teachers' response to total credit hours of courses taken was multiplied by 10 (which is usually the number of weeks in an academic quarter). The total number of hours devoted to courses was added to the total number of hours devoted to workshops (CALL or instructional technology) during the in-service period.

Research on the assessment of CALL teacher education points out that teachers' perceived effectiveness of CALL technology education is crucial to improving the quality of future CALL technology education, thereby contributing to teachers' integration of technology into the classroom (Kessler, 2006). Thus, teachers were asked to evaluate their prior experience for each technology education on a scale of 'not useful', 'somewhat useful', 'useful', and 'very useful'. For the overall evaluation of teachers' prior experience of technology education, the mean value of their responses to the evaluation of each experience was calculated through coding 'not useful = 1', 'somewhat useful = 2', 'useful = 3', and 'very useful = 4'. Based on this mean value, the overall evaluation of teachers' prior experience of technology education was reassigned correspondingly as 'not useful', 'somewhat useful', 'useful', and 'very useful'.

5) Part V. Demographic Variables and Technology Environment in the School

Part V was designed to measure teachers' demographic variables (e.g., gender, age, years of teaching, and years of using computers) and workplace information (e.g., the availability of computers in the classroom and the average number of students in class) as additional control variables. Previous studies examined the issue of gender related to the use of computer technology and attitude toward computer technology (Prinsen, Volman, & Terwel, 2007). In addition, researchers reported that teachers' age and years of teaching experience were related to their use of computer technology in the classroom (Mathews & Guarino, 2000; Merskill et al., 2002). Teachers' prior experience of computing was also found to be relevant to their use of computer technology in the classroom (Rakes, Fields, & Cox, 2006). The question, 'how long have you used a computer for your personal purpose?' was asked regarding teachers' years of computing. Teachers' workload was also considered as a factor that hinders their use of computer technology in the classroom.
(Lam, 2000). Teachers' workload was operationally defined as the number of classes they taught per week and the average number of students in their classes during the academic year of 2006~2007. The availability of computer technology in the classroom was considered as another factor relevant to teachers' use of computer technology in the classroom (Norris, Sullivan, Poirot, & Soloway, 2003). For the availability of computers in the classroom, the number of computers in the classroom was asked.

4. Analysis

To examine the relationship between L2 teachers' prior experience of technology education and their use of computer technology in the classroom, I performed two different analyses depending on the types of the outcome variables. For the binary outcome variable (i.e., less than once a week vs. at least once a week for L2 teachers' use of computer technology for delivering instruction), I estimated a series of logistic regression models for the relationship between L2 teachers' prior experience of technology education and their use of computer technology for delivering instruction (Hosmer & Lemeshow, 2000; O'Connell, 2006). For two continuous outcome variables (T-DSUTCP and T-DSUTCT), I estimated a series of Ordinary Least Square (OLS) regression models (Cohen, Cohen, West, & Aiken, 2003; Dunkel & Zubovic, 1992; Zhang, 1992).

In both logistic and OLS regression analyses, I followed a regression model building strategy proposed by Singer and Willett (2003). I began by fitting a regression model with the focal question predictor. Then, I specified and fitted a series of regression models by including a set of control predictors in the model: first, L2 teachers' overall evaluation, attitude toward computer technology, and computer literacy skills were entered into the model; next, teachers' age, gender, years of teaching, and years of computer use were entered; and then, variables about teachers' workload (the number of classes taught per week and the average number of students in their classes) and workplace condition (the number of computers in the classroom) were entered.

In each model, if the parameter estimates of the predictors were not statistically significant at the level of 0.10, they were not included in the next step of model building. In excluding predictors whose parameter estimates were not statistically significant, the GLH (General Linear Hypothesis) test was conducted for a hypothesis of whether the joint effect of non-significant predictors (i.e., estimate regression coefficients of all the excluded predictors) was equal to zero at the level of 0.05. In the process of estimating logistic regression models, scalar model fit indices and Hosmer-Lemeshow test statistics (Hosmer & Lemeshow, 2000, p.147-156) were examined; and the change in the Pearson
chi-square statistics and in deviance were also examined for atypical observations. In the process of estimating OLS regression models, tolerance statistics were examined for multicollinearity; and Cook’s D and Hat statistics were also examined for atypical observations. I conducted exploratory data analyses and fitted all of the regression models using a statistical software package, STATA (Intercooled version 9.0).

IV. RESULTS

Before addressing the relationship between L2 teachers’ previous technology education experience and their use of computer technology, univariate statistics is briefly described. Table 1 presents sample means, standard deviation, and range for the outcome variables, the focal question predictor, and the control variables. As shown in Table 1, a majority of L2 teachers (95%) had at least one computer with high-speed Internet access in their classroom. All of the teachers responded that they had a computer lab in the school where high-speed Internet was available. Less than half of the participating teachers (40.5%) used computer technology at least once a week for delivering their instruction. In addition, the scores on both T–DSUTCP and T–DSUTCT varied from 4 to 14 (M = 7.27, SD = 2.11) and from 6 to 30 (M = 13.91, SD = 4.55), respectively. There was also considerable variation in the amount of time that teachers devoted to technology education during the pre-and in-service periods, as indexed by a standard deviation of about 57. Average hours that the teachers devoted to technology education was about 60 hours, which is equivalent to taking a 3 credit-hour course for two academic quarters. Overall, the teachers showed moderate attitude toward computer technology (M = 69.32, SD = 10.73) and knew the basics of using computer technology (M = 95.43, SD = 13.29).

1. L2 Teachers’ Use of Computer Technology for Delivering Instruction (T–UTDI)

To examine the unique influence of teachers’ technology education on their use of computer technology for delivering instruction in the classroom, Table 2 presents the estimates of logistic regression models. It provides odds ratios (ORs), standard errors, and the statistical significance based on the probability of Z scores.

Among the fitted models in Table 2, Model 4 (M4) is my best preferred model on the basis of the estimated parameters of the models, the comparison of the models in terms of model fit indices, the model parsimony, and the findings from previous research. In Model 4, the OR for hours of teachers’ technology education indicates that teachers with more
technology education experience were more likely to use computer technology for delivering instruction than were those with less technology education, holding the other variables in the model constant (OR = 1.055, p < 0.10). Specifically, the OR of 1.055 informs us that among the teachers using computer technology at least once a week for delivering instruction, the odds for teachers with 10 hours more of technology education is 1.055 times the odds for those with 10 hours less of technology education. In other words, having 10 hours more of technology education increases the odds of using computer technology at least once a week for delivering instruction by 5.5%.

Table 2 also shows that the content of technology education (i.e., substance and practicality of technology education) is a critical aspect to be considered for teachers' use of computer technology for delivering instruction together with the amount of technology education. The OR for teachers' overall evaluation indicates that teachers who evaluated their previous technology education more positively were more likely to use computer technology for delivering instruction than were those who evaluated their previous education as 'not useful.' Among the teachers using computer technology at least once a week, for example, the OR for teachers whose overall evaluation of their technology education was 'useful' shows that the odds for teachers who evaluated their prior technology education as useful were 9.88 times the odds for those who evaluated it as 'not useful' (OR = 9.880, p < 0.10 in M4). In addition, teachers having positive attitude toward computer technology were more likely to use computer technology more frequently for delivering instruction (OR = 1.043, p < 0.05 in M4); and older teachers tended to use computer technology more frequently for delivering instruction than did younger teachers (OR = 1.044, p < 0.01 in M4).
### Table 1: Univariate Descriptive Statistics on the Outcome Variables, the Question Predictor, and the Control Variables (n = 200)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean or %</th>
<th>SD</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Outcome variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher-Use of Technology for Delivering Instruction (T-UTDD) (%): At least once per week</td>
<td>40.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher-directed Student Use of Technology to Create Products (T-DSUTCP)</td>
<td>7.27</td>
<td>2.11</td>
<td>4-14</td>
</tr>
<tr>
<td>Teacher-directed Student Use of Technology during Class Time (T-DSUTCT)</td>
<td>13.91</td>
<td>4.55</td>
<td>6-30</td>
</tr>
<tr>
<td><strong>Question predictor</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hours of L2 teachers’ technology education</td>
<td>61.13</td>
<td>56.89</td>
<td>1-255</td>
</tr>
<tr>
<td><strong>Control variables</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall evaluation of technology education (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not useful</td>
<td>8.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somewhat useful</td>
<td>46.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Useful</td>
<td>34.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very useful</td>
<td>11.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward computer technology</td>
<td>69.32</td>
<td>10.73</td>
<td>25-90</td>
</tr>
<tr>
<td>Computer literacy skills</td>
<td>95.43</td>
<td>13.29</td>
<td>30-110</td>
</tr>
<tr>
<td>Age</td>
<td>41.34</td>
<td>11.66</td>
<td>22-65</td>
</tr>
<tr>
<td>Gender ( %): Male</td>
<td>14.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of classes to teach per week</td>
<td>22.50</td>
<td>7.61</td>
<td>2-30</td>
</tr>
<tr>
<td>Average number of students in class</td>
<td>22.04</td>
<td>6.05</td>
<td>3-45</td>
</tr>
<tr>
<td>Years of computer use</td>
<td>14.09</td>
<td>5.22</td>
<td>0-28</td>
</tr>
<tr>
<td>Years of teaching</td>
<td>14.91</td>
<td>10.05</td>
<td>1-35</td>
</tr>
<tr>
<td>Computer in the classroom (%): Yes</td>
<td>99.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of computers in the classroom</td>
<td>2.96</td>
<td>2.96</td>
<td>0-20</td>
</tr>
<tr>
<td>High-speed Internet in the classroom (%): Yes</td>
<td>95.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer lab in the school (%): Yes</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High-speed Internet in the computer lab (%): Yes</td>
<td>100.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: SD = Standard Deviation
Table 2: Results of Fitting a Series of Logistic Regression Models Describing L2 Teachers’ Use of Computer Technology at Least Once a Week for Delivering Instruction in Relation to Their Prior Technology Education Experience (n = 200)

<table>
<thead>
<tr>
<th>Fitted logistic regression model</th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours of teachers’ technology</td>
<td>1.092**</td>
<td>1.083**</td>
<td>1.060</td>
<td>1.055</td>
</tr>
<tr>
<td>education (10 hours)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Overall evaluation (Somewhat useful)</td>
<td>10.187</td>
<td>10.710</td>
<td>11.430</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(10.81)</td>
<td>(12.76)</td>
<td>(13.52)</td>
<td></td>
</tr>
<tr>
<td>Overall evaluation (Useful)</td>
<td>13.071**</td>
<td>9.248</td>
<td>9.880</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(13.96)</td>
<td>(10.95)</td>
<td>(11.65)</td>
<td></td>
</tr>
<tr>
<td>Overall evaluation (Very useful)</td>
<td>11.030</td>
<td>8.786</td>
<td>8.583</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(12.38)</td>
<td>(10.90)</td>
<td>(10.57)</td>
<td></td>
</tr>
<tr>
<td>Attitude toward computer technology</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.035</td>
<td>1.038</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer literacy skills</td>
<td>(0.02)</td>
<td>(0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.034**</td>
<td>1.044**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>(0.03)</td>
<td>(0.02)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.560**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.74)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of computer use</td>
<td>(0.04)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.015**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Years of teaching</td>
<td>(0.04)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.000**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of classes taught per week</td>
<td>(0.03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.023**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average number of students in class</td>
<td>(0.03)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of computers in the classroom</td>
<td>1.107</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.06)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2LL</td>
<td>258.52</td>
<td>247.93</td>
<td>227.01</td>
<td>228.73</td>
</tr>
<tr>
<td>(R^2)</td>
<td>4.25%</td>
<td>8.17%</td>
<td>15.92%</td>
<td>15.28%</td>
</tr>
<tr>
<td>Likelihood-Ratio (\chi^2(df))</td>
<td>11.48***</td>
<td>22.07***</td>
<td>42.98***</td>
<td>41.26***</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(4)</td>
<td>(13)</td>
<td>(8)</td>
</tr>
<tr>
<td>AIC</td>
<td>262.52</td>
<td>257.93</td>
<td>255.01</td>
<td>246.73</td>
</tr>
<tr>
<td>Nagelkerke (R^2)</td>
<td>7.5%</td>
<td>14.1%</td>
<td>26.1%</td>
<td>25.2%</td>
</tr>
</tbody>
</table>

Note: 1. Cell entries are odds ratios and standard errors.
2. Overall evaluation = Teachers’ overall evaluation of their technology education; the reference category for overall evaluation is ‘Not useful’.
3. -2LL = -2 Log-Likelihood; -2LL for the null model (i.e., the intercept-only model) = 269.99
4. \(R^2\) is pseudo \(R^2\); AIC = AIC x (n)
5. \(\chi^2\) is significant at \(p<0.10\), \(\chi^2\) is significant at \(p<0.05\), **\(\chi^2\) is significant at \(p<0.01\), ***\(\chi^2\) is significant at \(p<0.001\), ns = non-significant.

To display clearly the relationship between hours of teachers’ technology education and their use of computer technology at least once a week for delivering instruction, Figure 1...
presents the fitted probability of teachers' using computer technology at least once a week for delivering instruction by the level of their overall evaluation of their technology education (useful vs. not useful) from Model 4 in Table 2, controlling for the other variables in the model. As demonstrated by both lines, L2 teachers who devoted more time to technology education were more likely to use computer technology at least once a week for delivering instruction. The vertical difference between the two lines indicates that teachers who were satisfied with the contents of the technology education were more likely to use computer technology for delivering instruction than were those who were not satisfied.

![Figure 1](image)

**Figure 1** Fitted Probability of Using Computer Technology at Least Once a Week for Delivering Instruction in Relation to the Amount of Teachers' Technology Education

In addition, what is worth noting in Figure 1 is the amount of time for technology education in relation to the probability of using computer technology at least once a week for delivering instruction. For teachers who were not satisfied with their technology education (i.e., not useful), the fitted probability does not exceed 0.2 even if they had much more technology education, that is 250 hours (greater than two standard deviations of the mean) which is equivalent to taking a 3 credit-hour course for about 8 academic quarters in the teacher education program. While teachers who were satisfied with their technology education were more likely to use computer technology than were those who were not satisfied, they still needed roughly 150 hours of technology education to exceed, on average, the probability of 0.5 for using computer technology at least once a week for delivering instruction (one hundred fifty hours are equivalent to taking a 3 credit-hour course for about 5 quarters in the teacher education program.) These findings indicate that
it is imperative to consider both quantity and quality of technology education for L2 teachers in association with their use of computer technology in the classroom.

2. Teacher-Directed Student Use of Technology to Create Products (T-DSUTCP)

To examine the unique influence of teachers' technology education on T-DSUTCP, estimates from the fitted OLS regression models for teachers' technology education are presented in Table 3. It is clear from Table 3 that teachers with more technology education, on average, use computer technology more for T-DSUTCP ($\beta = 0.05$, $p < 0.05$ in M4). This indicates that even after taking into account teachers' attitude toward computer technology and computer literacy skills, the relationship between teachers' technology education and T-DSUTCP remained positive. Table 3 also shows that teachers with positive attitude toward computer technology used computer technology, on average, more for T-DSUTCP ($\beta = 0.05$, $p < 0.01$ in M4), holding the other variables in the model constant. The positive relationship is also found for teachers' computer literacy skills: teachers who had better computer literacy skills used computer technology more for T-DSUTCP ($\beta = 0.03$, $p < 0.01$ in M4).

To illustrate the magnitude and direction of the effect of teachers' technology education on T-DSUTCP, Figure 2 presents the fitted T-DSUTCP scores from Model 4 in Table 3 for prototypical teachers with three different levels of attitude toward computer technology: Positive attitude (one standard deviation above the mean), moderate attitude (mean), and negative attitude (one standard deviation below the mean). Figure 2 clearly displays that teachers' use of computer technology for T-DSUTCP had a positive association with their technology education and with their attitude toward computer technology. Controlling for teacher's computer literacy skills, those with more technology education used computer technology, on average, more frequently for T-DSUTCP at every level of teachers' attitude toward computer technology. Teachers' attitude toward computer technology is also positively associated with T-DSUTCP, which is indicated by the vertical difference between the fitted lines.

In the previous section, the findings from teachers' use of computer technology at least once a week for delivering instruction suggest that roughly 150 hours of useful technology education are needed to exceed the probability of 0.5 for using computer technology at least once a week for delivering instruction (see Figure 1). Figure 2 shows that 150 hours of technology education increase the T-DSUTCP score of teachers with even negative attitude toward computer technology nearly to the average score of 7.27.
### Table 3: Results of Fitting a Series of Multiple Regression Models Describing the Relationship between Teachers’ Prior Technology Education and T-DSUTCP (n = 200)

<table>
<thead>
<tr>
<th></th>
<th>M1</th>
<th>M2</th>
<th>M3</th>
<th>M4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>6.69***</td>
<td>6.27***</td>
<td>-0.84**</td>
<td>0.65**</td>
</tr>
<tr>
<td></td>
<td>(0.21)</td>
<td>(0.51)</td>
<td>(1.81)</td>
<td>(1.14)</td>
</tr>
<tr>
<td>Hours of teachers’ technology education (10 hours)</td>
<td>0.10***</td>
<td>0.09**</td>
<td>0.05*</td>
<td>0.05*</td>
</tr>
<tr>
<td></td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>Overall evaluation (Somewhat useful)</td>
<td>0.34**</td>
<td>-0.19**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.54)</td>
<td>(0.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall evaluation (Useful)</td>
<td>0.77**</td>
<td>-0.16**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.56)</td>
<td>(0.57)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall evaluation (Very useful)</td>
<td>0.33</td>
<td>-0.58**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.65)</td>
<td>(0.66)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude toward computer technology</td>
<td></td>
<td></td>
<td>0.05**</td>
<td>0.05**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Computer literacy skills</td>
<td></td>
<td></td>
<td>0.04**</td>
<td>0.03**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.01)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>0.01***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td>-0.02**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.41)</td>
<td></td>
</tr>
<tr>
<td>Years of computer use</td>
<td></td>
<td></td>
<td>-0.03**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Years of teaching</td>
<td></td>
<td></td>
<td>0.02**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Number of classes taught per week</td>
<td></td>
<td></td>
<td>0.00**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.02)</td>
<td></td>
</tr>
<tr>
<td>Average number of students in class</td>
<td></td>
<td></td>
<td>0.02**</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.03)</td>
<td></td>
</tr>
<tr>
<td>Number of computers in the classroom</td>
<td></td>
<td></td>
<td>0.03***</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.05)</td>
<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>7.08%</td>
<td>8.37%</td>
<td>21.15%</td>
<td>19.25%</td>
</tr>
<tr>
<td>F</td>
<td>15.09***</td>
<td>4.45***</td>
<td>3.84***</td>
<td>15.57***</td>
</tr>
<tr>
<td>($df$)</td>
<td>(1,198)</td>
<td>(4,195)</td>
<td>(13,186)</td>
<td>(3,196)</td>
</tr>
<tr>
<td>RMSE</td>
<td>2.04</td>
<td>2.04</td>
<td>1.94</td>
<td>1.91</td>
</tr>
</tbody>
</table>

**Note:**
1. Cell entries are estimated regression coefficients and standard errors.
2. Overall evaluation = Teachers’ overall evaluation of their technology education.
3. The reference category of ‘Overall evaluation’ is ‘not useful’.
4. *p < 0.10, **p < 0.05, ***p < 0.01, ns = non-significant.
5. RMSE = Root Mean Square Error.
3. Teacher-Directed Student Use of Computer Technology during Class Time (T-DSUTCT)

Table 4 presents the results of a series of OLS regression models for looking into the influence of teachers' technology education on T-DSUTCT while taking into account the other predictive variables. It is apparent that teachers' use of computer technology for T-DSUTCT was positively associated with their technology education, controlling for the other predictive variables in the models. Each additional 10 hours of technology education increase teachers' T-DSUTCT score, on average, by 0.17, holding teachers' attitude toward computer technology and the number of computers in the classroom constant ($\beta = 0.17, p < 0.01$ in M4). In addition to teachers' technology education, teachers' attitude toward computer technology had positive influence on their use of computer technology for T-DSUTCT ($\beta = 0.14, p < 0.001$ in M4); and the number of computers in the classroom ($\beta = 0.48, p < 0.001$ in M4). Table 4 also shows that both teachers' attitude and the number of computers in the classroom explain the variation of T-DSUTCT more than do the other predictive variables ($R^2$ difference between M4 and M1 is 21.26%). This indicates that teachers' attitude and the computer availability in the classroom should be considered as important predictive variables concerning teachers' use of computer technology for T-DSUTCT.
In order to illustrate the extent of the influence of teachers' technology education on their use of computer technology for T-DSUTCT, Figure 3 presents fitted T-DSUTCT...
scores from Model 4 in Table 4 for prototypical teachers with different numbers of computers in the classroom: those with many computers in the classroom (two standard deviations above the mean, namely, 9 computers) and with few computers in the classroom (the mean, i.e., 3 computers). On average, teachers with more technology education tended to use computer technology for T-DSUTCT more frequently even after taking into account teachers’ attitude toward computer technology and the number of computers in the classroom. In addition, teachers with many computers in the classroom used computer technology more for T-DSUTCT than did those with few computers, as indicated by the vertical difference between the lines. Given the finding from teachers’ use of computer technology at least once a week for delivering instruction (i.e., 150 hours for exceeding the probability of 0.5), 150 hours of technology education increase the estimated T-DSUTCT scores of teachers with many computers to about 18.50, which is roughly equivalent to one standard deviation above the mean.

[V. DISCUSSION]

The purpose of this study was to examine the relationship between L2 teachers’ prior technology education experience and their use of computer technology in the classroom. Although researchers have studied L2 teachers’ technology integration in relation to their prior technology education, they have not found a definitive answer to the question of
whether L2 teachers’ technology education fosters their use of computer technology in the classroom. The present study addressed this lacuna in the literature by examining the relationship between secondary public school L2 teachers’ use of computer technology for different instructional purposes and their prior technology education experience during the pre- and in-service periods.

The findings of this study are in two folds. First, L2 teachers’ technology education contributes to fostering teachers’ use of computer technology in the classroom, even after taking into account their individual and classroom characteristics. L2 teachers with more technology education during the pre- and in-service periods were likely to use computer technology more frequently for the purpose of delivering their instruction. For the purpose of using computer technology for engaging students in creating products, teachers who spent more time on technology education also tended to use computer technology more frequently. Furthermore, teachers who used computer technology more frequently for students’ own use of computer technology during class time tended to have more technology education experience than did their counterparts. These findings are consistent with previous studies that identify L2 teachers’ lack of training as a critical factor that stifles their use of computer technology in the classroom (Lam, 2000; Peters, 2006).

Second, the findings of this study provide clear evidence that L2 teachers need multiple opportunities of technology education with substantive and practical contents in order to foster teachers’ use of computer technology in the classroom. In order to become more likely to use computer technology (i.e., at least once a week) for delivering instruction, teachers appear to need at least 150 hours of technology education, which is equivalent to taking a 3 credit-hour technology course for 5 academic quarters in the teacher education program. In addition, teachers not satisfied with their prior technology education tend to be less likely to use computer technology for delivering instruction. While teachers’ overall evaluation of their previous technology education did not have much explanatory power to account for the variation of teachers’ use of computer technology for students’ engagement in creating products and students’ own use of computer technology during class time, the amount of teachers’ technology education remained positively related to teachers’ use of computer technology for both instructional purposes. These findings uphold the salience of both the quantity and quality of L2 teachers’ technology education, suggesting that quantitative increases in teachers’ technology education that are not coupled with appropriate contents meeting teachers’ needs do not necessary guarantee the augmentation of teachers’ use of computer technology in the classroom (Debski, 2006; Desjardins & Peters, 2007; Egbert, 2006; Luke & Britten, 2007).
Several additional findings of this study are also worth mentioning. Along with teachers' technology education, teachers' attitude toward computer technology and computer literacy skills played a critical role in teachers' use of computer technology in the classroom. Teachers' attitude toward computer technology was a pivotal predictor with regard to their use of computer technology for the three instructional purposes; and teachers' computer literacy skills served as a significant predictor for delivering instruction and students' engagement in creating products holding teachers' individual and classroom characteristics constant. These findings provide empirical support for previous studies that accentuate the imperative for teachers' positive attitude toward computer technology and computer literacy skills in relation to teachers' use of technology in the classroom (Hegelheimer, 2006; Kassen & Higgins, 1997; Peters, 2006).

Moreover, teachers' age was a notable predictor only for teachers' use of computer technology for delivering instruction. That is, older teachers were more likely to use computer technology for delivering instruction than were their younger counterparts, controlling for teachers' individual and classroom characteristics. This finding is also consistent with previous research into teachers' use of computer technology (Mathews & Guarino, 2000; Meskill et al., 2002). It is interesting to see that the data of this study show that younger teachers had better computer literacy skills than their older counterparts, which is counterintuitive to what younger teachers would be expected to do with computer technology in the classroom. Furthermore, our common sense suggests that younger teachers are more likely from "digital natives" rather than "digital immigrants" (Prensky, 2001), thereby being habituated to using computer technology in their daily lives. While we can conjecture about this finding, one convincing explanation is the postulate proposed by Meskill and her colleagues (2002) that teachers' technology education and computer literacy skills may not be sufficient for "the needed conceptual development that leads to the kinds of ease and repertoire characteristics of expert users [teachers both having more teaching experience and using computer technology]" (p. 54).

In light of the findings of this study, L2 researchers, teacher educators, and administrators need to be aware of coupling the integration of CALL technology into L2 teacher education with L2 teachers' integration of technology into the classroom. As suggested by L2 teachers who participated in this study, it is imperative that L2 teacher educators and administrators consider the importance of both the quantity and quality of technology education for L2 teachers. Although 150 hours cannot be an absolute criterion to make policy on technology education in the teacher education program, that number at least provides a useful guideline for planning CALL teacher education for both pre- and in-service teachers. Rather than offering short-term technology education for L2 teachers
(e.g., just one course or workshop), teachers' technology education needs to be offered on a continuum. As Desjardings and Peters (2007) point out, "The 45-hour course [roughly equivalent to taking a 4 credit-hour course for one academic quarter] lets pre-service teachers see the importance of using technology integration in the classroom. [however] Just like a language is not learned in a 45-hour course, technological skills need to be learned over times" (p. 19).

It is also important not to limit technology education only to pre-service teachers in teacher education programs by offering only one (or two) technology course(s) throughout the program, but to continuously provide technology education for L2 teachers beyond teacher education programs. To this end, it is imperative for L2 teacher educators and administrators to be aware of helping both future and current L2 teachers to continuously acquire knowledge on effectively using CALL technology, to be aware of alternative teaching approaches by using CALL technology, and to build confidence and necessary skills to apply the rapidly-changing CALL technology to their specific teaching plans. Within the general framework of "the professional development of teachers' technology integration" (Lawless & Pellegrino, 2007) and of "communities of enquiry" (Cassidy et al., 2008), we can achieve both continuous technology education and quality of technology education by taking several operational approaches. These include closing the gap between formal technology education and the actual classroom (Debski, 2006; Egbert et al., 2006), encouraging community of practice among teachers regarding CALL technology integration (Hanson-Smith, 2006; Hoven, 2007), orchestrating the collaboration of both pre- and in-service teachers (Meskill, Anthony, Hilliker-VanStrander, Tseng, & You, 2006b), and supporting teachers' continuous self-learning (Robb, 2006; Szendeffy, 2005).

Although the findings of this study indicate the value of increasing the quantity and quality of CALL technology education for L2 teachers in relation to teachers' use of computer technology in the classroom, several limitations must be considered when interpreting these findings. First, the nature of the data is correlational, which indicates that the data were not obtained based on the experimental research design. Thus, we are limited to make a causal inference regarding the effect of teachers' technology education on their use of computer technology in the classroom. Second, the present study does not consider all of the factors relevant to teachers' use of computer technology in the classroom. While it considers several contextual factors (e.g., the number of computers in the classroom and the average number of students in class), still many others are omitted - i.e., both "material and non-material conditions" (Pelgrum, 2001, p.173), such as the condition of computers (e.g., functioning well or not), the availability of application
resources for teaching, and teachers’ general climate regarding the use of computer technology in the school. Thus, we are limited to infer how changes in these factors may influence teachers’ use of computer technology.

Finally, the validity of the measure of L2 teachers’ use of computer technology could be a concern because this study adapted the instruments originally designed to measure general subject teachers’ use of computer technology. Since the instruments cover teachers’ use of technology in a generic sense, it may be that they did not measure L2 teachers’ specific use of computer technology for language teaching purposes. Although this is possible, it is important to note that currently, no instrument is available that is specifically designed to measure L2 teachers’ use of computer technology; furthermore, general subject teachers’ use of computer technology in the classroom overlaps L2 teachers’ use of computer technology in the classroom (Meskill et al., 2006a; O’Dwyer et al., 2005).

VI. CONCLUSION

In light of the limitations and results of this study, future work needs to focus on L2 teachers’ specific use of CALL technology in the classroom. In particular, closer examination needs to be given to how and which CALL technology L2 teachers use in the classroom, and for what pedagogical purpose they use it. Knowledge on these can help to combine CALL technology education for L2 teachers with teachers’ integration of CALL technology into the classroom. This knowledge can also contribute to not only developing an instrument that measures L2 teachers’ use of CALL technology in the classroom but also designing CALL technology courses that reflect L2 teachers’ needs.

In addition, future research needs to examine contextual factors in relation to L2 teachers’ integration of technology into the classroom. Of particular interest is the influence of non-material factors (e.g., teachers’ general atmosphere regarding the use of computer technology in the school) on teachers’ use of computer technology in the classroom. In fact, research in the field of educational technology suggests that teachers’ workplace conditions (e.g., their above average computer literacy skills and frequent use of computer technology in the school level) is related to teachers’ use of computer technology in the classroom (Becker, 2000). To further expand this finding to the L2 teaching context will serve to consolidate the findings from the present study and previous research regarding the importance of CALL technology education for L2 teachers’ integration of technology into the classroom.
To conclude, the present study contributes to extending previous research by providing further support for the importance of CALL technology education for L2 teachers' use of computer technology in the classroom. L2 teachers with more technology education experience were likely to use computer technology more frequently for delivering instruction. They also tended to use computer technology more frequently to engage students in creating products and encourage students' own use of computer technology during class time. Given the ultimate goal of CALL teacher education to foster teachers' use of computer technology for L2 teaching and learning, L2 teacher education programs need to offer continuous and substantial CALL teacher education for both pre- and in-service teachers.

REFERENCES


John Wiley & Sons, Inc.


Pelgrum, W. J. (2001). Obstacles to the integration of ICT in education: Results from a


Wong, L., & Benson, P. (2006). In-service CALL education: What happens after the course is over? In P. Hubbard & M. Levy (Eds.), *Teacher education in CALL* (pp. 251–264).
APPENDIX

Items on Part I (Outcome variable: L2 teachers’ use of computer technology in the classroom), Part II (Attitude toward the use of computer technology for language teaching) and Part III (Computer literacy skills).

Part I: L2 teachers’ use of computer technology in the classroom

a) Teacher–Use of Technology for Delivering Instruction (T-UTDI): Responses are made on a scale of ‘never’, ‘less than once per week’, ‘once per week’, ‘3 times a week’ ‘daily.’

1) How often do you use a computer to deliver instruction in your class?

b) Teacher–Directed Student Use of Technology to Create Products (T-DSUTCP):
Responses are made on a scale of 1 = never, 2 = once or twice a year, 3 = several times a year, 4 = several times month, 5 = several times a week.

2) How often did you ask students to produce multimedia projects using computer technology?
3) How often did you ask student to produce web-based publications (e.g., webpages and websites) using computer technology?
4) How often did you ask students to produce pictures using computer technology?
5) How often did you ask students to produce videos using computer technology?

(c) Teacher–Directed Student Use of Technology during Class Time (T-DSUTCT):
Responses are made on a scale of 1 = never, 2 = once or twice a year, 3 = several times a year, 4 = several times month, and 5 = several times a week.

6) During class time, how often did students work individually using computers last year?
7) During class time, how often did students work groups using computers last year?
8) During class time, how often did students do research using the Internet last year?
9) During class time, how often did students use computers to solve problems last year?
10) During class time, how often did students make a presentation to the class using a computer last year?
11) During class time, how often did students use a computer for writing last year?

Part II: Attitude toward the use of computer technology for language teaching

Responses are made on a scale of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. * Reverse scored

1) In the language classroom computers are as important to language learners as textbooks.
2) A computer training program should be compulsory for every language teacher.
3) Computers will increase the amount of teacher-student interaction in the classroom.
4) I look forward to a time when computers are widely used in language teaching.
5) Language teachers can manage without computers, so computers are not really necessary. *
6) The use of computers can help improve language learners’ communication skills.
7) The use of computers brings more advantages than disadvantages to language teachers.
8) Using computers in the language classroom will not improve students’ attitudes toward language learning. *
9) Teaching language with the aid of computers would make learning easier for language learners.
10) Language teaching is better without the use of computers. *
11) Computers will increase the amount of student-student interaction in the class.
12) The use of computers helps to motivate the students to learn.
13) Students are more active in computer-aid language lessons.
14) Using a computer makes language lessons more interesting to the students.
15) Computers can be used as a private tutor.
16) Computers have little application to language teaching. *
17) The use of computers is unrelated to the needs of the school. *
18) Teaching language with the aid of computers makes teaching easier.
Part III: Computer literacy skills

Responses are made on a scale of 1 = not at all, 2 = not so well, 3 = okay, 4 = well, 5 = very well.

1) I can begin a new document in a word processing software.
2) I can save a working document in word processing software.
3) I can print a document.
4) I can create slides in presentation software (e.g., Powerpoint).
5) I can open a Web address directly.
6) I can use search engines such as Yahoo or Google.
7) I can use “save as” when appropriate.
8) I can save text contents off Web pages to a disk.
9) I can save images off Web pages to a disk.
10) I can identify the host server from the Web address.
11) I can send an email message.
12) I can delete email messages that I read.
13) I can use the “reply” and forward” features in email.
14) I can attach a file to an email message.
15) I can open a file attached to an email.
16) I can open a previously saved file from any drive/directory.
17) I can use a browser such as Internet Explorer or Fire Fox to navigate the World Wide Web.
18) I can edit bookmarks in a Web browser.
19) I can use “backward” and “forward” to move between web pages.
20) I can create Website.
21) I can download and upload files in a Website.
22) I can do video-conferencing through online by using a webcam.

Key words: CALL teacher education, CALL technology integration
Applicable levels: secondary education, tertiary education

Author: Kwang Hee Hong (The Ohio State University); hong.143@buckeyemail.osu.edu

Received: May 15, 2009
Reviewed: July 30, 2009

This paper presents the results of the study on how students evaluate video conferencing as a language learning tool. Keeping up with the current trend of learning English through Computer Mediated Communication (CMC), the researcher investigated how students evaluated the effect of a video conferencing tool on promoting speaking fluency. A total of 138 cyber students participated in the study which employed student surveys, telephone interviews, and document analysis. The research results showed that an overwhelming number of students thought that video conferencing could be an alternative to face-to-face interaction with native English speakers, by referencing "no restrictions on time and space," "utilizing text-chat function," and "involving less psychological anxiety" as major advantages of video conferencing. Students also favored video conferencing over audio conferencing since it allows students to utilize paralanguage such as gestures or facial expressions. The research results indicate that online video conferencing will be an effective tool to promote English learners’ speaking fluency in Korea, especially by compensating for the lack of native English teachers' input in the Korean educational system.

I. INTRODUCTION

The utmost concern of language educators in cyber education is how to overcome the major limitation of distant education, a lack of bi-directional interaction. Although a chance to interact in a target language is a vital component in foreign language education,
this component is hardly achievable in cyber education. To make up for this lack of direct interaction in English education, the researcher's school has used the new online English program, SpeakENG, since 2007, which combines both an asynchronous online English program and a synchronous video conversation class.

SpeakENG is an online English speaking program combining video clip materials with the video conferencing tool Skype. This program is a revised version of Dr. Frank Otto's online English learning program called Ellis developed at Brigham Young University. The program developer added the feature of video conferencing to Ellis, thus creating the new online English program called SpeakENG. Based on the sequence of "Watch-Learn-Practice-Perform-1:1 Live Video Session," students are supposed to learn live English from digital audio and video clips, practice language input through voice recording and role-play activities, and have communication with native English speakers through video conferencing to practice their learned expressions.

According to Jung and Cheon (2007), students' responses to this program were highly positive in that it satisfied students' needs for both acquiring authentic language input and practicing it with native speakers in real time. Above of all, in the study, 76% of students selected the chance to speak with the native speakers through video conferencing as the best feature of the SpeakENG program. Having observed students' enthusiastic responses to the feature of video conferencing with native speakers, the researcher wanted to further investigate how students evaluate video conferencing as a language learning tool. Can online video conferencing be a replacement for the face-to-face interaction in language classrooms? What is the effect of video conferencing on promoting the learner's speaking ability? To answer these research questions, the researcher investigated the effectiveness of video conferencing as a language learning tool through student surveys and interviews.

In Korea, the demand for native English teachers is extremely high due to the lack of opportunities to use English in daily life and students' strong desire to have access to authentic English. In fact, in Jung & Cheon (2007), about 85% of students responded that they need an English class with the native English teachers to improve their English speaking skills. Thus, throughout this study, if the conclusion can be drawn that students perceive video conferencing as effective as the face-to-face interaction with native speakers, online video conferencing should be readily utilized in the field of English education in Korea. This new language learning tool will compensate for the shortage of native English teacher input in the Korean English education system. Recently, the number of private companies that offer online video or audio English conversation classes has been dramatically increasing (e.g. CarrotEnglish, Camedu, Talkbean), but few studies
have been conducted on the effectiveness of video conferencing implemented in regular language classrooms. With reference to this background, the researcher attempted to explore the possibilities and limitations of the new technology in English education, particularly video conferencing, as a way of seeking an effective language learning tool in the EFL context.

II. LITERATURE REVIEW

1. The Simultaneous Computer Mediated Communication (SCMC) in Language Education

The importance of interaction in L2 learning has been regarded as an integral part of communicative language learning (Gass, 2003; Hall, 1995; Kitade, 2000; Lantolf, 1994; Mitchell & Myles, 1998; Ohta, 1995; Swain & Lapkin, 1995). For language acquisition to take place, students must be provided with comprehensible input (Krashen, 1981, 1985), and they have to be able to interact with other learners with the target language. The negotiated meaning through their interaction produces comprehensible output (Swain, 1985), which becomes further comprehensible input to the learners. Although this cyclical language learning pattern is essential to language acquisition, the development of distant-leaning students’ speaking and interactional skills has largely been left to the students themselves with little academic support and no spontaneous feedback from the language class.

The urgency to find a solution to this problem has propelled the research on the possibilities of the SCMC. SCMC is categorized as written, oral, and oral-visual, but to date, most SCMC studies investigate written interaction, namely, text chats (e.g. Blake, 2000; Han, 2006; Kitade, 2000; Lee, 2004; Smith, 2003; Tudini, 2003, 2005). There are limited reports on oral interaction supported by audio conferencing tools (e.g. Blake, 2005; Hampel & Hauk, 2004; Levy & Kennedy, 2004) but fewer reports on the use of video conferencing tools (e.g. Buckett, Stringer, & Datta, 1999; Smith & Salam, 2000; Wang, 2004a, 2004b, 2007).

Overall, it has been reported that SCMC increases the amount of interaction in comparison with asynchronous CMC, and among the types of SCMC, voice conferencing is regarded as the most effective in promoting oral fluency. For example, Han (2004) compares the effect of text-chat, voice-chat, and video-conferencing chat in her research on how SCMC contributes to the development of students’ oral language proficiency,
interactive negotiation ability, and emotional status with three experiment groups. It is reported that all group members showed improvement in oral language proficiency and language accuracy; however, in terms of fluency, voice chat and video conferencing were the greatest contributing factors to improving oral fluency.

2. Video Conferencing as a Language Learning Tool

Video conferencing has emerged since the 1990s as an alternative to face-to-face interaction (Warschauer, 1996). However, its capacity to support high quality interaction has been diminished by the poor video and audio quality of the video conferencing facilities. From 2000 on, the rapid development in computer network technologies has enabled the emergence of video conferencing as a new language learning tool. In earlier research, Wang (2004b) presented a three year project called LEVERAGE (Learn from Video Extensive Real Atm Gigabit Experiment), which investigated the use of multimedia broadband technology to support language learning at a distance. This system supported oral-visual interaction among the three sites participating in the project, and learners from the three countries used LEVERAGE to assist one another in language learning. For example, a native student from Paris played the role of tutor to a learner of French from Madrid through video conferencing.

Wang (2004b) pointed out that LEVERAGE's multipoint video conferencing feature allows learners to see each other in a window and is regarded by the students as "the most important tool" and "the best of the sessions" (Ibanez & Duque, 1999, p. 2, cited from Wang, 2004b). Wang (2004b) confirms that video conferencing provides a very effective real-time learning environment in which language learners can not only interact orally with one another in the target language but also use paralinguistic cues such as facial expressions and body movements. Wang (2007) also analyses the effects of video conferencing using NetMeeting on teaching Chinese with five students who interacted with the researcher through video conferencing. The author argued that the method of video conferencing is very effective in the improvement of the target language and in bringing authenticity to the language learning process. Lee (2006) also reported in her research on the video-based meaning negotiation process that video conferencing could provide a less stressful conversational environment than a face-to-face language classroom due to the indirectness of the interaction.
III. RESEARCH

Based on this literature review, the researcher attempted to find out the effect of video conferencing by conducting research on 138 cyber university students for six months. The aim of the study is to find out the effect of video conferencing in language learning through investigating students' learning processes of an online English speaking program, and eventually to determine whether video conferencing can be an alternative tool to face-to-face interaction with native speakers in promoting English speaking fluency.

1. Introduction to SpeakENG and Skype

The target language program the researcher investigated is an online English program called SpeakENG. SpeakENG is an online English speaking program combining video clip materials and the video conferencing tool Skype. In the beginning of the semester, in order to register, students have to take a placement test online that evaluates their fluency in terms of listening, reading, vocabulary, and grammar. Each test is randomly generated from hundreds of questions per skill and creates the difficulty level automatically depending on students' responses to each question. Once the program places the student in the proper level according to test results, students are supposed to cover one unit per week, which consists of one video clip with speaking exercises, totaling 12 units per 12 weeks on each level. Students can speed up their process and finish their all of the units within 12 weeks. At the end of each unit, students are to take a quiz or unit test and then have real-time video conferencing with American English teachers for 12 times using the internet communication program called Skype.

Skype is one of the leading web telephone service providers that is widely used around the world for voice communication. It is a free program equipped with diverse functions to support video conferencing for either one-to-one or audio conferencing for one-to-many communications. Internet users can perform real time text-chat, file transferring, document sharing or utilize the white board to facilitate their communication during a video conference.

2. Participants

The participants in this study are 138 cyber university students who took the SpeakENG program in the 2008 fall semester. Students’ gender, age, and language level are summarized in Table 1. This data is driven from the analysis of the second student
survey attached in the Appendix.

<p>| [Table 1] Participants’ Gender, Age, and Language Level |
|-----------------------------------------------|--------------|--------------|</p>
<table>
<thead>
<tr>
<th>Gender</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
<th>N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>81</td>
<td>57</td>
<td>138</td>
<td>(100)</td>
</tr>
<tr>
<td>Gender</td>
<td>(58.7)</td>
<td>(41.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>18–29</td>
<td>30–39</td>
<td>40–49</td>
<td>50–59</td>
</tr>
<tr>
<td>Age</td>
<td>(39.1)</td>
<td>(37.7)</td>
<td>(19.6)</td>
<td>(3.6)</td>
</tr>
<tr>
<td>Language level( ^1 )</td>
<td>99</td>
<td>101</td>
<td>102</td>
<td>201</td>
</tr>
<tr>
<td>Language level( ^1 )</td>
<td>(16.6)</td>
<td>(34)</td>
<td>(18.8)</td>
<td>(21.7)</td>
</tr>
<tr>
<td>Previous experience with video conferencing</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous experience with video conferencing</td>
<td>18</td>
<td>82</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td>Previous experience with video conferencing</td>
<td>(13.0)</td>
<td>(97)</td>
<td>(100)</td>
<td></td>
</tr>
</tbody>
</table>

Most cyber university students are adult students who pursue both education and a career simultaneously; thus students’ ages ranged from 18 to 59. Students’ language levels were also varied as Table 1 shows. The highest number of students (34%) belongs to the low intermediate level (101), but there were a few advanced level (301) students (8.9%). When it comes to the previous experience with video conferencing, most students were new to the program. Only 13% of the students had used video conferencing before, and most of those students had taken the SpeakENG course in the previous semester.

3. Procedure

1) The Process of Video Conferencing

The participants in this study had 12 live video sessions with American English native teachers for one semester, approximately once a week while taking the SpeakENG program. The length of one session usually takes 15–20 minutes. The role of American teachers is to provide tutoring to students about the area they have covered in the unit and to act as a conversational partner to the students. Since teachers can access students’ personal progress in lessons, quizzes and tests, they can provide a customized lesson for

---

1) 99: beginner, 101: low intermediate, 102: intermediate, 201: high intermediate, 301: Advanced
each student. Students mostly used the video conferencing for speaking practice (35.2%), quiz review (24.7%), and review of the lesson (17.4%). Due to the frequent change of students’ schedule, students either had one teacher to four different teachers throughout the semester. More than half of the students had two teachers while some students had more than four teachers (10.5%) as shown in Table 2.

<table>
<thead>
<tr>
<th>Number of teachers</th>
<th>One</th>
<th>Two</th>
<th>Three</th>
<th>More than four</th>
<th>Total N(%)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8(5.8)</td>
<td>74(53.6)</td>
<td>42(30.4)</td>
<td>14(10.2)</td>
<td>138(100)</td>
<td>2.60</td>
<td>1.106</td>
</tr>
</tbody>
</table>

Both conference participants wear head phones and install a webcam to the computer to see each participant during the conference. Students had to sign up for a video session at least 12 hours in advance each week according to their availability or their preferred teachers’ schedule. On the conference day, students have to log into Skype five minutes before the conference and wait for the teachers’ phone call. Once they have accepted the teachers’ phone call, both sides start the 1:1 video conference.

2) Student Survey

To investigate the students’ responses to the video conference, the researcher administered two student surveys; one was done in the middle of the semester, and the other was at the end of semester. The first one was conducted to find out the general procedure of students’ video conference and the second survey was carried out to confirm major issues related to research questions. In this article, only the results of the second survey will be presented to show the major findings related to research questions(See Appendix).

3) Student Interviews

After analyzing the survey results, the researcher chose 22 students for the telephone interview to examine research questions further. In the selection of interviewees, the diversity of language level, age, gender, and participant’s willingness were considered. Ten women and twelve men from difference levels (3 from 99, 5 from 101, 5 from 102, 6 from 201, 4 from 301) participated in the phone interview. Telephone interviews were conducted from 30 minutes to one hour per each interviewee and recorded. Recorded interviews were
transcribed and analyzed.

IV. RESEARCH RESULTS

1. Video Conferencing as an Alternative to Face-to-Face Interaction

Students' responses to the effect of the video conferencing are highly positive. The overwhelming number of students thinks that video conferencing can be an alternative to face-to-face interaction (94.2%) and this response is highest among level 201 and lowest in level 99, although the variations are diminutive as shown in Table 3.

<table>
<thead>
<tr>
<th>Question 20</th>
<th>English level</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can video conferencing be an alternative to face-to-face interaction?</td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td>Yes</td>
<td>21 (91.3)</td>
<td>45 (95.7)</td>
</tr>
<tr>
<td>No</td>
<td>2 (8.7)</td>
<td>2 (4.3)</td>
</tr>
<tr>
<td>Etc.</td>
<td>0 (0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Total</td>
<td>23 (100)</td>
<td>47 (100)</td>
</tr>
</tbody>
</table>

In fact, the students preferred video conferencing as much as face-to-face interaction and there was no big difference in their preference as seen in Table 4. Particularly, beginner level (99) students preferred videoconferencing more since it causes them less anxiety when speaking. Nevertheless, the level differences are not significant ($\chi^2 = 4.790$, $p = .780$).
The students preferred face-to-face interaction because they could see gestures of their partners (33.4%), they could communicate better (18.8%), and they could listen better with the face-to-face interaction (15.9%) as shown in Table 5, but they also preferred video conferencing because this mode provides more freedom in choosing time and space for conversation (33.3%), is equipped with text chat function (18.1%) and causes less anxiety when speaking (15.2%) as seen in Table 6.

**[Table 4] Preferred Communication Mode**

<table>
<thead>
<tr>
<th>Question 16</th>
<th>Current student level</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td>Video conferencing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>23</td>
<td>12</td>
</tr>
<tr>
<td>(60.9)</td>
<td>(48.9)</td>
<td>(46.2)</td>
</tr>
<tr>
<td>Face-to-face interaction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td>(34.8)</td>
<td>(48.9)</td>
<td>(53.8)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>22(100)</strong></td>
<td><strong>46(99)</strong></td>
</tr>
</tbody>
</table>

These results indicate that students valued the video conferencing because it allows...
not only paralinguistic cues but also more freedom in choosing time and space for the conversation. As a matter of fact, compared to audio conferencing (e.g. conferencing without using a webcam), students preferred video conferencing (93.4%) much more because it allowed them to see the partners’ gestures and facial expressions, which was pointed out as the biggest advantages of face-to-face interaction.

<table>
<thead>
<tr>
<th>Question</th>
<th>Why do you prefer video conferencing to audio conferencing?</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I can see the teacher’s facial expression.</td>
<td>57 (41.3)</td>
</tr>
<tr>
<td>2</td>
<td>I feel closer to the teacher.</td>
<td>30 (21.7)</td>
</tr>
<tr>
<td>3</td>
<td>I can see the teacher’s mouth shape when pronouncing the words.</td>
<td>27 (20.0)</td>
</tr>
<tr>
<td>4</td>
<td>I can use body language to facilitate communication.</td>
<td>24 (17.0)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>138 (100)</strong></td>
</tr>
</tbody>
</table>

As seen in Table 7, most students preferred video conferencing over audio conferencing due to its involvement of paralinguistic features. The following interview excerpt also supports this explanation:

When I have a conversation without a webcam, the teacher doesn’t know whether I understand her or not, but when I speak to her with a webcam, she can tell right away if I understand her or not, and she begins to use text-chat tactfully to help me. (Park Hyun Joo, Level 201, 2008/12)

Even in a video conference, you can share your emotions and thoughts with your teacher by looking at each other’s faces and gestures, and it is almost same as actually meeting each other. (Kim Kang Nyung, level 101, 2008/12)

In particular, the students responded that video conferencing is much more effective in practicing pronunciation as stated below:

My teacher usually corrects my pronunciation by pointing out my mouth shape. I can also imitate her sounds by looking at her mouth carefully. (Kang Dong Won, level 99, 2008/12)
For these reasons, about 82.1% students responded that they always used a webcam during the video conferences.

2. Advantages of Video Conferencing

To further discover the qualities of video conferencing as a language learning tool, the researcher investigated how students evaluated the advantages of video conferencing. The highest number of students chose the "availability of one-to-one conversation" (55.1%) as the main advantage of video conferencing, as seen in Table 8.

<table>
<thead>
<tr>
<th>Question 12</th>
<th>Student level</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of one-to-one</td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td>conversation</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>No restrictions on time and space</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Text-chat function</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Less anxiety in speaking</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Other reasons</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
<td>47</td>
</tr>
</tbody>
</table>

Since Skype does not allow group video conferencing, most of video sessions were conducted via one to one conversation, which is not common in the off-line conversation class. Students generally agreed that one to one sessions are very helpful for getting feedback on their mistakes and for concentrating on the imminent conversation task. Advanced level students (301) particularly showed the highest preference (87%) for this advantage because they are in the level where students are very eager to correct their mistakes. The following interview supports this explanation:
If I go to the academy to learn English conversation, it is hard to get individual feedback from the teachers. That is one of the reasons why I don't go to the English academy. But through the one-to-one video session, I can get easily teachers' feedback on my mistakes and can ask any questions according to my interest. (Lee Hyun Woon, Level 301, 2008/12)

Video conferencing has also the convenience of not being restricted to time and space. Since most cyber university students are adult students who have jobs, it seems to be hard for them to spare certain time to commute to a language academy for English conversation practice. Video conferencing provides those students with the most convenient tool to interact with native English speakers. The following interview excerpts support this reason:

As a company worker, I rarely have time to go the academy to learn English, and this video conferencing with the native English teacher is the perfect way to help those who don't have time and rarely speak English in their daily lives. (Jung Hyun Joo, Level 101, 2008/12)

Text chat function was mentioned as the third major advantages of video conferencing. Since Skype offers both visual and written communication modes, students feel that video conferencing facilitates better communication with native English speakers than face-to-face interaction. In particular, the preference for text-chat function was predominant among beginner level students (26.1%) since this function facilitates better communication with the native English teachers when students' speaking ability is not high enough. According to the student survey results shown in Table 9, students mostly resorted to the text-chat when they didn't understand teachers (62.3%). Beginner level (99) students tended to turn to text-chat more when they had difficult in pronouncing words (17.4%).
It was also mostly teachers who were using the text chat predominantly during the video session (73.9%) and beginner level students most actively used text chat (13.0%) among the students since their speaking skills are not high enough to communicate exclusively orally, as seen in Table 10.

The following excerpts show an example of recorded text-chat between the teacher
and the student who were practicing pronunciation and grammar.

(Pronunciation Practice)
[9:24:22 p.m.] Elizabeth Feller: g b v
[9:24:40 p.m.] Elizabeth Feller: bile, vile
[9:24:47 p.m.] Student: bile
[9:24:53 p.m.] Elizabeth Feller: vile
[9:25:31 p.m.] Elizabeth Feller: base vase
[9:25:41 p.m.] Student: vase
[9:25:46 p.m.] Elizabeth Feller: ban, van
[9:25:50 p.m.] Student: ban
(Lee Ji-Won, Level 99, 2008/10)

(Grammar Practice)
[9:38:54 p.m.] Elizabeth Parker: Add an -s to the end of the word
    if your subject is He, She, It
[9:39:07 p.m.] Elizabeth Parker: They _________ to go.
[9:39:19 p.m.] Elizabeth Parker: want, wants
[9:39:28 p.m.] Student: want
[9:39:37 p.m.] Elizabeth Parker: He _________ to go.
[9:39:49 p.m.] Student: wants
(Cho Seong-Hee, Level 101, 2008/09)

The fourth reason for students' preference for video conferencing is students' decreased anxiety during the conversation. This response appeared in all levels except the advanced level (301). The students who are not fluent enough seemed to feel more secure and less stressed when speaking with native English teachers through video conferencing. A student's interview excerpt below supports this explanation.

I am a very shy person and I feel very nervous when I talk to native speakers. But through this program, I gain the confidence and feel close to the native speaker because I am getting used to talking to her. (Park Young Ae, Level 102, 2008/12)
3. The Effect of Video Conferencing on Improving English Skills

To determine whether video conferencing was an effective tool for improving students' speaking skills, the researcher asked self-diagnosis questions to the students about how their English skills had been improved through video conferencing. According to the survey result, during the video conferencing, students felt that the speaking was the most difficult task (55.8%), much more than listening (23.9%) and text-writing (15.2%). The students felt the reasons for difficulty of speaking was their lack of knowledge on vocabulary (46.4%) and sentence structuring (43.5%). The responses were evenly shown in high percents in all levels as in Table 11.

<table>
<thead>
<tr>
<th>Question 10</th>
<th>Student level</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge on proper words</td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>10 (43.5)</td>
<td>23 (48.9)</td>
</tr>
<tr>
<td>Lack of knowledge on constructing sentences</td>
<td>12 (52.2)</td>
<td>20 (42.6)</td>
</tr>
<tr>
<td>Feel nervous when talking to the native English speakers</td>
<td>0 (0)</td>
<td>1 (2.1)</td>
</tr>
<tr>
<td>Hard to sustain long conversation</td>
<td>0 (0)</td>
<td>1 (2.1)</td>
</tr>
<tr>
<td>Others</td>
<td>1 (4.3)</td>
<td>1 (4.3)</td>
</tr>
<tr>
<td>Total</td>
<td>23 (100)</td>
<td>47 (100)</td>
</tr>
</tbody>
</table>

After taking video conferencing for one semester, as Table 12 below shows, student responded that their speaking (58.0%) and listening (36.2%) are the most improved skills from video conferencing class. Improvement in speaking skill was most often mentioned by advanced level (301) students (69.2%), which result indicates interaction with the native English speakers is more effective for the advanced students than lower level students. On the contrary, beginner level students (99) more strongly rated the improvement in listening (65.2%), which means beginner students had a greater advantage
in adapting to the speech patterns of native English native speakers through video conferencing. The level differences were significant in this item ($\chi^2 = 18.568 \ p = .100$)

<table>
<thead>
<tr>
<th>Table 12</th>
<th>Improvement in English Skills According to Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current level</td>
</tr>
<tr>
<td></td>
<td>99</td>
</tr>
<tr>
<td>Speaking</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>(34.8)</td>
</tr>
<tr>
<td>Listening</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>(65.2)</td>
</tr>
<tr>
<td>Writing</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(0)</td>
</tr>
<tr>
<td>Etc.</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>(0)</td>
</tr>
<tr>
<td>Total</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>(100.0)</td>
</tr>
</tbody>
</table>

Overall, 65.9% of students confirmed that their speaking ability has been improved, although 30.4% students responded they are not sure of the effect. "No effect" response is, however, only 2.9%, as seen in Table 13. This result indicates that students experienced at least some improvement in the areas of their speaking ability.
Table 13: The Effect of Video Conferencing on Speaking Skills

<table>
<thead>
<tr>
<th>Level</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>17 (73.9)</td>
</tr>
<tr>
<td>101</td>
<td>30 (63.8)</td>
</tr>
<tr>
<td>102</td>
<td>15 (57.7)</td>
</tr>
<tr>
<td>201</td>
<td>17 (56.7)</td>
</tr>
<tr>
<td>301</td>
<td>12 (100.0)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Was your speaking ability improved after video conferencing?</th>
<th>Yes</th>
<th>No</th>
<th>Not sure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total N(%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>47</td>
<td>26</td>
<td>30</td>
</tr>
</tbody>
</table>

According to student surveys summarized in Table 14 below, the students saw the most improvement in their attitude towards talking to the native English speakers (35.5%): they became more natural in talking to the native speakers as they participated in the video conferencing. The students also responded that they saw the improvement in their listening ability (15.2%). The improvement in production skills such as better sentence structuring (8.7%) and commanding better vocabulary (5.8%) were not reported as high as those in listening skills and attitude, which means that video conferencing did not contribute much in enhancing the production skills. Nonetheless, there was a slight improvement in “speaking longer (10.9%).” This result, however, is likely to be due to the lack of sufficient access to video conferences, not due to the nature of the video conferences. Had students more frequent video conferences with native English speakers (more than once a week), the improvement in production skills would have been noticeable. In fact, according to the first survey, over 64% of students responded that they need the video conferencing more than twice in response to the question on the ideal frequency of video conferencing to improve speaking skills.
Students’ Evaluation of the Effect of Video Conferencing on Promoting Speaking Fluency

Table 14: Specific Aspects Showing Improvement

<table>
<thead>
<tr>
<th>Question 25</th>
<th>Current level</th>
<th>Total N(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>99</td>
<td>101</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>Speak longer</td>
<td>2 (8.7)</td>
<td>7 (14.9)</td>
</tr>
<tr>
<td>Better sentence structuring</td>
<td>2 (8.7)</td>
<td>2 (4.3)</td>
</tr>
<tr>
<td>Command better vocabulary</td>
<td>1 (4.3)</td>
<td>3 (6.4)</td>
</tr>
<tr>
<td>Become natural in speaking to native English speakers</td>
<td>8 (34.8)</td>
<td>17 (26.2)</td>
</tr>
<tr>
<td>Better pronunciation</td>
<td>3 (13.0)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Listen better</td>
<td>3 (13.0)</td>
<td>8 (17.0)</td>
</tr>
<tr>
<td>Other reasons</td>
<td>4 (17.4)</td>
<td>10 (21.3)</td>
</tr>
<tr>
<td>Total</td>
<td>23 (100.0)</td>
<td>47 (100.0)</td>
</tr>
</tbody>
</table>

The following interview data supports the survey data above:

(Attitude in speaking)
I am not sure how much my English skills have improved, but I can say that I have become more proactive in learning English and am not hesitating any more out of the worry that I might make a mistake. (Lee San Woo, Level 101, 2008/12)
(Sentence structuring)
I think my speaking ability has improved a little bit. For example, in the beginning, I talked with short words, and then began to use short sentences. But right now I have no problem talking to my teacher with reasonable sentence length. (Chung Min Soo, Level 101, 2008/12)

(Pronunciation)
I think my pronunciation is getting better. I had a strong Korean accent, but my teacher has corrected me a lot. Because of his feedback, I began to notice my major mistakes in pronunciation (Kang Min Sook, Level 201, 2008/12)

4. The Effectiveness of Video Conferencing as a Language Learning Tool

Although the video conferencing is a challenging language learning tool, the students participating in the research displayed the highly positive responses to this new language learning method, and 97.8% of students in all levels would recommend a video conference class to other students who wanted to improve their English speaking skill, as seen in Table 15.

<table>
<thead>
<tr>
<th>Question 23</th>
<th>Yes</th>
<th>No</th>
<th>No response</th>
<th>Total N(%)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would you like to recommend a video conference class to other students?</td>
<td>135 (97.8)</td>
<td>1 (0.7)</td>
<td>2 (1.4)</td>
<td>138 (100)</td>
<td>1.04</td>
<td>.254</td>
</tr>
</tbody>
</table>

The students believed that the interaction with native English speakers is a fundamental for improving their speaking skills as seen in Table 16; thus they believed that video conferencing is an effective way to gain access to the native English speaker regularly, which also enhanced their motivation to learn English and to speak in English. The following table and interview excerpts support this explanation.
Students' Evaluation of the Effect of Video Conferencing on Promoting Speaking Fluency

<table>
<thead>
<tr>
<th>Question 26</th>
<th>Yes</th>
<th>No</th>
<th>No Response</th>
<th>Total N(%)</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do we need the interaction with the native English speakers to improve speaking skills?</td>
<td>129(93.5)</td>
<td>8(5.8)</td>
<td>1(0.7)</td>
<td>138(100)</td>
<td>1.07</td>
<td>.287</td>
</tr>
</tbody>
</table>

I think the biggest effect of one-to-one video conferencing with native speakers is that it is motivating me. Because I have a chance to speak to native speakers regularly, it pushes me to study English more. (Cho Hyun Woo, Level 301, 2008/12)

If I talk with the native English speaker, I feel I have access to real live English, but I have had some fear about the conversation with the native English speaker. Regular video conferencing takes away this uncertain fear from me. I feel now more confident and comfortable when I talk to my videoconferencing teacher. (Pae Chun Duck, Level 201, 2008/12)

V. CONCLUSION

Utilizing video conferencing or audio conferencing in English conversation classes is a new trend in teaching English in Korea. As CMC (computer mediated communication) advances, simultaneous interaction with the native English speakers through the computer has emerged as a new method for teaching English speaking. This method has been actively accommodated in commercial English areas, but not yet widely utilized in regular English programs. In light of this, the researcher investigated the effect of video conferencing employed in the online English speaking program, SpeakENG, provided by a cyber university.

Through the research with student survey and interviews, it was observed that the students showed the highly positive responses to this new language learning tool. Unlike audio conferencing, video conferencing creates real interactions as the face-to-face interactions since video conferencing allows for paralinguistic cues such as gestures and facial expression of the speakers. In addition, this tool offers other supporting communication modes such as text-chat or white board, so the students can unite various communication modes to enhance the communication with the teacher. Video
video conferencing also causes less anxiety on the part of students due to its indirectness and allows the learners great convenience in accessing it, because every simultaneous interaction is done through the computer. Because of these reasons, 94.2% of the students responded that video conferencing can be an alternative to a face-to-face class with the native English teachers. Almost the same number of the students preferred video conferencing as much as face-to-face language class and 97.8% of the students wanted to recommend the video conferencing to other students as a way to improve their speaking skills.

In terms of the effect of video conferencing on improving speaking skills, although students responded that their biggest challenge in speaking English is lack of knowledge on vocabulary and sentence structure, these areas were not improved much (5.8%, 8.7%) with one semester of video conferencing. However, if the access to video conferencing becomes more frequent (e.g. more than once per week), the improvement on these areas would be noticeable. On the contrary, the improvements in attitudes towards the native English speaker and listening skills were reported as high (35.5%, 15.2%) in the student survey.

Based on these research results, the researcher recommends the various ways to utilize video conferencing as a way to compensate for the lack of native English speakers' input in general English programs at the college level or for teacher training courses. A video conferencing class would be a good supplement to an English conversation class for elementary and secondary teachers who are currently required to have a high speaking ability to teach English through English (TETE).
REFERENCES


Students' Evaluation of the Effect of Video Conferencing on Promoting Speaking Fluency


APPENDIX

본 설문지는 현재 본교에서 시행하고 있는 SpeakEng 프로그램에 대한 수강생 여러분들의 반응을 조사하기 위해 작성되었습니다. 설문조사 결과는 프로그램 개선을 위한 객관적 자료로 사용되어질 것입니다. 한 문항도 빠짐없이 문항에 답해 주시기 바랍니다.

설문지 답변내용과 점수는 전혀 상관이 없으니, 충실히 작성해 주십시오. 설문작성을 필사질수로 넘으려고 합니다. 모든 문항에 답해 주시기 바랍니다. 객관식 문항의 경우, 보기의 여러 개의 항목이 해당하시더라도, 꼭 한 개의 항목만 선택해 주시기 바랍니다.

설문에 성심 성의껏 답변해 주신다면 프로그램 개선을 위한 꼭 필요한 자료가 될 것입니다. 설문에 응해주셔서 감사드립니다.

1. 이름:

2. 현재 레벨은?
   ① 99  ② 101  ③ 102  ④ 201
   ⑤ 301  ⑥ 302  ⑦ 303

3. 성별:
   ① 남  ② 여

4. 연령:
   ① 18-29세  ② 30-39세  ③ 40-49세
   ④ 50-59세  ⑤ 60세 이상

5. 이 수업을 듣기 전에 온라인(On-line)으로 영어회화 수업을 들어본 적이 있으나?
   ① 있다  ② 없다

6. 이 수업을 듣기 전에 최상대화를 이용한 영어회화 수업을 들어본 적이 있으나?
   ① 있다  ② 없다

7. 최상 대화 수업 시 쓰기기능(키보드를 이용한 타이핑)은 주로 어떤 경우에 사용하셨습니까?
130 Students’ Evaluation of the Effect of Video Conferencing on Promoting Speaking Fluency

① 교사가 말한 부분을 정확하게 알아듣지 못했을 때
② 교사가 내가 한 말을 알아듣지 못했을 때
③ 단어의 발음 연습 시
④ 모르는 표현을 물어볼 때

8. 쓰기 기능은 주로 누가 많이 사용하셨습니까?
   ① 원어민 교사
   ② 학생
   ③ 서로 거의 비슷하게 사용

9. 화상 대화 수업 시 가장 어려웠던 부분은 무엇이었습니까?
   ① 읽기
   ② 말하기
   ③ 키보드로 쓰기
   ④ 기타

10. 화상 대화 수업 시 말하기가 어려웠다면 그 이유는 무엇입니까?
    ① 단어가 생각이 안 나서
    ② 문장 구성이 안 되어서
    ③ 원어민 앞이 힘 있고 긴장 되어서
    ④ 영어로 오래 말하기가 힘들어서
    ⑤ 기타

11. 화상 대화를 통해서 가장 향상이 있었던 영어 실력은 무엇입니까?
    ① 말하기 능력
    ② 읽기 능력
    ③ 쓰기 능력
    ④ 기타

12. 화상 대화 수업의 장점은 무엇이라고 생각하시는가?
    ① 원어민과 일대일로 대화가 가능하다
    ② 시간과 공간의 제약을 받지 않는다
    ③ 메신저를 이용함으로 키보드를 이용한 쓰기와 병행해서 말하기를 할 수 있다
    ④ 원어민과 대화 시 심리적 불안감이 줄어든다
    ⑤ 경제적이다
13. 화상수업과 카메라 없이 음성으로만 하는 수업 중 어느 것을 더 선호하십니까?
   ① 화상수업  ② 음성수업

14. 13번에서 ②를 선택하셨다면 그 이유는?
   ① 서로 얼굴을 보는 것보다 듣는게 더 좋어서( )
   ② 웹캠이 준비가 안되어서( )
   ③ 더 간단해서( )
   ④ 기타

15. 13번에서 ①을 선택하셨다면 그 이유는?
   ① 원어민교사의 표정을 읽을 수 있어서( )
   ② 얼굴을 보는 것이 더 친근하게 느껴지기 때문에( )
   ③ 교사의 입술동작을 볼 수 있어서 발음공부에 도움이 되어서( )
   ④ 제스처를 볼 수 있기 때문에 더 의사전달이 잘 되어서( )
   ⑤ 기타

16. 화상대화수업과 면대면 수업 중 어떤 방식을 더 선호하십니까?
   ① 화상대화수업
   ② 면대면수업
   ③ 기타

17. 16번의 답변 중 ②를 선택하셨다면, 그 이유는 무엇입니까?
   ① 원어민교사를 직접 보면서 더 말하기가 잘 돼
   ② 직접 만나면 듣기에도 더 잘 된다
   ③ 제스처나 표정을 더 잘 볼 수 있다
   ④ 원어민의 입모양을 관찰할 수 있으므로 발음연습에 효과적이다
   ⑤ 기타

18. 16번의 답변 중 ①을 선택하셨다면, 그 이유는 무엇입니까?
   ① 메신저를 이용함으로 기보드를 이용한 쓰기와 발음해서 말하기를 할 수 있다
   ② 시간과 공간의 제약을 받지 않는다
   ③ 직접 만나서 할 때 보다 상리적 불안감이 줄어든다
   ④ 일대일 수업이 가능하다
19. 선호하는 수업형태의 순서대로 번호를 써주세요.(예 - 1,2,3,4)
   ① 일대일 면대면 수업   ② 일대일 화상 대화 수업
   ③ 그룹 면대면 수업   ④ 그룹 일대일 수업

20. 화상대화수업이 면대면 대화수업이 대인에 될 수 있다고 생각하십니까?
   ① 그렇다   ② 아니다   ③ 기타

21. 20번의 답변 중 ①을 선택하셨다면, 그 이유는 무엇입니까?

22. 20번의 답변 중 ②을 선택하셨다면, 그 이유는 무엇입니까?

23. 영어를 공부하는 사람에게 화상대화수업방안을 추천하고 싶으신가요?
   ① 그렇다   ② 아니다   ③ 기타

24. 한 학기 화상대화수업을 하고 나서 본인의 영어 발하기능력이 향상되었다고 생각하신가요?
   ① 그렇다   ② 아니다   ③ 잘 모르겠다   ④ 기타

25. 24번의 답변 중 ①을 선택하셨다면, 그 이유는 무엇입니까?
   ① 예전보다 발음을 오래할 수 있다
   ② 문장의 구성이 잘 된다
   ③ 단어구사력이 좋아졌다
   ④ 원어민과 대화 시 자연스러웠다
   ⑤ 발음이 좋아졌다
   ⑥ 원어민의 발음이 잘 안이 듣는다
   ⑦ 기타

26. 영어회화를 익히기 위해서 온/오프라인을 떠나 원어민 대화가 목 필요하다고 생각하신가요?
   ① 그렇다   ② 아니다   ③ 기타

27. 24번의 답변을 선택하신 이유는 무엇입니까?
Key words: video conferencing, video conference, online speaking program, distant English education, teaching speaking
Application levels: secondary education and university level

Author: Sook-Kyung Jung (Daejon University): clar7618@dju.kr

Received: May 15, 2009
Reviewed: July 30, 2009

This study aims to examine the effects of elementary students’ collaborative writing in weblogs. The students’ writing was evaluated using weblogs in one of two modes, collaboration or non-collaboration. The answers to the following two questions provide the pedagogical implications and insights for researchers and teachers: 1) Whether language proficiencies in two modes, collaboration or non-collaboration, result in significant differences in writing improvement? 2) How do students respond to using weblogs as a writing tool? Each student wrote six essays. The participants pre-treatment writing and post-treatment writing were analyzed to examine their writing improvement through collaboration by linguistic features, fluency, accuracy, and grammatical complexity. As for writing improvement, the collaboration group especially demonstrated enhanced fluency. Also, the findings of the present study provide strong evidence that collaboration between peers acted as an important factor for enhancing writing quality according to the questionnaire results. It can be concluded that collaboration mode is generally more effective between the two modes. As shown in this research, collaboration mode provides a cooperative atmosphere which provides writers more opportunity to freely exchange their opinions. The present study suggests that collaboration weblog writing can be effective for students to enhance their writing ability.

* This research was supported by the Pai Chai University Research Grants in 2008.
I. INTRODUCTION

Researchers and teachers who study and teach foreign language constantly seek for innovative ways on how to teach writing to their students. Luckily, recent technology has provided synchronous and asynchronous communication for teaching, especially for not only first language courses but also for second language (L2) courses. A few examples would be online chatting, email, word processor, and bulletin board discussion. These advanced technologies helped learning a second language and has expanded theoretical ideas about current writing pedagogy.

New findings show that there is a relationship between new advanced technology and the impact on students' writing performance (Chun, 1994; Hertel, 2003; Liu, & Yuan, 2001; Sullivan & Pratt, 1996; Warschauer, 1996a). The constructive discoveries showed that students are exceedingly motivated to write, and they produce more writing when using weblog technology. Still, other studies revealed that there is no direct relationship between technology and writing improvement (Perez, 2003; Schultz, 2000).

There has been limited research on the relationship between the use of weblogs and the impact on students' writing. The findings were limited to adult learners. Therefore, this research realized the need to address the effects of weblog writing on young learners like elementary students. The English level of elementary students improved due to diverse language experiences such as studying abroad and attending an English camp so the novel methods have to meet their language needs and cover their language requirements. Then, this current study sets out to investigate the relevancy of the weblog writing conclusions of previous research when applied to elementary students.

This study is significant because it shows the evidence of how this technology could be useful for writing instruction. Also, it shows how ESL students respond to writing in blogs and will contribute to the knowledge in the field of L2. This study will also give insight to researchers, teachers, and educational technology planners on how students could use blogs for interaction and writing skills development. Therefore, weblogs were selected as the media for commentary and collaborative interaction between writers and reviewers.
II. LITERATURE REVIEW

1. Overview of Collaborative Writing

Online collaborative interaction endorses meaningful writing exchanges by students within a social context. The online tools commonly used, blogs, e-mail, bulletin boards, and chat rooms, produce a socially and linguistically augmented setting for collaborative writing. Previous studies on online collaboration have concentrated mainly on the investigation of linguistic aspect based on psycholinguistic approaches to language learning (Blake, 2000; Chun, 1994; Kern, 1996; Lee, 2001; Sotillo, 2000). Research on collaborative writing have presented positive results not only in L1 students (Keys, 1994) but also in L2 students (Jae Kyung Kim, 2005; Storch, 2002; Swain & Lapkin, 1998).

The collaborative writing through group work or pair work in language learning settings, specifically in L2 classrooms, depend on a theoretical foundation. From a theoretical standpoint, the use of group work or pair work for collaborative writing harmonized with a social constructivist view based on the exertion of Vygotsky (1978). He presented cognitive development as innately a socially situated endeavor, particularly in a child's cognitive development since it occurs in social interaction with a helpful partner. The assistance of the partner is referred to in the text as scaffolding. The study of Storch (2002) has addressed scaffolding can happen among peers when they working collaboratively.

Therefore, from a social constructivist perspective, students can be encouraged to join in collaborative work which promote co-construction of their ideas.

2. Weblogs in English Language Teaching

Research on weblogs is constantly increasing because of its growing influence on writing (Kim, 2005; Lee, 2002; Matsumura & Hann, 2004; Min, 2006; Tuzi, 2004). Blogs have numerous potential application in a classroom setting because it leaves immediate feedback, works with both word and pictures, and leaves links to others. Scholars who use blogs say that because students know that people have access to their entries on the web, they often produce higher quality work compared to students who write only for teachers or class. Scholars who used blogs in their classroom discovered that weblogs offer reading and writing inducement (Bay, 2004; Campbell, 2003; Ward, 2004; Wrede, 2003).

These characteristics make it an appropriate tool for academic use and, in fact, some
research on blog application in writing classes has been conducted (Campbell, 2003; Ward, 2004). The studies found that both teachers and students benefited from the use of blogs in class. For the teacher, the blogs provide a supplemental aid where teachers’ notes can be published in chronological order. Also, all student writing samples are stored in one place and can be read from any computer connected to the Internet at anytime. As long as the teacher has access to the Internet, teachers can give collective feedback to the class. Additionally, individual feedback can be given to individual student blogs and enable active interaction between a teacher and his students.

The research spectrum includes, but is not limited to, discourse analysis, building community, in-depth analysis of blogs, and the evaluation of the frequency and quality of blogging writing. Brooks, Nichols, and Priebe (2004) performed an empirical study to investigate students’ perception of blogging to determine if motivated students would produce stronger writing. They examined genre, remediation, and motivation as the main model for instructing with weblogs. However, they lacked research on the pedagogical problems of teaching objectives, styles, forms, and strategies for writing. Weblogs allow individual users to publish work online, and comment on others’ views. They have secondary applications that allow for links, searches, and navigation. It is known that blogs seem to facilitate communication. This could have essential implications for the use of the technology as a medium of collaboration. Also, weblogs can be effective tools as they allow students to post their writing and comments on their writing from both teachers and other students.

Similarly, students may benefit from blog application in class. First, it provides easy accessability to complete list of teachers’ notes on the Internet. Second, students can preview class material before class as well as review material after class. Students can read comments intended for the whole class and comments directed at them individually. This maximizes feedback and contact with the teacher. Moreover, students can observe how their writing has changed over time.

According to Kennedy (2003), when student work is gathered, revised, assessed, and is needed to be published quickly, blogs synthesize the best elements of portfolio-driven courses. Kennedy advises to use rubrics that focus more on the quality, compared to the quantity, of the student work. She suggests using two grades, one for grammar and the other for style. There are also other methods of assessing a student’s grade such as engagement with text, whether a student wrote thoughtfully, and used evidence.
3. Weblogs as a Collaborative Writing Tool

Based on sociocultural learning theory, Campbell (2003) and White (2004) emphasized that blogging supports a collaborative environment. From observations, blog entries, and students' comments, Campbell and White's research and experiences provided evidence that by having an audience, students produced more higher quality work. Johnson (2004) claimed that L2 learners' blogs show potential of enhancing their literary skills.

According to Nelson and Fernheimer (2003), blogs are useful when small groups work together for joint writing projects. This is because students can post short ideas frequently on their blogs and this is used as an effective communication method. Blogs are also useful for stimulating revision for other students' work because individual works can be easily shared through blogs. Instructors can observe the improvements of the students by reading their posts and giving feedback. Barrios (2003) reported that by joining a Web community, students gained a sense of belonging and ownership because what they wrote could be commented on by other people.

In another phenomenological case study, Campbell (2003) used weblogs to create a computer assisted cooperative learning environment in a university class. In this study, Campbell invited American students who were at a Japanese university to a face to face class enhanced by weblogs for online communication. He investigated the students' experiences in the following areas: weblog use, blended structure learning environment, public nature of writing, and cooperative learning. This study showed that weblogs could be used to enhance students' interest in learning and were beneficial in a structure learning environment.

By using a weblog for reflective journal writing, Xie and Sharma (2004), introduced findings of a phenomenological study on how students used weblogs to share their experiences through reflective journal writing. Graduate students, in a program for instructional system design, participated in the experiment. Immediately, the students were divided into two groups, one positive and the other negative about blogging. The initial data showed that weblogs could be used to support reflection. The positive group liked using weblog because it gave them time to think and learn, gave them a sense of community, and presented new technology. The negative group disliked weblog because the concerns of their own privacy concerns, and the hesitance to use new tools. After Xie and Sharma distinguished the initial set of themes, they discovered additional themes that needed to be examined.

Research from Cole (2004) showed that blogs presented a motivating environment for students. Weblogs gave students audiences for their writing as well as to read their peer's
writing. Also, weblogs encouraged students to share quality responses through a higher level of discussion. Jae Kyung Kim (2009) analyzed the relationship between the linguistic aspect (writing performance and written interaction) and the interpersonal aspect (writers' familiarity among group members) in producing better writing performance on weblogs using Social Network Analysis (SNA).

With a weblog that he produced, Campbell (2004) researched learner attitudes set up for EFL college students. Campbell investigated the helpfulness of a class weblog to discuss assignments and to communicate ideas in order to see conversational topics. Based on his data, qualitative and quantitative, collected from surveys and interviews from his combined face-to-face class and online learning with weblogs, he discovered that students enjoyed using weblogs. The students' English improved, and their interest toward English increased significantly because they created their own blogs.

III. STUDY

1. Research Questions

This study was conducted to examine the effects of collaborative writing in weblogs. The students' writing was evaluated using weblogs in one of two modes, collaboration or non-collaboration. In order to investigate the effects of collaborative writing in weblogs, two specific research questions were developed:

1) Are there any significant differences in linguistic features such as fluency, accuracy, and grammatical complexity in regards to the two different groups in weblogs?
2) How do students respond to using weblogs as a writing tool?

2. Participants

There was a total of 23 participants, fifth through sixth grade students (12 boys and 11 girls, mean age 12.8), enrolled in Saturday special classes at B Elementary School and C Elementary School. The students participated in the present study from March 2008 to July 2008 and were randomly divided into the two groups. B Elementary School students were the experimental group and C Elementary School students were the control group. The experimental group had 11 students, 4 girls and 7 boys. The control group had 12 students, 7 girls and 5 boys. In the beginning of the current experiment, the number of
enrolled participants was 31, but due to lack of collaborative writing participation, the data of 23 students were used in the present study.

3. Materials and Procedure

Three data collection instruments were used in this research: students’ essays, a questionnaire, and an interview which was administered after the student’s collaborative weblog writing.

Each student was asked to write six essays. The first writing assignment was used as a diagnostic tool in order to determine the students’ writing proficiency. The next four writings became the baseline material used for collaborative writing study. Before they completed the writing assignment, the collaboration group students exchanged their opinions (see Figure 1 for written collaboration text in detail), while the other group students did so alone. They went through the same procedures.

[Figure 1] Written Collaboration Text
The last writing assignment was used to measure the progress that each student had made. Then the participants were asked to write down the answers for two open-ended questions. The first question asked the positive aspects of writing through weblogs and the second question asked about the negative aspects of writing through weblogs. The purpose of the questionnaire was to examine the participants' perspectives towards weblogs at the end of the semester. The questions were created to gain an in-depth implication into participants' prior writing experience, to gauge their current experience with weblogs writing, and to ascertain how they felt about blogging.

For more detailed information on the students' perspectives towards weblogs, four students were selected from each mode and asked to participate in the interviews. Those interview questions were designed to be semi-structured. The interviews were conducted in Korean based on the participants' need for elucidation of the questions at the end of the semester. The participants' interviews were transcribed for authenticity in the form of detailed notes.

4. Data Analysis

A normality test (Kolmogorov-Smirnov(a)) was performed because of the small sample size. A normality test was held when the researcher needs to address the statistical validity of data due to the small sample size. If there is a significant difference in the normality test result of the data, statistical analysis cannot be done on the data of the study and vice versa. In Table 1, the statistical result of the normality test revealed that no significant differences existed in fluency (words \( p = .061 \) and T-units \( p = .200 \)), accuracy (EFT \( p = .172 \) and EFC \( p = .200 \)), and grammatical complexity (T-unit complexity ratio \( p = .200 \) and dependent clause ratio \( p = .348 \)). Therefore, a normality assumption can be accepted and statistical analysis can be done on the data of this research due to those results.

<table>
<thead>
<tr>
<th>Items</th>
<th>Sum of squares</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td>0.138</td>
<td>23</td>
<td>0.200(*)</td>
</tr>
<tr>
<td>Words</td>
<td>0.177</td>
<td>23</td>
<td>0.061</td>
</tr>
<tr>
<td>T-units</td>
<td>0.120</td>
<td>23</td>
<td>0.200(*)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>0.085</td>
<td>23</td>
<td>0.200(*)</td>
</tr>
<tr>
<td>Error-free T-units (EFT)</td>
<td>0.153</td>
<td>23</td>
<td>0.172</td>
</tr>
<tr>
<td>Error-free clauses (EFC)</td>
<td>0.103</td>
<td>23</td>
<td>0.200(*)</td>
</tr>
</tbody>
</table>

[Table 1] Kolmogorov-Smirnov(a) Results of Normality
Complexity
T-unit complexity ratio
Dependent clause ratio

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complexity</td>
<td>0.139</td>
<td>23</td>
<td>0.200(*)</td>
</tr>
<tr>
<td>T-unit complexity ratio</td>
<td>0.127</td>
<td>23</td>
<td>0.200(*)</td>
</tr>
<tr>
<td>Dependent clause ratio</td>
<td>0.954</td>
<td>23</td>
<td>0.348</td>
</tr>
</tbody>
</table>

* = statistically significant ($p<.05$)

According to Wolfe-Quintero, Inagaki, and Kim (1998), fluency, accuracy, and complexity have also been used as dependent measures for examining the effect of a pedagogical treatment on either oral or written language use in L2 language acquisition research studies.

Wolfe-Quintero, Inagaki, and Kim (1998) classified the measures that were used in studies of L2 development as belonging to three major categories corresponding to different aspects of development: fluency, accuracy, and complexity. Fluency means that L2 learners write more fluently, or write more in the same amount of time, as they become more proficient. Accuracy means L2 learners write more accurately, or produce fewer errors in their writing, as they become more proficient. Complexity means that L2 learners write more grammatically and lexically complex sentences as they become more proficient.

As Lennon (1990) suggested, in the traditional sense of these words, fluency refers to "native-like rapidity," accuracy refers to being "error-free," and complexity refers to "using a wide range of structures and vocabulary" (p.390). The fluency, accuracy, and complexity measures have been used in language studies to explore the effect of program (Carlisle, 1989; Ferris & Politzer, 1981). Based on the assumption, more proficient L2 writers are more fluent, accurate, and complex in their writing than less proficient writers. It is legitimate to use fluency, accuracy, and complexity measures in writing because these measures work together to define a global picture of language development in L2 writing.

To measure the improvement of the students’ writings, Wolfe-Quintero, Inagaki and Kim’s (1998) scoring scheme was adopted as shown in Table 2. This study attempted to assess and analyze the students’ pre- and post-treatment writings in three different measures: fluency, accuracy, and complexity.
Effects of Collaborative Writing in Weblogs

[Table 2] Fluency, Accuracy, and Complexity Scoring Scheme
(Wolfe-Quintero, Inagaki & Kim, 1998, pp. 183, 184, 186)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Measure Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluency</td>
<td></td>
</tr>
<tr>
<td>Words</td>
<td>Total number of words</td>
</tr>
<tr>
<td>T-units</td>
<td>Total number of T-units</td>
</tr>
<tr>
<td>Accuracy</td>
<td></td>
</tr>
<tr>
<td>Error-free T-units (EFT)</td>
<td>Total number of error-free T-units</td>
</tr>
<tr>
<td>Error-free clauses (EFC)</td>
<td>Total number of error-free clauses</td>
</tr>
<tr>
<td>Complexity</td>
<td></td>
</tr>
<tr>
<td>Dependent clause ratio</td>
<td>Total number of dependent clauses divided by total number of clauses</td>
</tr>
<tr>
<td>T-unit complexity ratio</td>
<td>Total number of clauses divided by total number of T-units</td>
</tr>
</tbody>
</table>

As for fluency, words and T-units were used, as for accuracy, error-free T-unit\(^1\) (EFT) and error-free clauses (EFC) were used, and as for complexity, dependent clause ratio and T-unit complexity ratio were used in this research. A researcher and a different rater\(^2\) counted the number of words and T-units, EFT, EFC, dependent clause ratio, and T-unit complexity ratio based on Wolfe-Quintero, Inagaki and Kim’s (1998) scoring scheme. A consensus was reached on the counting after two raters came to a complete agreement. The inter-counter reliability of .83 was obtained.

To investigate the students’ perspectives towards weblogs, after the writing portion of the research, the participants were asked to respond to a survey questionnaire followed by a personal interview conducted by the researcher. The questionnaire and interviews were used as diagnostic tools in order to gauge the students’ attitudes. For the survey and interview similar questions prepared by the researcher were used. The first question was, “What do you think were the advantages of using weblogs as a tool in improving your writing?” The second question was “What do you think were the disadvantages of using weblogs as a tool in improving your writing?”

For more detail, two similar open-ended questions about the positive aspects and the negative aspects of using weblogs were employed during a 40-minute or 50-minute

---

1) Wolfe-Quintero, Inagaki, & Kim mentioned that researcher must set a time limit for error-free T-units to be useful. This research set a time on students’ compositions, 30 minutes to write a journal in both modes.

2) A rater was a native Korean speaker who teaches at a university in Korea. She finished her doctoral course majoring in English Education and her research area has been writing.
personal interview. The interviews with the students produced some remarkable insights about students' perceptions toward using weblogs. The data analysis of main documents involved segment-by-segment coding of interview transcripts.

IV. RESULT AND DISCUSSION

In order to investigate whether there was an improvement in post-writing scores, more specifically, to examine the linguistic features in the post writing regarding fluency, accuracy, and complexity, the descriptive statistics of writing frequency were presented. ANCOVA was conducted on the writing performance in terms of fluency, accuracy, and complexity to delineate the differences between the groups.

1. Fluency

The descriptive statistics of collaboration weblogs and non-collaboration weblogs in terms of fluency, are detailed in Table 3. When looking at the fluency by two modes, collaboration weblogs and non-collaboration weblogs, the results show that both the number of words and T-units improved in post writing.

<table>
<thead>
<tr>
<th>[Table 3] Descriptive Statistics of Fluency by Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration Weblogs &amp; Non-Collaboration Weblogs</td>
</tr>
<tr>
<td>Pre-treatment Writing &amp; Post-treatment Writing</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>Fluency</td>
</tr>
<tr>
<td>Word</td>
</tr>
<tr>
<td>T-unit</td>
</tr>
</tbody>
</table>

As can be seen from Table 3, collaboration weblog participants showed greater improvement in total number of words and T-unit than non-collaboration weblog participants. The mean increased from 149.09 to 199.82 for words in collaboration weblogs, which was much higher than that of non-collaboration weblogs which rose from 126 to 142.17. Moreover, the participants in collaboration weblogs (10.27 to 17.45) showed greater improvement than the participants in non-collaboration weblogs (11.08 to 11.58) in terms
of T-unit.

The descriptive statistics of writing scores gives an overall perspective of the differences in pre- and post-writings made in the two modes. The figures suggest that collaboration weblogs participants showed more improvement in fluency than non-collaboration weblogs participants.

An ANCOVA was used to determine the significant differences between collaboration weblogs and non-collaboration weblogs. Specifically, to examine the performance of collaboration weblogs and non-collaboration weblogs participants in the post-treatment writing, the subsequent measures, the total number of words, the total number of T-units are summarized in Table 4.

As can be seen from Table 4, statistical analysis revealed that there were significant differences between the two different modes, collaboration weblogs and non-collaboration weblogs, in terms of fluency measures, which are total words ($F = 1.438, p = .044$) and T-units ($F = 3.789, p = .0036$).

<table>
<thead>
<tr>
<th>Table 4</th>
<th>ANCOVA Results of Fluency Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fluency</strong></td>
<td><strong>SS</strong></td>
</tr>
<tr>
<td>Model</td>
<td>31268.198(a)</td>
</tr>
<tr>
<td>Intercept</td>
<td>17,156.321</td>
</tr>
<tr>
<td>Covariate</td>
<td>23,132.197</td>
</tr>
<tr>
<td>Mode</td>
<td>3,042.038</td>
</tr>
<tr>
<td>Error</td>
<td>42,295.106</td>
</tr>
<tr>
<td>Total</td>
<td>663,644.000</td>
</tr>
</tbody>
</table>

| **T-Unit** | **SS** | **df** | **MS** | **F** | **p** |
| Model | 54.850(a) | 2 | 27.425 | 2.061 | 0.153 |
| Intercept | 453.187 | 1 | 453.187 | 34.061 | 0.000 |
| Covariate | 7.538 | 1 | 7.538 | 0.567 | 0.460 |
| Mode | 50.420 | 1 | 50.420 | 3.789 | 0.036 |
| Error | 266.106 | 20 | 13.305 |
| Total | 4,182.000 | 23 |

Overall, the mean score of the total number of words in collaboration weblogs was significantly improved. Since the general interpretation of language proficiency depends on the total number of words, the total number of T-units are counted as a measure of the overall fluency. The word count reveals how comfortable one is writing in a second
language. In other words, the term 'fluency' in a more narrow sense refers to the length of output (Lennon, 1990).

Other research results revealed that, "when the average length of production units such as clauses, sentences, T-units, or error-free T-units is calculated, there is a strong relationship to proficiency, with a gradual increase in length as proficiency develops" (Wolfe-Quintero et al., 1998, p. 21).

Therefore, it can be implied from the research results that participants made greater progress in their writing, concerning the length of writing and the number of T-units in both collaboration weblogs and non-collaboration weblogs, especially collaboration weblogs. Consequently, the results suggest that collaboration weblogs showed statistical significance in fluency concerning the total number of words and T-units.

2. Accuracy

The results of descriptive statistics for collaboration weblogs and non-collaboration weblogs in terms of accuracy are detailed in Tables 5. Overall, the figures in Table 5 indicate that both collaboration weblog and non-collaboration weblog participants showed an improvement in both the number of error-free T-units (EFT) and error-free clauses (EFC).

<table>
<thead>
<tr>
<th>Table 5</th>
<th>Descriptive Statistics of Accuracy by Modes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Collaboration Weblogs</td>
</tr>
<tr>
<td></td>
<td>Pre-treatment Writing</td>
</tr>
<tr>
<td></td>
<td>M</td>
</tr>
<tr>
<td>Accuracy</td>
<td></td>
</tr>
<tr>
<td>EFT</td>
<td>3.45</td>
</tr>
<tr>
<td>EFC</td>
<td>8.36</td>
</tr>
</tbody>
</table>

The collaboration weblogs mean score of pre-treatment writing increased from 3.45 to 5.27 (EFT) and 8.36 to 10.55 (EFC) in post-treatment writing while the non-collaboration weblogs mean score of pre-treatment writing increased from 4.42 to 4.67 (EFT) and 8.17 to 9.33 (EFC) in post-treatment writing.

Considering accuracy in comparing the two different groups, the number of EFT and the number of EFC are presented in Table 6. Table 6 forms a constellation which
provides an important information about their writing.

### Table 6 ANCOVA Results of Accuracy Scores

<table>
<thead>
<tr>
<th>Accuracy</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>5.590(a)</td>
<td>2</td>
<td>2.795</td>
<td>0.228</td>
<td>0.798</td>
</tr>
<tr>
<td>Intercept</td>
<td>143.937</td>
<td>1</td>
<td>143.937</td>
<td>11.732</td>
<td>0.003</td>
</tr>
<tr>
<td>Covariate</td>
<td>3.482</td>
<td>1</td>
<td>3.482</td>
<td>0.284</td>
<td>0.600</td>
</tr>
<tr>
<td>Mode</td>
<td>3.079</td>
<td>1</td>
<td>3.079</td>
<td>0.251</td>
<td>0.622</td>
</tr>
<tr>
<td>Error</td>
<td>245.367</td>
<td>20</td>
<td>12.268</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>816.000</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td>31.944(a)</td>
<td>2</td>
<td>15.972</td>
<td>0.622</td>
<td>0.547</td>
</tr>
<tr>
<td>Intercept</td>
<td>164.892</td>
<td>1</td>
<td>164.892</td>
<td>6.417</td>
<td>0.020</td>
</tr>
<tr>
<td>Covariate</td>
<td>23.512</td>
<td>1</td>
<td>23.512</td>
<td>0.915</td>
<td>0.350</td>
</tr>
<tr>
<td>Mode</td>
<td>7.590</td>
<td>1</td>
<td>7.590</td>
<td>0.295</td>
<td>0.593</td>
</tr>
<tr>
<td>Error</td>
<td>513.882</td>
<td>20</td>
<td>25.694</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,806.000</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As for the effect of the mode variable, the result showed that no significant differences were found between the two different modes in terms of EFT \((F = .251, \ p = .622)\) and EFC \((F = .295, \ p = .593)\).

### 3. Grammatical Complexity

Dependent clause ratio and T-unit complexity ratio were calculated for complexity measures. Even though the scores of descriptive statistics for fluency and accuracy indicate that there was progress in total numbers of words and T-units and in total numbers of EFT and EFC in both modes, the scores of descriptive statistics for complexity do not seem to reveal significant differences for the pre-and post-writing scores.

The results for the descriptive statistics of collaboration weblogs and non-collaboration weblogs in terms of complexity are given in Table 7.
As can be seen from Table 8, there was no significant difference in either the dependent clause ratio \( (F = 5.56, p = .209) \) or the T-unit complexity ratio \( (F = .48, p = .498) \) between the pre-treatment writing and post-treatment writing.

As for complexity, "the T-unit complexity ratio is designed to measure how grammatically complex the writing of a learner is, under the assumption that the more clauses there are per T-unit, the more complex the writing is" (Wolfe-Quintero, Inagaki, & Kim, 1998, p. 85). However, despite the fact that fluency measures increased as discussed earlier, grammatical complexity measures concerning dependent clause ratio and
T-unit complexity ratio did not show any significant difference between the two different modes.

4. Participants' Perspectives towards Weblogs

1) Open-Ended Questions

The answers to the survey questions provided the pedagogical implication and insights for the understanding of the participants' perception towards weblogs. Among eleven students, ten students were positive about using weblogs as a writing tool and four students felt uncomfortable using weblogs. Among the four who felt uncomfortable using weblogs, three students also expressed positive ideas as well. Part of their answers were not specifically connected to the use of weblogs even though the participants were given questions about the advantages and the disadvantages of using weblogs in the two different modes. Also, some answers of both groups were identical. The number in the parenthesis show the number of students. The students in the collaboration mode believed that weblogs were helpful in gaining ideas and writing better essays. They understood that collaboration was helpful to realize their strengths and weaknesses in writing and that it could eventually enhance their writing ability. They realized they could scaffold their ideas from the interaction of their colleagues in the collaborative environments.

<table>
<thead>
<tr>
<th>Table 9</th>
<th>Collaboration in Weblogs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantages</td>
<td></td>
</tr>
<tr>
<td>be able to gain good ideas from my partner (4)</td>
<td></td>
</tr>
<tr>
<td>be proud of my writing site (2)</td>
<td></td>
</tr>
<tr>
<td>be able to get help from colleague for better writing (2)</td>
<td></td>
</tr>
<tr>
<td>develope my ideas with my partners (1)</td>
<td></td>
</tr>
<tr>
<td>be able to write better in the collaborative environments (1)</td>
<td></td>
</tr>
<tr>
<td>Disadvantages</td>
<td></td>
</tr>
<tr>
<td>laziness of my partner (2)</td>
<td></td>
</tr>
<tr>
<td>uncomfortable to use computer (2)</td>
<td></td>
</tr>
</tbody>
</table>

Note: ( ) indicates the number of reasons when the students answered the question.

On the other hand, students also complained about the disadvantages of collaboration in weblogs. Students did not enjoy working with lazy partners. These lazy students constantly procrastinated their portion of the work and troubled their partners. Also, some students who were not used to computer technology complained about the fact that they had to use computers. These students were not used to keyboards or software used for...
weblogs.

In Table 10, one advantage of non-collaboration in weblogs was that each student was able to edit his own work easily. When students share their work with other students, it was not easy to make changes because of the different ideas.

Another advantage of non-collaboration in weblogs was being able to gather the student’s writing on their own website. When students worked on their own, they could freely surf online and add information to their blog sites.

An additional advantage of non-collaboration in weblogs was being able to write more comfortably in a private environment. Some students produced higher quality writing when they worked independently in a private environment.

<table>
<thead>
<tr>
<th>Non-Collaboration in Weblogs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advantages</td>
</tr>
<tr>
<td>be able to read and correct my writing easily (3)</td>
</tr>
<tr>
<td>be able to gather my writing in my blog site(3)</td>
</tr>
<tr>
<td>be able to write more comfortable (2)</td>
</tr>
<tr>
<td>Disadvantages</td>
</tr>
<tr>
<td>not be able to find my errors easily (2)</td>
</tr>
<tr>
<td>be worried about using computers (2)</td>
</tr>
</tbody>
</table>

Contrary to the advantages of non-collaboration in weblogs, a disadvantage of non-collaboration in weblogs was not being able to recognize their own errors easily. This was a common complaint because when there was no partners, the students lost the proofreading benefits from others.

2) Interview

The data analysis of main documents included segment coding of interview transcripts. Specifically, the interview transcript coded by hand. The students' statements were color coded in order to systematize the part of interview scripts that symbolized categories. The expressions that emerged were clustered and labeled by categories. Then, the categories were crossed examined and resolved clusters by grouping together similar categories in order to discern the relationships among these that would be applicable to the particular framework under exploration with a different researcher.

The interview data demonstrated that using weblogs were closely related to writing quality. Most students were positive about weblog collaborative writing for three general reasons: convenience, collaboration, and novel technology. However, some students were
negative. They complained about a lack of privacy and being easily distracted when using a computer. The students interview data overlapped for the same reasons and showed a similar tendency of using weblogs.

(1) Positive Aspects of Using Weblogs

Based on student interviews, some of the positive aspects of using weblogs are convenience of creating, editing, and posting essays and the improvement of computer skills. Among the numerous interviews, there were six significant interview scripts that perceived blogging positively. These six interviews, two for convenience, two for collaboration, and two for novel technology, are condensed and are mentioned below.

① Convenience

The following interview is with a student who claimed that a weblog was useful because of its' convenience of correcting mistakes and creating a post on the blog.

"First of all, I can type on the blog. This is same as the word processor. Also, I can change the size of the letters freely. I can also change the color of the font or the format of the blog. Also, it is easier to make corrections on a blog. I can post my writing on a blog and it feels private. I can keep it to myself. But anyone in the world can see what runs through my head in my blog."

"If I write my ideas on paper, I need to correct my thought very often. Whenever I correct my writing, I use an eraser but the correction marks defile my paper. It makes me unhappy. However, when writing on blogs, I am very comfortable to correct my writing."

This student emphasized the effectiveness of editing in blog. Also, he mentioned about the durability of the blog online. His interview supports the conclusions of Liu and Yuan (2001).

② Collaboration

Interestingly, there was an interview that talked about another effectiveness of using a blog. The interview below interview is with a student who claimed that the blog was useful because of its' convenient communication and collaboration with others for gaining new ideas about his writing.
"I am getting better at blogging. It is surely different than writing on paper. Writing on a weblog is useful when I need to quickly come up with an idea. Most of all, when exchange entries with my friends on blogs, I come up with new ideas. Not only that, but when I'm stuck with an idea, my blogger friends help me to generate new ideas. That's why writing on the blog is intriguing. Also, it helps me improving my writing skills."

"Writing is a hard job. When I need to write, I am under stress to come up with my opinion. On weblogs, I can converse with my partner and get some ideas through the discussion with my friend even it is not related to writing ideas."

This student mentioned that blogs help generating new ideas and that the interaction with other friends helped to improve his writing skills which is related to usefulness of scaffolding. In the perspective of constructivism, a weblog is a media that can assist learning.

③ Novel technology

The following interview is with a student who stated that a blog was useful because it helped him learn new technology skills.

"I like blogging because it helps me get used to computer work. Actually, I'm not good at using technology. Sometimes I am frightened using new technology. In the future, it will be important to know how to use the computer efficiently. It will be even more important if I will continue my future education. I had past problems concerning computer skills."

"I am not good at using computer because I have some fobia of technology. I am afraid of using highend technology such as weblog. However, blogging is a novel tool for me and it gives a pride of using new technology. I boast that I can use new technology."

These interview scripts indicate that using computers effectively will be important in the future as more people became computer literate.

(2) Negative Aspects of Using Weblogs

The results of the data analysis of the interview on students' perceptions revealed also that there were things that the students did not like: lack of privacy or anonymity and
being easily distracted while using the computer. Among the numerous interviews, there were four students felt negatively about using weblogs.

① Lack of anonymity

Although scholars emphasize the effectiveness of blogs in the classroom environment, and even though some students enjoy using blogs to help their learning, there are students who perceive blogs negatively because of its lack of anonymity. The following excerpt is taken from the interview with a student who complained about the lack of anonymity:

“That [Using blog] was a great idea. But I’m not so happy because anyone can see what I wrote on the web. Even though I’m a relatively good writer, the fact that others are going to watch me makes me feel incredibly nervous.”

“When composing in weblogs, I don’t want to reveal who I am because my writing is my story for myself. Actually I want hide my secret part of my life.”

The possible explanation for this students’ comment in preferring anonymity suggests that some students enjoy writing on blogs because they can receive comments quickly, but some students perceive that as a burden to the quality of their work. To be more specific, it is possible to assume that the student did not want his work to be seen by others because it was too private to share or that he was worried that his readers would embarrass him over his writing mistakes.

② Being easily distracted

There were other cases where students perceive blogs negatively because the computer distracted them from doing other writing activities. The following excerpt is part of an interview taken from a student who commented about the distraction of blogging:

“Writing essays on computers have advantages compared to writing with pencil because I can study on the internet. However, when I’m done with my assignment, I would rather read a book and I would prefer to write an essay privately in a room without a computer because it allows more attentive atmosphere for my writing.”

“I like blogging but it causes me some troubles that come from the lack of attention,
specifically generating writing ideas. During constructing ideas I attempted to do games."

Sessums (2008), director for distance education in the University of Florida’s College of Education, claimed that social media tools, such as blogs, can be a great tool for teaching and learning new material, but they can also distract students from the material they are trying to learn. The student in the above interview mentions about a similar problem. Many students can be distracted by social networking sites like Twitter, Facebook, or Myspace so that they concentrate more on them rather than their weblog writing.

V. SUMMARY AND PEDAGOGICAL IMPLICATIONS

For both collaboration weblogs and non-collaboration weblogs, the results of ANCOVA showed that significant differences were found in certain measures. With respect to the results of fluency, statistical analysis revealed that there were significant differences between the two different modes, collaboration weblogs and non-collaboration weblogs, in terms of total words \( (F = 1.438, \ p = .044 ) \) and T-units \( (F = 3.789, \ p = .036) \). This implies that the students made significant progress in their writing, specifically in the length of writing in collaboration weblogs.

As for accuracy, there were no significant differences in terms of EFT and EFC, between the two modes. These results indicate that it was difficult for collaboration weblog and non-collaboration weblog students to become accurate writers in such a short period of time. It was likely that one semester was not a sufficient length of time to produce significant differences in accuracy. This finding was similar to Prater and Bermudez (1993) who found that one month was not a sufficient length of time to make progress in overall quality of writing. However, Tomita (1990) found an interesting result in terms of accuracy, suggesting that third-year students committed more errors because they tried to write longer and more complex sentences.

Regarding complexity, contrary to the expectation, there were no significant differences in collaboration and non-collaboration weblogs. The possible factors that led to this result can be explained as follow: It would have been difficult for the students to acquire the ability to write more grammatically and lexically complex sentences in the short period of one semester; although each student improved in their post-writing scores to a certain degree, the results did not reach significant differences between pre-writing and post-writing because complexity did not improve strikingly between pre-treatment writing.
and post-treatment writings.

Overall, it would not be difficult to conclude that the collaboration weblog mode would be better than the non-collaboration weblog mode in words and T-units.

There were more positive opinions about working with weblogs in collaboration groups than non-collaboration groups. Students were left with positive opinions about collaboration groups because of the following reasons: being able to share ideas with partners, being able to use weblogs in their writing, being able to receive assistance from their peers, being able to develop ideas with friends, and being able to create work together in a collaborative environment.

Non-collaboration group showed a couple of advantages such as correcting their writing easily and gathering their writing ideas for their blogs. However, some felt the difficulty of technology was pointed out as a disadvantage of weblog.

The students’ interview about weblogs showed the advantages and disadvantages of using weblogs for improving writing. One of the advantages using weblogs was the ease of editing and revising essays. Unlike paper, writing using weblogs are easy because of the quick typing and modification. Some studies (Hertel, 2003; Jae Kyung Kim, 2005, Liu, & Yuan, 2001; Sullivan & Pratt, 1996; Warschauer, 1996b) supported the idea that there is a relationship between newly advanced technology and students’ writing performance.

Another advantage of using weblogs was that weblogs allowed students to communicate with other students easily, so that they could exchange ideas and collaborate together. Also, blogs helped students to improve their overall computer skills. So weblogs not only helped students socially but also academically.

There were two disadvantages of using weblogs for improving writing based on the student interviews. One disadvantage was the lack of anonymity. The other one was becoming easily distracted which hindered the writers to pay complete attention to their writing.

The findings of this study brought out several important pedagogical implications in using weblogs. First, collaboration weblog was found to enhance fluency, especially words and T-units. The improvement of writing skills through collaboration provides a more encouraging academic environment for the students. Therefore, encouraging the use of weblogs as a writing tool in the writing classroom could lead to enhance students’ writing quality.

Second, it was found that each group had its own advantages and can serve as a writing medium. As for advantages, a collaboration weblog group is much different from a non-collaboration weblog group in that it can help students share their ideas to complete
their writing. The collaboration weblog that allowed students to gain and develop their writing was regarded as a very effective communication method between writers. The results show that using weblogs as a writing tool can be beneficial and effective for developing writing ideas. These results are consistent with the findings of several researchers (Campbell, 2003; Jae Kyung Kim, 2005; Knoy, Lin, Liu, & Yuan, 2001; Ward, 2004; Wrede, 2003).

Third, based on the findings from the advantages and disadvantages of using weblogs, some guidelines were identified in order to perform the collaboration with more efficiency. The participants should be trained to use technology when blogging to write their ideas, regardless of collaboration weblog writing or non-collaboration weblog writing as a writing tool. In this way, the students would be able to overcome the fear of technology. With respect to privacy concerns, these weblogs could be anonymous and if the students want to keep their posts privately, they can do that through a weblog's security settings.

Overall, the study was justified for using weblogs for collaborative writing. The present study has limitations on generalization of research results because of the small sample size and the context that will not be the same as this study. However, it can be applicable to other contexts depending on degree of similarity (Lincoln & Guba, 1985).

VI. CONCLUSION

The results suggest that collaboration weblog writing is more effective in terms of fluency because the non-collaboration weblog writing did not influence the fluency in the participants' writings as much as the collaboration weblog writing did. However, each weblog group had its own advantages and can serve as an effective writing tool.

The English level of elementary students improved due to various language experiences such as studying abroad and attending an English camp and so on. Therefore, these students require specific English education that suits their levels. In this case, weblogs serve as a supplementary medium for sustaining and enhancing their language ability. Also, it can be legitimate to use weblogs as a language learning tool for elementary students because the Internet penetration of Korea is the highest in the world. Furthermore, the national curriculum of language recommends to use technology in classroom settings for effective language learning.
REFERENCES


Bay, J. (2004). *Blogs as class content and genre*. Paper presented at the annual meeting of the Conference on College Composition and Communication, San Antonio, TX.


Lee, L. (2001). Online interaction: Negotiation of meaning and strategies used among learners of Spanish. ReCALL, 13(2), 232-244.


Effects of Collaborative Writing in Weblogs


Tomita, Y. (1990). T-unit o mochita kokosei no jiyu eisaku bun noryoku no sokutei (Assessing the writing ability of high school students with the use of T-units.) *Step Bulletin, 2*(1), 14-28.


Key words: collaborative writing, weblog, novel technology

Applicable levels: primary and secondary education

Author: Kim, Jae Kyung (Pai Chai University); jkkim@pcu.ac.kr

Received: May 15, 2009
Reviewed: July 30, 2009

English and Content Learning (ECI) has long been the study of elementary English education. It has recently emerged due to the introduction of English immersion. In the past ECI learning experiences, teachers in practice demanded for the provision of an ECI dictionary to support ECI teaching and learning in elementary school settings. This study is an important step towards responding to the need for developing a supporting dictionary for ECI classes. The ECI dictionary development was based on elementary school textbooks with focuses on social studies, math and science. The total number of 1,719 cognitive academic word entries was selected based on a frequency list and expert knowledge. The micro-structure of these entries was piloted and revised reflecting feedback received from teachers with two different approaches to teaching vocabulary. Final structure of cognitive academic entries includes form, structure, content and learning box. The outcome was an extracted list of head words and the dictionary information according to the micro-structure of form, structure, content and learning box. The ECI dictionary will provide teachers who are using any form of ECI with a referential support for target word information, usage and use, learning materials.

* This research was supported by Korea National University of Education Research Fund in 2008.
I. INTRODUCTION

One of major difficulties in English and Content Integrated (ECI) or immersion classes is the imbalance between learner’s cognitive ability and learner’s knowledge of content area vocabulary. ECI learning is one type of Content and Language Integrated Learning (CLIL) practiced in Korea where there is only micro level integration in classroom level without any macro level curriculum support different from European Union CLIL context. Immersion is teaching all or parts of the curriculum in a target language, an extreme version of CLIL which has no integrated curriculum efforts being made either micro or macro level and will require stretching our educational resources. Despite these differences ECI, CLIL and immersion classes face the common imbalance between learner’s cognitive level and his/her knowledge of target vocabulary when content knowledge are taught in a language students are learning. In other words, learners face major challenges in comprehending and expressing their developmentally appropriate and content-appropriate vocabulary in ECI classes. L1 students have acquired 2,000 to 6,000 words when they initially enter school to learn their content areas (Belisle, 1997). L2 students come to ECI classes with very few acquired L2 words. This lack of L2 vocabulary limits learners’ understanding of high level content knowledge and expressing content-related ideas appropriate to their cognitive level. Thus, providing a rich array of content vocabulary to L2 students becomes a critical challenge to ECI teachers. Vocabulary teaching has to be systematic in terms of sequencing and recycling words in content areas. However, this is not an easy task to do for an L2 teacher because ECI teacher must primarily focus on content objectives.

In this paper a basic content vocabulary to cover three entire elementary school disciplinary areas (math, science, social studies) for grades 1-6, was developed to support ECI teachers in their content area teaching by providing key content words and their use in the textbook for the related lessons. For the primary examples in this paper, though, math will be used due to space limit. The dictionary will primarily be a paper-based dictionary with the possibility in mind that the dictionary will serve on-line as well in the near future. This study differs from vocabulary support for imported textbooks from English speaking countries where the words and their usages are directly quoted from Korean textbooks of math, science and social studies developed in the 7th national curriculum.
II. THEORETICAL FRAMEWORK

1. Vocabulary Learning

The process of acquiring words involves apperception, comprehension, intake, integration and output (Paribakht & Weshe, 1996; Gass, 1988). Apperception is learner's noticing new words which suspends her comprehension. Comprehension involves the learners understanding of the new words in a context in the form of comprehensible input (Krashen, 1984). Intake is the learner's familiarity of the new words and his/her attempt to use it in typical and limited situations where they think fit. Integration is the internalization and storing of the new words in their internal vocabulary system so that they can retrieve them efficiently. Output is using the words in their own way for communication. This explains that there is a discrepancy between receptive (passive) vocabulary and expressive (active) vocabulary. This procedural model of vocabulary acquisition can explain that one's passive vocabulary always subsumes one's active vocabulary.

In vocabulary instruction there are two different views regarding how vocabulary is taught and acquired. One view is that words are learned by inferencing the context when they are encountered by learners. In this view new vocabulary is learned incidentally and indirectly by resorting to contextual cues (Duquette & Painchaud, 1996). Krashen professes that new words are best learned from reading where learners can guess words from the rich contexts. The other view is that inferencing vocabulary skill needs a launch pad. In other words, learners need to reach a certain threshold vocabulary level before they can use effective inferencing skills. Until learners hit the threshold level, they need planned and explicit vocabulary instruction.

Guessing new word meaning from context is not always possible due to the variability of contextual information in proportion to a learner's ability. Hu and Nation (2000) attempted to determine the amount of vocabulary needed by a second language learner in order to read with reasonable comprehension. They have looked at how the density of unknown vocabulary and vocabulary size are related in various kinds of texts as shown in the following table:
A Study of Basic Vocabulary for Integrated English Education

Table 1: The Number of Unfamiliar Tokens per 100 Tokens and The Number of Lines of Text Containing One Unfamiliar Word (Hu & Nation, 2000, p. 3)

<table>
<thead>
<tr>
<th>% text coverage</th>
<th>Density of unfamiliar and familiar tokens</th>
<th># of text lines per 1 unfamiliar word</th>
</tr>
</thead>
<tbody>
<tr>
<td>99</td>
<td>1 in 100</td>
<td>10</td>
</tr>
<tr>
<td>98</td>
<td>1 in 50</td>
<td>5</td>
</tr>
<tr>
<td>97</td>
<td>1 in 33</td>
<td>3.3</td>
</tr>
<tr>
<td>96</td>
<td>1 in 25</td>
<td>2.5</td>
</tr>
<tr>
<td>95</td>
<td>1 in 20</td>
<td>2</td>
</tr>
<tr>
<td>90</td>
<td>1 in 10</td>
<td>1</td>
</tr>
<tr>
<td>80</td>
<td>1 in 5</td>
<td>0.5</td>
</tr>
</tbody>
</table>

ECI materials are generally informational rather than social, which means they're not likely to be context rich. The text does not have a story line to follow, and yet the prior information will be critical for the understanding of the following information. The sequencing of math, science and social studies is generally based on the hierarchical system of subject matter rather than a linear storyline. The lack of contextual cues among contents call for decontextualized vocabulary learning as well as contextualized vocabulary learning.

According to Read (2004) which surveys research on second language vocabulary teaching and learning since 1999, the distinction was drawn between incidental and intentional vocabulary learning. Although learners certainly acquire new words incidentally by engaging in various language learning activities, more direct and systematic study of vocabulary is also required among different types of vocabulary learning as follows:

Table 2: Different Types of Vocabulary Learning

<table>
<thead>
<tr>
<th></th>
<th>Explicit</th>
<th>Implicit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned</td>
<td>content words instruction</td>
<td>recycling of words</td>
</tr>
<tr>
<td>Unplanned</td>
<td>error correction</td>
<td>contextual learning</td>
</tr>
</tbody>
</table>

Planned and explicit content-related vocabulary learning will be necessary in addition to incidental and implicit learning. In incidental and implicit learning, learners are encouraged just to get the gist of meaning of new words to understand the text. The vocabulary learning of just getting the gist ends up widening the gap between passive vocabulary
and active vocabulary. If learners are not pushed to use the target words in the context (Swain, 1996), the intakes are not likely to be integrated and used as output.

2. ECI Classes

ECI classes motivate learners because in their content classes they recycle English learners have learned in English classes. Widdowson (1978) emphasized the role of motivation in L2 learning where language learning must lead learners to something they can achieve with the language they learned. ECI classes are primarily holistic, though it doesn't exclude the component learning, in the sense that all communicative competences are included in content learning and classroom activities. Discourse, socio-linguistic and strategic competences as well as linguistic competence (Canale & Swain, 1980) are embedded in such a way that the learning is primarily meaning-driven, communication among learners and teacher is authentic, and activities are interactive and problem-solving.

The advantages of ECI classes are suggested in Halliwell (1992) as follows: First, ECI learning presents English to learners as an integrated part of their content learning process rather than another independent subject to learn. Learners learn language to communicate about content information with teachers and peers, and the language they use, though it may not be fluent, is authentic and highly transferable.

Second, ECI classes push students to produce comprehensible output. In the process learners focus on meaning and undergo deep learning when they have to switch their focus onto form by having problems with retrieval of appropriate words and phrases.

Third, ECI classes provide opportunities for learners to employ high level thinking processes and to facilitate the use of the target language. Instead of relying on memory and understanding, they are encouraged to use their analytic skills, comparative skills and evaluative skills to deal with math, science and social studies problems.

Brewster and Girard (1992) also suggested that the following advantages are found in ECI classes since it can connect language with content. First, they can reinforce learners’ learning of new concepts and vocabulary since they're very likely to recycle these across different subjects. For example, when learners learn colors, shape, size and time in English, they'll appear again and again across learning of math, science and social studies.

Second, different learning strategies can transfer across different subjects. For example, analytic skills in science can transfer to math and social studies, and these very skills are applicable to the concatenation of English. Converting numbers to graphs and interpreting them are essential learning strategies in math, social studies and science.
Learning strategies such as analysis, synthesis and evaluation can be transferred from one subject matter to another.

Third, academic language centered-around English can be recycled in other content areas: telling the time in math, talking about different seasons or living things in science, reading and telling the maps in social studies, singing and chainting and telling stories in music and art.

Discussions illustrated in this section clearly indicate advantages of ECI classes: motivation of learners due to the immediacy of language learning and language use, target language recycling, transfer of learning strategies across language and content classes and across different disciplinary subjects.

On the other hand, immersion, an extreme version of ECI which is being practiced in many corners of Korea especially in private elementary schools, will create more problems than necessary to learn English. It may create social differentiation between immersion students and non-immersion students. It may also accelerate privatization of education which is already a big part of social problems in Korea. Toward the immersion end, different degrees of ECI are necessary steps to follow to fill the gaps between Korean-only classes and English-only classes.

3. English Learner’s Dictionary

Vocabulary learning is very important for the beginning level learners, and the current vocabulary level of 500 words in elementary school English is not at all on par with the word level necessary to learn any content subject in English. Lexical competence is one of the core linguistic competence and without the competence it is hard to carry on a conversation no matter how accurate one’s grammar is. Despite the importance of lexical competence, studies and resources on vocabulary learning have been scarce for language learners to get access (Richards, 2006; Nation, 2001). In Read (2004) there is a discussion of how word frequency counts and information on word meaning from computer corpora can inform the selection of words to be studied. The data driven studies in vocabulary learning enabled developing learner dictionaries, and research evidence was shown on how effectively students can use them to understand the meanings of words.

In this context, English dictionary is an essential resource for learners of English to refer to when they run into unknown words. The information in the dictionary should be accurate and rich with contextual information and examples in use. Learners sometimes opt to use learners’ English dictionary for their language study since it provides useful information such as collocations and corpus-based authentic examples for learners of
English.

Oxford Press was the first dictionary publisher in taking the lead of publishing a learner's English dictionary, Oxford Advanced learner's Dictionary of current English in 1948. Since then, Longman Dictionary of Contemporary English was published in 1978 and Collins COBUILD English Dictionary also saw the light in 1987. Merriam-Webster followed the suit in 2008 by announcing their Learner's English Dictionary. All of these first generation learner's dictionaries are monolingual dictionary in alphabetical order. Looking at the current level of English learners in Korea, we have urgent calls for bilingual learner's dictionaries and make learners' dictionaries more accessible. One such example was Longman Lexicon of Contemporary English published in 1991 which was sorted by the semantic fields rather than the order of alphabets. Longman Language Activator uses a list of key words to network words in a mixed form of thesaurus and semantic network. One can find ecstatic from the basic word happy. One can also find walk with big steps to be better expressed as stride. The Longman Language Activator claiming to be the first production dictionary takes students from a key word or basic idea, e.g. EAT, through the exact words and phrases they need to express themselves accurately and appropriately for each context. However this does not mean that it serves all the levels of thesaurus functions, different senses and their frequency information as on-line wordnet does.

Learner's dictionaries have the following common features (Bejoint, 1994): First, Cowie (1999) indicates that the dictionary uses definition words of 2,000-3,000 from common daily life in a simplified language originated from the list in West & Endicott (1935).

Second, the pride of dictionary is not in the richness of word list but in the depth of explanations and examples of each head word including different use of the head word in different Englishes as shown in the following examples:

lavatory /ˈlævətəri/ noun, pl -ties [count]

1 formal: a room with a toilet and sink In U.S. English, lavatory is most often used for a room in an airplane. ... It may also be used for a room in other kinds of public places. ... In British English, lavatory ... may also be used for a room in a home. ...

learner's permit noun [count] US: a document that allows a person to learn how to drive a car ... called also (Brit) provisional license

limousine ... noun, pl -sines [count]

1: a very large and comfortable car usually driven by a professional driver
A Study of Basic Vocabulary for Integrated English Education

(called a chauffeur)...

2 chiefly US: a vehicle (such as a bus or van) that carries passengers to and from an airport

Third, it lists words in high frequency. It visually marks different ranges of frequency words in different colors.

Fourth, it provides grammatical information such as syntactic information, countability, gradability, collocation information and verbal usage learners need to know.

These four characteristics of learner's dictionary will be the basic building block of the micro-structure of current ECI dictionary under discussion. In addition, learner's dictionary provides extra learning materials in the appendix such as irregular conjugation tables of verbs, definition words list, cultural information (measuring units, monetary units, famous names of people and places).

4. Identifying Technical Vocabulary

The Academic Word List, compiled by Coxhead (2000), consists of 570 word families that are not in the most frequent 2,000 words of English but which occur reasonably frequently over a very wide range of academic texts. The 570 word families were extracted from 3,600,000 running words in four faculty divisions (Arts, Science, Commerce, and Law) which in turn subsided into 28 subject areas. One faculty division has 7 subjects (e.g. Arts-history, linguistics etc.) These 570 words are grouped into ten sublists that reflect word frequency and range. A word like analyze falls into Sublist 1, which contains the most frequent words, while the word adjacent falls into Sublist 10 which includes the least frequent (among this list of high incidence words). The conditions were set for identifying technical words:

Cond.1. not to be the first 1000
Cond.2. one occurrence of the four faculty divisions (range 1)
Cond.3. occur in at least 15 of 28 sub-subjects (range 2)
Cond.4. 100 occurrences of from 3,600,000 running words (frequency)
Cond.5. 10 occurrences in each faculty (dispersion-spread frequency: how evenly a word is spread)

Chung & Nation (2004) compared four different approaches to identifying technical words in an anatomy text. The most successful approach was comparing frequency of occurrence in the specialized text with frequency in a large more general corpus. However it failed to identify words like neck, chest, skin which were also in common usage. It also
could not separate collocates of technical words (superior, posterior, transverse) from technical words. If collocates are included, the accuracy rate is close to 90%. Chung and Nation (2003) used the scale with four levels to identify technical vocabulary in specialized texts: First, Words such as function words that have a meaning that has no relationship with the field of anatomy (e.g. with, itself, directly, early and commonly).

Second, Words that have a meaning that is minimally related to the field of anatomy where they describe the positions, movements or features of the body (e.g. forms, flat, anterior, parts and associated).

Third, Words that have a meaning that is closely related to the field of anatomy. They refer to parts, structures or functions of the body, such as the regions of the body and systems of the body. Such words are also used in general language (e.g. chest, ribs, muscles, bony and shoulder).

Fourth, Words that have a meaning specific to the field of anatomy and are not likely to be known in general language. In other words, they refer to structures and functions of the body, and do not have general subject uses (e.g. hematopoietic, vertebrae, trachea, mammary and thorax).

III. METHODOLOGY

This paper hires both computer-based analysis tools and classroom observation tools for its instruments. To discover common basic academic vocabulary being used in different content areas, an elementary school textbook corpus was created to tabulate frequency of words and their context being used. The elementary school textbook corpus consists of a total of 76 volumes of books (12 textbooks, 12 activity books and 12 teacher’s guides for math; eight textbooks, eight experimentation and observation books and eight teacher’s guides; eight textbooks for Seoul area and eight teacher’s guides for social studies). They were scanned and optically character-recognized in text (ascii) format to be input to other analysis tools. Head words for the ECI lexicon were selected based on how frequent the words are and how essential the words are to understand the content of a lesson.

1. KAIST Morphology Analyzer (KMA)

KMA is a Korean morphology analyzer which was developed with the grant endowed by Ministry of Science and Technology in 2001. It tested its accuracy against 70 million
Korean words corpus. KMA analyzes words using two-level model which includes shift action keeping the morphology rules and check action to see if the altered form of word is listed in the dictionary. It was employed to lemmatize and count frequencies of content words appeared in Korean textbook corpus. KMA processes an input text, 10-ul 5-lo nanu-ess-ta 'divided 10 by 5', into a head word nanu-ta 'divide'. KMA first strips off such particles as -ul 'accusative marker' and -lo 'instrumental marker', and it also decomposes lemma nanu- 'divide', -ess- 'past tense marker' and -ta 'declarative marker'. Arabic numerals are not listed in the dictionary as lemma forms and thus the only lemma taken to be a head word is nanu-ta. After extracting lemma words, KMA counts lemma words to tabulate the frequency and show it along with the lemma. For example, the following procedure illustrates step-by-step analysis:

(1) Analysis Steps

Decatenating words: Cheolsooga/chaekul 'book'/ilkessta 'read'
Morphology Analysis: Cheolsoo/ga/chaek 'book'/ul ACC/ilk 'read'/ess PAST/ta DECL
Lemma with frequency count: hakkyo 'school' + ey LOC(122)
Lemma with frequency count: hakkyo 'school'(537)

2. Natural Language Processing Tools (NLPT)

NLPT is primarily an English analysis tool using CLAWS (the Constituent Likelihood Automatic Word-tagging System) tag set. It serves multi-purpose analytic tools for frequency counter, concordancer, collocation extractor, tagger, aggregator for the same tagger, sentence counter, grammar pattern extractor and file merger according to the developer Y-H. Lee (2007). All the functions except the tagger work for Korean corpus as well. NLPT was used in this research to extract the contextual information of each selected head word in the corpus. Concordancer function of NLPT helps understand the use of head words and their contextual meaning. The results are useful to generate example sentences of a given head word for ECI basic vocabulary dictionary. Examples of head words, key words and their context are illustrated in the following key words in context (KWIC):
Developing dictionary information for integrated language and content learning can be proceduralized as follows. First, a textbook corpus was created by scanning and optically character-recognizing math, social studies and science textbooks and teacher’s guides. Second, a frequency list was created based on extracted list of words by KAIST morpheme analyzer on the corpus. Third, key content words were extracted from the list. Fourth, a list of head words was created based on frequency and usability. Fifth, collocations, phrasal verbs and examplary uses were surveyed and investigated not only in the corpus but also available English textbooks on-line. Sixth, dictionary information and conventions were created and got cross-checked by content experts and teachers.

3. Classroom Observation

The purpose of classroom observation is to see how the teachers interact with students in their ECI classes. The classroom activities are observed as non-participant observer and a log of classroom observation was kept. Two classes of grade 4 being observed were private elementary school math classes in Seoul given in ECI instruction. Two teachers were intentionally selected due to their differences in vocabulary teaching styles. One female teacher with 10 years of teaching experiences prefer an explicit vocabulary teaching prior to the math teaching while the other female teacher with 20 years of teaching experiences prefer implicit vocabulary teaching in which the vocabulary teaching was intertwined with content learning. Each of these two classes has 32 students in a class.

The following considerations were made for the observation. Focus on how new words
are taught in the class. The researcher tried to step back and observe with an almost "empty" mind, i.e., "empty of the prejudices." This was not as easy as it said, but staying in neutral terms helped record the class as objectively as possible.

Focus on the class as a whole to record every interaction related to vocabulary teaching between the teacher and the class to find out what patterns and subpatterns seem to take place.

Focus also on the nonverbal behavior of the teacher: does he/she move around, make contact by proximity [nearness], with individual students mity roups of students? How does the teacher enact his/her relationships with students?

Classroom dynamics tend to be shaped by "critical incidents" which engage our emotions as well as our minds. The observer paid particular attention to such incidents and write them down in descriptive manner.

IV. Preliminary Result

A vocabulary list was selected based on frequency and content value of given word(s). The total number of types were 4,112 for math, 13,465 for social studies and 6,684 for science. Once KAIST morphology analyzer ran on the types list and reduced them to lemmas, for example, geori 'distance' + lago QUOTATIVE, geori 'distance' + lul ACCUSATIVE, geori 'distance' + ey LOCATIVE, geori 'distance' + wa COMMITTATIVE, geori 'distance' + up GENITIVE being reduced to geori 'distance' and yeolli 'open' + nun RELATIVE, yeolli 'open' + nun PRESENT + ta DECLARATIVE, yeolli 'open' + nun PRESENT + ta DECLARATIVE + nun RELATIVE, yeolli 'open' + sup FOMAL + ta DECLARATIVE, yeolli 'open' + eo CONTINUATIVE, yeolli 'open' + ess PAST, yeolli 'open' + umyeo AND, yeolli 'open' + un RELATIVE being reduced to yeollita 'open'. The result was 908 words for math, 4,267 words for social studies and 922 words for science.

1. Frequency List

Once lemmas are extracted, a frequency list was created for the list of lemmas run on the corpus. The following list shows a frequency list from high frequency word to low frequency word in math corpus as an example.

As national curriculum for content subjects has changed into bringing in more life-related topics in teaching new concepts to students, academic content tend to use
many general vocabulary as well as academic vocabulary. The above math list of frequency list also includes a few general vocabulary to be excluded from the head word list as marked by the asterisk.

<table>
<thead>
<tr>
<th>Words</th>
<th>Freq</th>
<th>Frequency (% out of total words)</th>
<th>Words</th>
<th>Freq</th>
<th>Frequency (% out of total words)</th>
</tr>
</thead>
<tbody>
<tr>
<td>값</td>
<td>26</td>
<td>0.2171</td>
<td>구하다</td>
<td>18</td>
<td>0.1503</td>
</tr>
<tr>
<td>그림</td>
<td>25</td>
<td>0.20875</td>
<td>남다</td>
<td>18</td>
<td>0.1503</td>
</tr>
<tr>
<td>*보다</td>
<td>25</td>
<td>0.20875</td>
<td>도형</td>
<td>18</td>
<td>0.1503</td>
</tr>
<tr>
<td>개</td>
<td>24</td>
<td>0.2004</td>
<td>세종이</td>
<td>18</td>
<td>0.1503</td>
</tr>
<tr>
<td>수</td>
<td>24</td>
<td>0.2004</td>
<td>숫자</td>
<td>18</td>
<td>0.1503</td>
</tr>
<tr>
<td>* mudança</td>
<td>23</td>
<td>0.19205</td>
<td>시</td>
<td>18</td>
<td>0.1503</td>
</tr>
<tr>
<td>급</td>
<td>23</td>
<td>0.19205</td>
<td>봉수</td>
<td>17</td>
<td>0.14195</td>
</tr>
<tr>
<td>*그릇</td>
<td>23</td>
<td>0.19205</td>
<td>찾다</td>
<td>17</td>
<td>0.14195</td>
</tr>
<tr>
<td>나누다</td>
<td>21</td>
<td>0.17535</td>
<td>늘다</td>
<td>16</td>
<td>0.1336</td>
</tr>
<tr>
<td>*반듭다</td>
<td>21</td>
<td>0.17535</td>
<td>다각형</td>
<td>16</td>
<td>0.1336</td>
</tr>
<tr>
<td>*사랑</td>
<td>21</td>
<td>0.17535</td>
<td>장치다</td>
<td>16</td>
<td>0.1336</td>
</tr>
<tr>
<td>*나타나다</td>
<td>20</td>
<td>0.167</td>
<td>표</td>
<td>16</td>
<td>0.1336</td>
</tr>
<tr>
<td>*많다</td>
<td>20</td>
<td>0.167</td>
<td>면</td>
<td>15</td>
<td>0.12525</td>
</tr>
<tr>
<td>분여다</td>
<td>20</td>
<td>0.167</td>
<td>합</td>
<td>15</td>
<td>0.12525</td>
</tr>
</tbody>
</table>

2. Content Head Word List

Content head word list is created from the list of lemmatized words. This process is done manually since it requires content expert knowledge to distinguish academic words from general words. Three different levels of content-relevance has been noted: content-specific, ambivalent, general. Content-specific words were obviously selected for the head word list and general words were excluded. Ambivalent words such as nanuta ‘divide’ in division of numbers were included.

A sample of head word list can be found as follows:
2. Micro-structure of ECI Dictionary

ECI Dictionary was originally conceptualized as a Korean-English dictionary and listed by the order of Korean alphabet. Each content word item includes its English counterpart, example sentences, visual cues if any, and collocations. A sample of dictionary information can be found in Table 6.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>ECI (Math) Dictionary Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocabulary</td>
<td>Content</td>
</tr>
<tr>
<td>너비 (Width)</td>
<td>Example Sentences(예문)</td>
</tr>
<tr>
<td></td>
<td>• Measure the width of your table(desk).</td>
</tr>
<tr>
<td></td>
<td>• Measure the width of the front door.</td>
</tr>
<tr>
<td></td>
<td>• Compare your results for the length and width of the desk.</td>
</tr>
<tr>
<td></td>
<td>Collocation(연어)</td>
</tr>
<tr>
<td></td>
<td>• Find the number of hand units for the entire width.</td>
</tr>
<tr>
<td></td>
<td>• Shrink the height to be square with the entire width.</td>
</tr>
<tr>
<td>각 (Angle)</td>
<td>Example Sentences(예문)</td>
</tr>
<tr>
<td></td>
<td>• Measure[calculate] the angle. • Bisect the given angle.</td>
</tr>
</tbody>
</table>
V. PILOT AND REVISION

1. Pilot and Feedback

The dictionary was given to two teachers teaching grade 4 of M private elementary school in Seoul where they had been teaching ECI classes. The content target was to identify and draw geometric shapes, angles and other figures, real world application of concepts, review and practice of math concepts (terminology). The learning objectives were that students would be able to identify, draw and write the name of these shapes by using shape flashcards with a partner, and going on a geometry scavenger hunt after reviewing different geometric figures and terms.

The dictionary was given to the math ECI teachers in manuscript form. After using the dictionary they gave feedback to improve the dictionary. The two teachers were selected on the basis of their differences in teaching new content words.

The differences in teaching ECI classes are: (1) Teacher A introduced new content words and have students learn the concepts before they go into main math activities, and (2) teacher B gave math instructions without explicit introduction of new content words and instead have students be exposed to new words incidentally. This contrast in teaching is a typical contrast in vocabulary teaching approaches. It was a good measure to see how the dictionary would function in two different teaching approaches.

Teacher A [explicit vocabulary teaching]: On the blackboard she wrote the title of the class and explained students the objectives of the class explicitly. Under the title of the class she listed new words acute angle, right angle, obtuse angle, cube, pentagon, triangle, perpendicular lines that are related figures in 4th grade to appear in today's
lesson. Apparently she studied these words referring to the ECI dictionary before she came to the class. She referred to the dictionary from time to time during the class. She illustrated angle, acute angle, rectangular and cube to help students understand the new words. She told students that they were going to guess the shape the teacher was drawing. Students were asked to raise their hand when they knew the shape. On a blank white board, she drew geometric figure that students were learning about. She took her time and stopped every so often to call on a student. When a student guessed correctly, she finished the shape and discussed its characteristics leading into the main part of the class (how many sides, how many vertices, whether or not it is three dimensional, etc.).

When students finished the exercise, teacher passed out the Geometry Scavenger Hunt sheets. She told students that they would get a chance to find the shapes they were learning about in real life. She let students walk around the classroom to find these geometric figures. She gave students a sticker or some other small reward if they found all of the shapes and drew a picture of their favorite one they found on the back of the paper.

Teacher B [implicit vocabulary teaching]: She told students that they were going to play a game with a partner. She passed out the Geometry Cards sheets, a pair of scissors, mini whiteboards, dry-erase markers and paper towels to pairs. She asked students to cut out their cards and write the names of the objects they see directly on the back of the cards with pencil. Students put a list of the object names on the board for students to choose from. After students finished, they reviewed the shapes as a whole class so that students made sure they had the correct answers. The procedure went as follows:

1. Student 1 will select a card without showing Student 2.
2. Student 1 will draw the shape on the white board, and Student 2 will try to guess what it is.
3. If Student 2 cannot guess after two tries, Student 1 will show them the answer.
4. Student 2 will then choose a card to draw, and Student 1 will try to guess what it is.
5. Students take turns until all of the cards have been guessed.

While doing the activity, teacher walked around the classroom, answered students' questions and demonstrated them how to pronounce the words when students had troubles. When she needed, she consulted the dictionary by carrying in her hand during the classroom walk. After the activity was done, she walked around the classroom with
some wordless geometry cards and randomly asked students what a particular shape was. Then asked to tell other students the characteristics of the shape.

(1) Feedback from teachers

Teacher A commented, "From my point of view, the micro-structure of an ECI dictionary should be a network of knowledge and concepts, because the entries included in an alphabetical list enriches the user with lots of information about the word. Here one finds not only the explanation or translation of a word, but also typical expressions in which the word is used, and different contexts in which the word occurs in different meanings, for instance. Thus ECI dictionary should put more emphasis on learning materials which link all the different academic aspects of a word entry."

Teacher B commented, "From my point of view, an ECI dictionary should more like a bi-directional list of words both from English to Korean and from Korean to English, because one is likely to search for an English word as well as a Korean word. All the lexical entries should be listed in alphabetical order in both English and Korean. The dictionary should include the target language counterpart, the structural information of each individual lexical entry, English and Korean definition of each entry, examples of sentences and collocations and academic content related to the entry."

2. Revision

After analyzing observations and feedback from teachers, ECI dictionary needs revisions in almost all the areas of micro fields of each lexical item. In addition, it requires creation of a new subfield to provide information on learning box.

1) Revised Dictionary Structure

Revised dictionary structure was changed into the following micro-structure taking into consideration of observation and teacher's feedback:

**FORM:**
- spelling, deletion of phonetic transcription, bidirectional Korean and English

**STRUCTURE:**
- part of speech, construction of words
CONTENT:
English definition, related words, examples in both Korean and English

LEARNING BOX:
real examples with visual cues in both English and Korean

Form component (head word component) is directly connected to three sub-fields, structure, content and learning box, as indicated by arrowed lines and these three sub-fields are both connected to each other and semi-independent of each other as indicated by arrowed dotted lines.

Sample entries of micro-structure of revised ECI dictionary are given as follows:

M
* acute angle

행사 예각
복수형 acute angles

<N> Acute angle is an angle that measures between 0 and 90 degrees.

30°, 60°, 89° etc. are all acute angles. 30도, 60도, 89도 등은 모두 예각이다.

참고
right angle 직각
obtuse angle 둔각
Learning Box

An acute angle measures between 0° and 90°. They are less than a right angle.
예각은 0°에서 90° 사이에서 측정이 된다. 예각은 직각보다 작다.

Learning Box

- **acute triangle**

\(<N>\) Acute Triangle is a triangle with its angles less than 90 degrees.
예각삼각형은 세 개각 모두 90도보다 작다.

Learning Box

\(\text{Acute triangles} \) have three acute angles.
예각삼각형은 세 개의 예각을 가지고 있다.

As illustrated above the micro-structure of dictionary contains form, structure, content and learning box which supplies reference learning information. The forms are listed bi-directionally both English and Korean. The structure contains the grammatical information of the head word such as part of speech and inflection. The content includes English definition, related words, examples in both Korean and English. The learning box contains real examples with visual cues in both English and Korean.

This ECI dictionary contains a list of 1,719 cognitive academic word entries and their counterpart translations that should cover fields of science, social studies and math in elementary schools.
A Study of Basic Vocabulary for Integrated English Education

<table>
<thead>
<tr>
<th>Types</th>
<th>Subjects</th>
<th>Social Studies</th>
<th>Math</th>
<th>Science</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Words</td>
<td>4,267</td>
<td>908</td>
<td>922</td>
<td></td>
<td>6,097</td>
</tr>
<tr>
<td>Content Words (%)</td>
<td>660 (15.5%)</td>
<td>590 (65%)</td>
<td>469 (50.8%)</td>
<td>1,719</td>
<td></td>
</tr>
</tbody>
</table>

The number of content words out of total words in the textbooks are presented in Table 7. It is noted that math contains relatively higher ratio of cognitive academic language compared to social studies and science. Understandably social studies contain highest ratio of general vocabulary in the textbook along with only about 15% of cognitive academic words.

VI. CONCLUSION

Dictionaries are didactic books in use as consultation instruments in both self-teaching and instructional situations. They are composed of an ordered word list to come up with linguistic units which reflect a dual organization, the macro-structure which covers front and back matter and overall appearance structure, and the micro-structure that refers to the content of each word list. The learner's dictionary uses a limited number of words to explain head words, and grammatical information is generally offered. It also contains referential examples and learning materials for the learners of English. The ECI dictionary follows the same structure and types of information, but with more academic content-oriented words and thus more practical examples used in content courses and learning materials.

The ECI dictionary entries include both English and Korean entries, structural information and examples, dictionary definitions in English, example sentences as appeared in elementary school textbooks and rendering words. It also includes and amplifies the learning materials section which both teachers strongly recommended. The knowledge of the most high-incidence technical words in English can significantly boost Korean student's comprehension level of school-based reading material in ECI classes.

The ECI dictionary in fact contains many more difficult words than the national English curriculum lists for elementary schools which makes ECI classes very challenging to elementary school students. As mentioned earlier, current 500 word level is far insufficient than what's necessary for students to understand academic content words.
There are questions as to whether students are able to understand these words, and ECI classes are efficient with using difficult academic words. These questions are more related to the decisions to make whether or not a school or a class will adopt ECI policy in their instruction. The decisions were made outside the context of this dictionary development. This paper, however, has illustrated a dictionary development in order to support the efforts in giving ECI classes.

The discussion in this paper has focused on eliciting the content-specific (technical) head word list and the micro-structure of each dictionary item and the dictionary information to be useful to both learning and instructional settings. Looking at the level of vocabulary students currently engage in ECI classes, it is highly likely that they encounter unknown content-specific words to impede the understanding of the content. The ECI dictionary will be available to both students and teachers in this context by providing information about the head word with real example sentences they have in their textbooks.

A further research on this area is called for the other disciplinary subjects and different levels of schools. It is also necessary to do experimental studies for the effects of the dictionary which still remain to be hypothetical. Another important research to be done is the macro-structure of ECI dictionaries whether or not different disciplinary subjects require same or different structure and what the reasons are.
REFERENCES


Key words: vocabulary learning, CBI, dictionary
Applicable levels: elementary

Author: Kim, Jeong-ryeol (Korea National Univ. of Education) jrkim@knue.ac.kr

Received: May 15, 2009
Reviewed: July 30, 2009
A Study on Voice Recordings and Feedback through BBS in Teaching and Learning Pronunciation

Seo Young Yoon (Hankuk University of Foreign Studies)
Chung-Hyun Lee (Hankuk University of Foreign Studies)


The purposes of this study are: to investigate the university students’ perspectives on using voice recordings and bulletin board system (BBS) and their perspectives on feedback in teaching and learning pronunciation. 128 university students in participated in 16-week classes. The data for this research were collected throughout 2 semesters. Data sources included weekly voice recordings, tag-line critiques on BBS, weekly journal entries, and the questionnaire. The results are as follows: 1) The majority of learners were interested in and all were satisfied with using multimedia; 2) the learners considered using multimedia and giving and receiving feedback to be positive; 3) the learners found individual work interaction to be difficult yet helpful multimedia resources were considered neither highly difficult nor helpful; 4) ‘Th,’ ‘R,’ ‘intonation expanding,’ ‘L’ and ‘authentic speech’ were considered to be difficult pronunciation features; 5) The learner perspectives on difficult pronunciation features displayed a pattern of high usefulness followed by improvement and low value in easiness, and activities with suprasegmental features were more positive than segmental features; and 6) the only area showing significant difference between gender was in motivation for voice recording where the females responded more positively than males. Therefore, based on the findings, it seems that using voice recordings and promoting interaction through BBS can help learners in learning English pronunciation.

* This work was supported by the 2009 Research Fund of Hankuk University of Foreign Studies.
I. INTRODUCTION

With the change in focus of English education—improving communicative performance, current university students' problem in pronunciation is no longer the same as that of a decade ago. English language instruction has historically focused on the grammatical accuracy. However, with the rise of Communicative Language Teaching, the focus in language instruction has shifted to meaning and communicative fluency. Pronunciation instruction, traditionally focused on the accurate production of segmental features, has also come to focus on suprasegmental features of spoken discourse as well.

For learners of English as foreign language, it no longer suffices to produce spoken discourse that is grammatically and segmentally accurate, but it is desirable to be able to produce acceptable spoken discourse that does not deviate too far from understandable speech pattern of English in communicative situations that the learners may face. Teaching pronunciation, therefore, needs to take on a different perspective and method to meet the current needs of the learners and to promote realistic learner to learner interaction, especially in a large classroom setting. However, in a large university classroom setting, opportunities for interaction are limited. Such lack of interaction can become an obstacle in learning pronunciation due to inadequate exposure and restricted chances to produce speech sample.

Using multimedia can provide interactive environment that can extend the class to online community where the learners can utilize varied learning strategies and resources to meet the individual need by allowing degrees of control over level, pace, feedback types, and etc (Lee, 2006). It also can support native speaker teachers with variety of resources and non-native speaker teachers with appropriate multimedia contents that alleviate possible burden in teaching English pronunciation. Bulletin Board System (BBS), voice recordings, audio samples, etc were used in this study to provide interaction and opportunities for effective learning of English pronunciation. Therefore, the purposes of this study are two-folded: to investigate the university students' perspectives on using voice recordings and their perspectives on using BBS and to examine learner perspectives in relation to feedback in teaching and learning pronunciation.
II. LITERATURE REVIEW

1. Teaching Pronunciation

Problems in teaching and learning pronunciation have been addressed by a number of researchers before, such as Munro and Derwing (2000, 2001), Cook (2000), Derwing and Munro (2005), Gatbonton, Trofimovich, and Magid (2005), Lim (2001) and others. Different languages have different speech patterns and pronunciation rules and improper application of speech patterns pronunciation rules to a target language will inevitably result in sounding unnatural or nonstandard to the native listener of the language. Although there are differing views on whether a learner in adulthood who has passed the critical period for language acquisition can indeed learn to produce native-like speech in second or foreign languages, it is accepted in general that L2 learner can indeed learn to produce intelligible and comprehensible language.

Producing such spoken discourse is a desirable goal in teaching and learning pronunciation. In order to achieve the goal, scholars have looked into various factors of pronunciation. In traditional pronunciation classrooms, segmental features have been taught and practiced; however, it has come to the attention of L2 researchers in the last 25 years that in communicative situations, comprehensible discourse involves more than just segmental features in regards to pronunciation (Munro & Derwing, 2001). In turn, the goal of pronunciation in teaching English has shifted from segmental drills to communicative production of language addressing suprasegmental features such as intonation, reduction, etc. Some have argue that the superiority of suprasegmental features have not been scientifically proven and display skepticism on whether suprasegmental features are learnable due to varying factors such as context and pitch shifts (Levis, 2005). In order to address both segmental and suprasegmental features of pronunciation, a balance between segmental features of individual sounds and suprasegmental feature of English language is needed in teaching pronunciation (Min & Pak, 2007). In this study, both segmental and suprasegmental features are addressed in order to promote a balanced teaching and learning of English pronunciation.

2. Multimedia Assisted Language Learning and Interaction

With the distribution of computers and multimedia technology, the use of multimedia for language instruction has been appraised to be effective and found to be useful. Multimedia cannot be a substitute for the teacher; however, it can serve to assist teachers
in positive ways so that appropriate attention and instruction can be provided for the learners. Lee (1998) states that computers can be used in humanistic way which responds to the needs of the learners. It not only is learner-centered, but also promotes individualized learning through helping learners to be consciously aware of what they can or cannot do (Cook, 1985). In addition, it can interact with individuals, groups and teachers, providing both individualized interaction as well as group interaction that can be controlled by the teacher. Lee (1998) categorized the possible interaction patterns using computers in classroom as seen in Figure 1.

According to Figure 1, 5 modes of interaction patterns are available when using computers in classrooms. Mode A is individual mode where learners interact individually with the computer while the teacher interacts with individual learners with specific needs. In mode B and C, learners collaboratively interact with each other in either pairs or in groups. When competitive and collaborative group interaction is taking place, mode D can be used to promote interaction. Finally, in mode E, the computer is used to assist the teachers and learners as presentation method in the traditional classroom (Lee, 1998).

In order to provide variety of interaction patterns to the learners, the classroom lectures were given in mode E whereas voice recordings were used for mode A and BBS was used to promote mode A, B and C.
3. Voice Recordings

Regarding using voice recording in English pronunciation classroom, Walker (2005) provides the following framework: 1) The text to be recorded should be integrated to the rest of the language practice dealt with in class; 2) the learners must be familiar with the text before recording; 3) the length of the text should be no longer than 2 minutes and appropriate for the target learners; 4) cooperative learning should be promoted before and during recording. In his research, voice recordings were submitted to the teacher for grading. However, in this study, voice recordings are not only submitted to the teacher, but are made available to the peers as well.

Neri, Cucchiarini, Strik, and Boves (2002) claim that learning pronunciation is influenced by variables such as a large amount of accessible input, peer comparable output with practice, and corrective feedback from peers and native as well as nonnative teachers. Considering the availability of current media technology to Korean university learners, voice recording technology was used in order to enable peer and teacher feedback as well as interaction that Neri et al have suggested. Moreover, voice recording is a useful tool for three main reasons in pronunciation learning and teaching. First is to provide learners with the opportunities of individual and repeated practice in their own comfort zone or non-threatening environment. Second is to provide a chance for output that can be evaluated by many, especially in a large language classroom where it is nearly impossible to get individualized attention. The last is for developing awareness for pronunciation through giving and receiving corrective feedback.

4. BBS

In a language classroom with a large number of learners, interaction between teacher and learners as well as between learners to learners are limited if not nonexistent. To provide the opportunities for interaction as well as motivation for practice, a class BBS was set up where the learners can upload their voice recording files and give peer feedback in small groups utilizing the tag-reply function provided. While suggesting the framework for using voice recording in teaching and learning pronunciation, Walker (2002) writes, “by explicitly pushing learners to work together when producing their recordings, the technique encourages adjustment in pronunciation and allows for peer feedback. The recording also offers learners a non-threatening environment in which to practice meaningful tasks.” In this study, voice recording activity provides the possibility for the learners to work independently in non-threatening environments, but in contrast, the class
BBS is used to offer an environment where learners are explicitly pushed for cooperative work through to giving and receiving peer feedback.

III. METHOD

1. Research Questions

This study is designed to investigate the university learners' perspectives on using voice recordings and BBS and learner perspectives in relation to feedback in pronunciation classes. The research questions for this study are as follows: 1) What are the learners' perspectives on the use of multimedia in English pronunciation classes? 2) What are the learners' perspectives on the use of multimedia and feedback? 3) What are the learner perceived difficulties and helpfulness of using multimedia in pronunciation classes? 4) Which pronunciation activities do the learners find to be difficult? 5) What are the learners' perspectives on the pronunciation activities that they found to be difficult? and 6) Is there a difference between gender in terms of their responses on the five research questions stated above?

2. Participants and Data Collection Procedures

The participants consisted of 128 Korean university students majoring in non-English related fields. 54 were female learners and 74 were male learners. The school years varied since the class was opened to all years as an elective course. There were 59 freshmen, 26 sophomores, 21 juniors, and 22 seniors as seen in Table 1.

<table>
<thead>
<tr>
<th>[Table 1] Participants</th>
<th>Gender</th>
<th>Academic years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Frequency</td>
<td>54</td>
<td>74</td>
</tr>
<tr>
<td>%</td>
<td>57.8</td>
<td>42.2</td>
</tr>
</tbody>
</table>

The learners participated in a 2 credit class taught by one of the researchers where they met once a week for two hours for 16 weeks. The class was offered every semester as an elective and the data was collected throughout 2 semesters. During each semester, the topics listed in Table 2 were covered in the class and the textbook used was
American Accent Training by Ann Cook (2000) in both Korean and English. The textbook provided 5 audio CDs containing recordings of the contents of the book as well as samples for the practice passages.

A combination of qualitative and quantitative data were gathered in order to obtain appropriate data for this study. Data sources include classroom observation, weekly voice recordings, tag-line replies on the BBS, weekly journal entries, and a questionnaire.

The learners were put into small groups in BBS where each group selected a leader whose responsibilities were to remind the group members to upload their recordings and give peer feedback before the set deadline, to promote interaction within the group, and to notify the teacher if one or more group members fail to participate for more than two weeks. In order to promote clear understanding and to reduce technical problems, on the first day of the class, the learners were given a brief explanation and short training on how to use BBS and make voice recordings, how to give peer feedback, what to look for when giving and receiving peer feedback, and what to write on the weekly journals.

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Pronunciation features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction: Stresses and speed</td>
</tr>
<tr>
<td>Week 2</td>
<td>Thought groups and prominence</td>
</tr>
<tr>
<td>Week 3</td>
<td>Intonation: compound word vs. descriptive phrases</td>
</tr>
<tr>
<td>Week 4</td>
<td>Intonation: phrases &amp; paragraphs</td>
</tr>
<tr>
<td>Week 5</td>
<td>Building intonation</td>
</tr>
<tr>
<td>Week 6</td>
<td>Word connection &amp; reduction</td>
</tr>
<tr>
<td>Week 7</td>
<td>Vowels: e, æ, o &amp; reduced vowels</td>
</tr>
<tr>
<td>Week 8</td>
<td>Consonants: Rules of T</td>
</tr>
<tr>
<td>Week 9</td>
<td>Consonants: L</td>
</tr>
<tr>
<td>Week 10</td>
<td>Consonants: R</td>
</tr>
<tr>
<td>Week 11</td>
<td>Consonants: Th /ð/, /θ/</td>
</tr>
<tr>
<td>Week 12</td>
<td>Vowels: Tense/lax, quality vs. length &amp; reduced vowels</td>
</tr>
<tr>
<td>Week 13</td>
<td>Consonants: F, V, P and B</td>
</tr>
<tr>
<td>Week 14</td>
<td>Consonants: S and Z</td>
</tr>
<tr>
<td>Week 15</td>
<td>Nasal &amp; glottal consonants</td>
</tr>
<tr>
<td>Week 16</td>
<td>Review</td>
</tr>
</tbody>
</table>
For weekly voice recordings, the participants were told that the minimum number of practice required before making the actual recording was thirty times. They were to practice with the sample recordings provided in the CDs. The participant generated recordings were then uploaded on the class BBS two days before the class and a window of 24 hours was given for peer evaluation where the participants listened to group members' recordings and gave peer feedbacks using the tag-line reply function provided in the BBS. The peer feedbacks were to be given with a focus on what was addressed in class that particular week; however, it also was to be accumulative. The researchers were given 12 hours to check the recordings and review the tag-line replies to check for repeated errors, frequently and collectively occurring problems, and to check for the need for further explanations or corrections before the class began.

Based on the class lectures, recordings, and tag-line replies, the participants kept weekly journals which were submitted twice: once on the day of midterm examination during week 8 and at the end of week 16. Of the 128 who successfully completed the course, all participants turned in their journals. The questionnaire was administered in class on week 15 by the researcher, and 128 were completed and returned.

3. The Method of Data Analysis

The data gathered from the qualitative and quantitative research were analyzed as follows. The qualitative data from classroom observation, messages and tag-line replies on the BBS, and weekly journals were collected and presented descriptively to identify the learners' perspectives of using voice recording and BBS in learning pronunciation as well as their perspectives on learner interaction in cooperative learning.

The quantitative data gathered from the questionnaire was analyzed using SPSS for frequency, Chi-Square and ANOVA on the perspectives of using voice recordings and BBS in relation to learner interaction in teaching and learning of pronunciation. The significance level was set at 0.05 ($p < 0.05$) to test the null hypotheses of no association and difference between gender in terms of their responses on the first five research questions in this study.
IV. RESULTS AND DISCUSSION

1. Learners' General Perspectives on the Use of Multimedia in English Pronunciation Classes

1) Learners' Interest in the Use of Multimedia

The learners responded positively for interest in the teaching methodology using multimedia resources for teaching and learning of English pronunciation. 93.8% of the participants show interest (very interested,' 25.8% and 'fairly interested,' 68%) and 6.2% were 'not particularly interested,' showing that learner interest in using multimedia in English pronunciation classes is very high. The learners seems to show interest in multimedia possibly due to the variety of available resources including audio, images, moving pictures, BBS, voice recording, etc, and they think the use of multimedia promotes more learner to learner as well as learner to teacher interaction than the conventional pronunciation classes.

The result of testing association for the learners' responses by gender yielded Chi-Square value which is not significant at the 0.05 level of statistical significance ($X^2 = 1.049, df=2, Sig. = 0.592$). There is no significant relationship between gender and their interest in the use of multimedia.

<table>
<thead>
<tr>
<th>Item</th>
<th>Very interested</th>
<th>Fairly interested</th>
<th>Not particularly interested</th>
<th>Not interested at all</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>25.8</td>
<td>68</td>
<td>6.2</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

2) Learner Satisfaction with the Use of Multimedia

The response for learner satisfaction is 100% (‘very satisfied,’ 50% and ‘satisfied,’ 50%) positive. The result shows that the multimedia technologies used for the pronunciation class appears to be user-friendly and easy to use for Korean university learners who were enrolled in the classes, and the learners seem to be satisfied with the teaching methodology using variety of multimedia resources.
The results of testing association for the learners' satisfaction by gender yielded Chi-Square value, which has the significance level of .681 ($X^2 = .169$, df = 1). There is no significant relationship between gender and the learners' satisfaction with the use of multimedia in pronunciation classes.

3) Amount of Practice before Recording

The participants in the study were told to practice more than thirty times prior to recording. However, as seen in Table 5, only 28.2% of the participants (‘more than 30,’ 22.7% and ‘far more,’ 5.5%) actually practiced more than thirty times and 64.8% (8%: ‘0,’ 7%: ‘1-5 times,’ 13.3%: ‘6-10 times,’ 16.4%: ‘11-15 times,’ 11.7%: ‘21-25,’ and 7%: ‘26-30 times’) practiced less than thirty times. The highest amount of practice is 11 to 15 times (16.4%) followed by 16 to 20 times (15.6%). The reason for this result can be found in the weekly journals where the majority of the participants wrote that they reduced the amount of practice as time went by because they became used to the voice recording activities and did not need to practice as much.

<table>
<thead>
<tr>
<th>Item</th>
<th>Very satisfied</th>
<th>Fairly satisfied</th>
<th>Not particularly satisfied</th>
<th>Not satisfied at all</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

The results of testing association for the learners' responses by gender yielded Chi-Square value which has the significance level of 0.259 ($X^2 = 10.088$, df = 8). Therefore, there is no significant relationship between gender and the amount of practice before recording.

2. Learners' Perspectives on the Use of Multimedia and Feedback

Learner perspectives for the use of multimedia and feedback were generally positive or very positive in all items except for one item, in the easiness of voice recording as shown
in Table 6-10. ANOVA was performed in order to determine whether there are significant differences between gender and the use of multimedia and feedback. F values and the significance levels are also indicated in Table 6-10. There are no significant differences between male and female students in perspectives on multimedia (BBS, Voice recording, and Audio sample) and feedback (peer and teacher feedback), except for motivation in the use of voice recording.

1) BBS

In English pronunciation classes, BBS provided a setting where the learners were able to interact in a non-threatening environment. In Table 6, the results show that for using BBS, usefulness is ranked to be the most positive (4.16), followed by improvement (4.02) and motivation (3.69).

<table>
<thead>
<tr>
<th>BBS</th>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>4.14 / 4.17 / 4.16</td>
<td>1</td>
<td>.026</td>
<td>.871</td>
</tr>
<tr>
<td>Easiness</td>
<td>2.95 / 2.89 / 2.92</td>
<td>1</td>
<td>.049</td>
<td>.826</td>
</tr>
<tr>
<td>Interest</td>
<td>3.42 / 3.31 / 3.37</td>
<td>1</td>
<td>.227</td>
<td>.634</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.63 / 3.74 / 3.69</td>
<td>1</td>
<td>.265</td>
<td>.608</td>
</tr>
<tr>
<td>Time-saving</td>
<td>3.61 / 3.56 / 3.59</td>
<td>1</td>
<td>.086</td>
<td>.770</td>
</tr>
<tr>
<td>Improvement</td>
<td>4.01 / 4.02 / 4.02</td>
<td>1</td>
<td>.001</td>
<td>.979</td>
</tr>
</tbody>
</table>

The results show that the learners found using BBS in English pronunciation class to be generally positive; however, easiness (2.92) was less positive than others. It appears that for learners who are unacquainted with BBS, a brief training on using BBS system should be given to familiarize them to BBS system being used in class. This result can be supported from weekly journals as follows:

Learner A: Week 14 - "I've experienced variety of different teaching styles since entering university but this was the first time I had the chance to take a class like this where I had to upload voice recordings on the class internet cafe and make comments with group members. It was extremely refreshing and interesting. I enjoyed comparing my recordings with others people, whose faces I didn't know and who were in different academic years, in order to find
similarities and differences.

Learner B: Week 14 – "A revolutionary teaching method suitable for the 21th century."

2) Voice Recording

Using voice recordings provides an opportunities for self and peer evaluation that can be repeated and stored, and it promotes individual yet cooperative learner-centered learning. The learner perspectives on voice recording are generally positive as seen in the results provided in Table 7. In particular, usefulness (4.52) is the most positive, followed by improvement (4.18) and motivation (3.88). However, easiness (2.21) was somewhat negative. It appears that the learners are not readily familiar with voice recording programs and or devices because many of them have not made voice recordings before. A brief training and information on voice recording programs and or devices should be given to familiarize them with the programs and enable learners to produce voice recordings.

<table>
<thead>
<tr>
<th>[Table 7] Voice Recording</th>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>4.57 / 4.46 / 4.52</td>
<td>1</td>
<td>541</td>
<td>.463</td>
</tr>
<tr>
<td>Easiness</td>
<td>2.41 / 2.00 / 2.21</td>
<td>1</td>
<td>1.837</td>
<td>.178</td>
</tr>
<tr>
<td>Interest</td>
<td>3.47 / 3.39 / 3.43</td>
<td>1</td>
<td>1.45</td>
<td>.704</td>
</tr>
<tr>
<td>Motivation</td>
<td>4.11 / 3.65 / 3.88</td>
<td>1</td>
<td>4.215</td>
<td>.042</td>
</tr>
<tr>
<td>Time-saving</td>
<td>3.41 / 3.70 / 3.56</td>
<td>1</td>
<td>2.200</td>
<td>.141</td>
</tr>
<tr>
<td>Improvement</td>
<td>4.11 / 4.24 / 4.18</td>
<td>1</td>
<td>.491</td>
<td>.485</td>
</tr>
</tbody>
</table>

There is a significant difference between gender in perspectives on motivation as seen in Table 7. Female learners responded more positively (4.11) on making voice recordings than males (3.65). It appears that the female learners tend to enjoy making and listening to voice recording files than the male learners; moreover, there were more instances of giving and receiving compliments on their voices such as "you have beautiful voice, like a voice actor," and "you sound really cute, like a kindergarten teacher reading a story to children" for females, whereas male participants did not receive such compliments as much on BBS. Positive interaction and feedback based on voice recording files seems to have caused higher motivation in the female learners.
3) Audio Sample (CDs)

The audio samples contained native speaker recordings of the contents of the textbook as well as the assignments given. The learners were to listen to the samples before and during the individual practice before recording. The learner perspectives on audio samples are generally positive according to Table 8. Usefulness (4.25) is the most positive, followed by improvement (3.97) and time-saving (3.76). Again, easiness was less positive than others with the mean value of 2.53. It seems that the learners prefer to use mp3 files more than CDs and found CDs rather inconvenient.

<table>
<thead>
<tr>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>4.34 / 4.15 / 4.25</td>
<td>1</td>
<td>.780</td>
</tr>
<tr>
<td>Easiness</td>
<td>2.70 / 2.30 / 2.50</td>
<td>1</td>
<td>2.132</td>
</tr>
<tr>
<td>Interest</td>
<td>3.24 / 2.95 / 3.09</td>
<td>1</td>
<td>1.774</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.19 / 3.44 / 3.32</td>
<td>1</td>
<td>1.141</td>
</tr>
<tr>
<td>Time-saving</td>
<td>3.77 / 3.74 / 3.76</td>
<td>1</td>
<td>.026</td>
</tr>
<tr>
<td>Improvement</td>
<td>3.92 / 4.02 / 3.97</td>
<td>1</td>
<td>.286</td>
</tr>
</tbody>
</table>

4) Peer Feedback

Learner perspectives on peer feedback were positive across the board. It is worth noticing in Table 9 that usefulness (3.72) was seen to be the most positive followed by easiness (3.67) and improvement (3.62). Positive perspectives on easiness shows that the learners seem to be able to give and receive peer feedback without difficulties, perhaps due to high motivation and interest. Figure 2 shows an example that supports the result.

<table>
<thead>
<tr>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>3.68 / 3.76 / 3.72</td>
<td>1</td>
<td>.120</td>
</tr>
<tr>
<td>Easiness</td>
<td>3.51 / 3.72 / 3.67</td>
<td>1</td>
<td>.835</td>
</tr>
<tr>
<td>Interest</td>
<td>3.18 / 3.17 / 3.18</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.57 / 3.31 / 3.44</td>
<td>1</td>
<td>1.022</td>
</tr>
<tr>
<td>Time-saving</td>
<td>3.19 / 3.30 / 3.25</td>
<td>1</td>
<td>.304</td>
</tr>
<tr>
<td>Improvement</td>
<td>3.50 / 3.74 / 3.62</td>
<td>1</td>
<td>1.383</td>
</tr>
</tbody>
</table>
In addition, evidence of positive perspectives regarding peer feedback through interaction on BBS can be found in weekly journals as well.

Learner C: Week 4- For this week’s recording, I received a comment saying that the speed and pronunciation was good, and another saying that accent and prominence was well placed. But distinguishing /p/ and /t/ was pointed out to be a problem area again this week. I need to pay attention to repeated advice on problems and fortify the areas that were complimented on in order to make steady improvements—like I wrote in my first journal. Also I think the group members’ criticisms were sometimes uncomfortable, but well-meant advices and their sweet compliments gives me the motivation and strength to work hard consistently. And listening to my older recordings definitely boosts my confidence because I can obviously hear the differences and see that I’ve improved.

5) Teacher Feedback

Teacher feedback, in Table 10, shows that learners responded very positively in all areas, especially in usefulness (4.64), followed by time-saving (4.13) and improvement (4.17). Interest was the least positive with the mean value of 3.83 among the 6 areas; however, it is still fairly positive.
Positive and accurate peer feedback and interaction in BBS were seen as useful but the learners weighed teacher feedback more heavily in application and review of their recordings. It is seen that teacher feedback left lasting impression on the learners because they found the comments given by the teacher to be accurate and considered it a form of guidance and direction in learning pronunciation. In comparison, peer feedback without any substantial content or critique is considered ineffective and undesirable regardless of how complimentary it seemed. Examples as found in the journals below provides supports.

Learner D: Week 6—Professor made a comment on my homework this week again and it is, of course, good! She not only points out exactly what the problem is but she tells me what I need to do to fix it. For real, I don’t like comments like ‘you read it well’, ‘I don’t hear any problems’, or ‘you are really good’ because I know there are awkward sections and mistakes when I hear it. Comments like that are annoying and they don’t help at all.

Learner E: Week 10—I got a comment from the professor and it was accurate and encouraging. It was the difference between /s/ and /z/ which is what we learned in chapter 10. I realized that my understanding on it was superficial and since I didn’t practice much, it showed in the recording. I felt that I need to practice more. The recorded comment by the professor made a strong impression and I want to make sure that I take it to hard and fix the problem.
3. Difficulties and Helpfulness of Using Multimedia for Learning English Pronunciation

1) Difficulties of Using Multimedia in English Pronunciation Classes

The learners were asked to rank difficulties or inconveniences in using BBS and voice recordings in English pronunciation classes. Table 11 provides the results where the learners ranked 'giving peer feedback' to be the most difficult (28.1%), followed by 'pre-recording practice (20.9%)' and 'lack of peer feedback (14.2%).' Areas related to peer feedback comprises 42.3% of the total, and it seems that the learners did not find the multimedia resources itself to be difficult to use or inconvenient, but it appears that the learners found interaction to be more difficult.

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Acquiring recording device</td>
<td>Count</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>12.2</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>6.9</td>
</tr>
<tr>
<td>Sharing recording files</td>
<td>Count</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>6.3</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>3.6</td>
</tr>
<tr>
<td>Quality of recording</td>
<td>Count</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>10.6</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>6.0</td>
</tr>
<tr>
<td>Pre-recording practice</td>
<td>Count</td>
<td>37</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>19.6</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>11.2</td>
</tr>
<tr>
<td>Using BBS</td>
<td>Count</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>2.1</td>
</tr>
<tr>
<td>Audio sample</td>
<td>Count</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>3.2</td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>1.8</td>
</tr>
</tbody>
</table>
2) Helpfulness of Using Multimedia in English Pronunciation Classes

Table 12 shows that the most helpful area in using multimedia in English pronunciation classes was ‘receiving teacher feedback’ with 28.2%, followed by ‘pre-recording practice’ with 21.7% and ‘receiving peer feedback’ with 18.6%. It is interesting to note that ‘pre-recording practice’ and ‘receiving peer feedback’ were ranked to be the second and the third difficult areas. Although the participants found it difficult to practice before voice recording and interact through peer feedback, it seems that they have positive attitude towards it.

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Female</th>
<th>Male</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Giving peer feedback</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>55</td>
<td>38</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>% within Gender</td>
<td>29.1</td>
<td>26.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of Total</td>
<td>16.6</td>
<td>11.5</td>
<td>28.1</td>
<td></td>
</tr>
<tr>
<td><strong>Lack of peer feedback</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>29</td>
<td>18</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>% within Gender</td>
<td>15.3</td>
<td>12.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% of Total</td>
<td>8.8</td>
<td>5.4</td>
<td>14.2</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>189</td>
<td>142</td>
<td>331</td>
<td>100.0</td>
</tr>
<tr>
<td>% of Total</td>
<td>57.1</td>
<td>42.9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Table 12] The Result of Learner Responses on Helpfulness of Using Multimedia

<table>
<thead>
<tr>
<th></th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td><strong>Pre-recording practice</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>46</td>
<td>32</td>
</tr>
<tr>
<td>% within Gender</td>
<td>22.5</td>
<td>20.6</td>
</tr>
<tr>
<td>% of Total</td>
<td>12.8</td>
<td>8.9</td>
</tr>
<tr>
<td><strong>HW using recording tools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>22</td>
<td>14</td>
</tr>
<tr>
<td>% within Gender</td>
<td>10.8</td>
<td>9.0</td>
</tr>
<tr>
<td>% of Total</td>
<td>6.1</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Using BBS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>% within Gender</td>
<td>9.8</td>
<td>6.5</td>
</tr>
<tr>
<td>% of Total</td>
<td>5.6</td>
<td>2.8</td>
</tr>
</tbody>
</table>
A Study on Voice Recordings and Feedback through BBS in Teaching and Learning Pronunciation

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>14</th>
<th>12</th>
<th>26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giving peer feedback</td>
<td>% within Gender</td>
<td>6.9</td>
<td>7.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>3.9</td>
<td>3.3</td>
<td>7.2</td>
</tr>
<tr>
<td>Receiving peer feedback</td>
<td>Count</td>
<td>31</td>
<td>36</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>15.2</td>
<td>23.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>8.6</td>
<td>10.0</td>
<td>18.5</td>
</tr>
<tr>
<td>Receiving teacher feedback</td>
<td>Count</td>
<td>57</td>
<td>44</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>% within Gender</td>
<td>27.9</td>
<td>28.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% of Total</td>
<td>15.9</td>
<td>12.3</td>
<td>28.2</td>
</tr>
</tbody>
</table>

| Audio sample                   | Count | 14 | 7 | 21 |
|                                | % within Gender | 6.9 | 4.5 |    |
|                                | % of Total | 3.9 | 1.9 | 5.8 |

| Total                          | Count | 204 | 155 | 359 |
|                                | % of Total | 56.8 | 43.2 | 100.0 |

4. Pronunciation Features Found to be Difficult

Learning pronunciation indicates being aware of various areas of language in both suprasegmental and segmental features and producing appropriate language samples. Learners were given assignments addressing various features of pronunciation based on the contents as presented in the questionnaire provided in the appendix which corresponds to weekly pronunciation features taught in class as presented in Table 2.

The results in Table 13 shows that ‘Th’ ranked to be the most difficult with 21.3%, followed by ‘R’ with 15.5%. The third difficult feature was ‘intonation expanding (11.8%)’, and ‘L (11.8%)’ and ‘R (16.5%)’ ranked fourth and fifth, respectively.

The ‘Th’ assignment was found to be difficult due to the speed of the text. The passage contained 44 /θ/’s and 17 /ð/’s. With many unvoiced consonants in the passage, the learners found that they had to read somewhat faster than other passages that had more voiced consonants. In the weekly journals as well as on the BBS, the learners made comments saying that the difficult aspect of this passage was not the consonant itself, but having many unvoiced consonants which hindered reduction and caused them to feel as if they had to read faster.

‘R’ and ‘L’, the second and fourth difficult features, are both liquids, and they have considerable effects on vowels. The third feature, ‘intonation expanding’ and the fourth,
'authentic speech' are strongly related to suprasegmental features of pronunciation. It appears that the learners seem to have found suprasegmental features or features that affect suprasegmentals such as speed, intonation, and reduction to be difficult.

The results of testing association for the learners' rank order by gender yielded Chi-Square values, which have significance levels of 0.801, 0.580, 0.860, 0.934, and 0.743 as seen in Table 13. There is no significant relationship between gender and their rank order.

### 5. Learners' Perspectives on Difficult Pronunciation Features

The results from Table 14 shows that there is a clear pattern in learner perspectives on difficult pronunciation features. The top five difficult pronunciation features all follow the pattern of usefulness having the highest mean value followed by improvement and easiness having the lowest mean value. It seems that the learners found learning these features to be useful and helpful for learning English pronunciation although these particular features tended to be difficult.

The analyzed data of learner perspectives show that 'Th,' being the most difficult feature, has the lowest mean value for all areas of usefulness (4.14), easiness (1.36),

<table>
<thead>
<tr>
<th>[Table 13] Pronunciation Features Found to be Difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Repeated: 10.7</td>
</tr>
<tr>
<td>6) Authentic speech: 4.0</td>
</tr>
<tr>
<td>11) Th (/θ/, /ð/): 21.3</td>
</tr>
<tr>
<td>Chi-Square value: 5.368</td>
</tr>
<tr>
<td>$df$:</td>
</tr>
<tr>
<td>Sig.:</td>
</tr>
</tbody>
</table>
interest (3.18), motivation (3.45) and improvement (3.97) although other than easiness, the values are still positive. In contrast, 'intonation expanding' has highest mean values for all areas with an exception of easiness (1.69). The highest value for easiness (2.53) was found in 'authentic speech,' which had the highest values for interest (3.78) and motivation (3.74). It is worth noticing that easiness for this particular feature is positive, in other words, the learners considered it easy even though it made it into the top five difficult features. The features found on Table 13 other than 'Th,' 'R,' 'intonation expanding,' 'L,' and 'authentic speech' had positive values for easiness.

The results indicate that all of the difficult features were found to be useful, interesting, motivating and aids improvement; however, the features related to suprasegmentals, 'intonation expanding' and 'authentic speech,' were considered more useful, interesting, motivating and aids improvement than segmental features such as 'Th,' 'R' and 'L.' As the findings suggest, using authentic resources addressing suprasegmental features with segmental features embedded in them in English pronunciation classroom instead of addressing them separately may increase learner interest and motivation in learning pronunciation.

As seen in Table 14, finally, there are no significant differences between gender and the learner perspectives on top five difficult pronunciation features of 'Th,' 'R,' 'intonation expanding,' 'L' and 'authentic speech.'

**Table 14** The Results of Learner Perspectives on Five Difficult Pronunciation Features

<table>
<thead>
<tr>
<th>1) Consonant Th (/θ/ /ð/)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usefulness</strong></td>
</tr>
<tr>
<td>Usefulness</td>
</tr>
<tr>
<td>Easiness</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Motivation</td>
</tr>
<tr>
<td>Improvement</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2) Consonant R (/r/)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Usefulness</strong></td>
</tr>
<tr>
<td>Usefulness</td>
</tr>
<tr>
<td>Easiness</td>
</tr>
<tr>
<td>Interest</td>
</tr>
<tr>
<td>Motivation</td>
</tr>
<tr>
<td>Improvement</td>
</tr>
</tbody>
</table>
3) Intonation expanding

<table>
<thead>
<tr>
<th></th>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>4.39 / 4.28 / 4.34</td>
<td>1</td>
<td>.381</td>
<td>538</td>
</tr>
<tr>
<td>Easiness</td>
<td>1.68 / 1.69 / 1.69</td>
<td>1</td>
<td>.001</td>
<td>976</td>
</tr>
<tr>
<td>Interest</td>
<td>3.69 / 3.61 / 3.65</td>
<td>1</td>
<td>.693</td>
<td>761</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.57 / 3.67 / 3.62</td>
<td>1</td>
<td>.147</td>
<td>702</td>
</tr>
<tr>
<td>Improvement</td>
<td>4.05 / 4.15 / 4.10</td>
<td>1</td>
<td>.306</td>
<td>581</td>
</tr>
</tbody>
</table>

4) Consonant L (/l/)

<table>
<thead>
<tr>
<th></th>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>4.15 / 4.17 / 4.16</td>
<td>1</td>
<td>.009</td>
<td>924</td>
</tr>
<tr>
<td>Easiness</td>
<td>1.95 / 1.81 / 1.88</td>
<td>1</td>
<td>.297</td>
<td>587</td>
</tr>
<tr>
<td>Interest</td>
<td>3.68 / 3.44 / 3.56</td>
<td>1</td>
<td>1.171</td>
<td>281</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.24 / 3.33 / 3.29</td>
<td>1</td>
<td>.134</td>
<td>715</td>
</tr>
<tr>
<td>Improvement</td>
<td>3.99 / 4.06 / 4.02</td>
<td>1</td>
<td>.174</td>
<td>677</td>
</tr>
</tbody>
</table>

5) Authentic speech

<table>
<thead>
<tr>
<th></th>
<th>Mean (F / M / T)</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usefulness</td>
<td>4.20 / 4.02 / 4.11</td>
<td>1</td>
<td>.444</td>
<td>507</td>
</tr>
<tr>
<td>Easiness</td>
<td>2.39 / 2.67 / 2.53</td>
<td>1</td>
<td>.649</td>
<td>423</td>
</tr>
<tr>
<td>Interest</td>
<td>3.57 / 3.98 / 3.78</td>
<td>1</td>
<td>1.677</td>
<td>199</td>
</tr>
<tr>
<td>Motivation</td>
<td>3.69 / 3.79 / 3.74</td>
<td>1</td>
<td>.126</td>
<td>724</td>
</tr>
<tr>
<td>Improvement</td>
<td>3.81 / 4.21 / 4.01</td>
<td>1</td>
<td>2.650</td>
<td>106</td>
</tr>
</tbody>
</table>

Finally, reliability analysis for the questionnaire was conducted. Cronbach’s alpha for the items in the questionnaire were over 0.8 across the board and the Cronbach’s alpha values on standardized items were over 0.9, showing high reliability for the items in the questionnaire.

IV. CONCLUSION

This study is to investigate learner perspectives using multimedia in English pronunciation classes and to suggest effective teaching methodology and activities for improving learners' pronunciation.

The findings of this study were as follows. First, the majority of learners were interested in using multimedia in English pronunciation classes and all of the learners were satisfied with the use of multimedia. The learners were able to reduce the amount of practice as time went by as they became acquainted with the activities using voice
Second, learner perspectives for the use of multimedia and feedback were generally positive and in particular, the learners responded: 1) Using BBS was found to be useful, assists in improvement and motivating; 2) Voice recordings was seen to be useful, assists in improvement and motivating, and female learners were more motivated than the male learners; 3) Audio samples were found to be useful, assists improvement, and time-saving; 4) Peer feedback was seen to be positive in general, especially for usefulness, easiness, and assists improvement; and 5) Teacher feedback is seen to be very positive in all areas, especially in usefulness, time-saving and assists improvement and weighted more heavily in application and review by the learners.

Learner responses showed that they were interested and satisfied with using multimedia in English pronunciation classes but the low mean values found in the easiness in learner perspectives for the use of multimedia suggest that the learners should be given a brief training on using voice recordings programs and devices and using BBS. The same goes for giving peer feedback. The learners should be given a training or a guideline in how to give feedbacks and what kind of feedbacks should be given to promote positive learner interaction and cooperative learning. Also, it was observed that the learners found CDs rather inconvenient since majority of the participants considered mp3 player more convenient. What’s more, the audio samples were found to be somewhat less preferred than flash files or moving pictures, and the learners found audio input to be less interesting than audio-visual input. In order to make learning resources more accessible to the learners, being aware of the learner needs as well as what they are familiar with is needed to promote better learning environment.

Third, the learner perceived difficulties in using multimedia in pronunciation classes were 'giving peer feedback,' 'pre-recording practice' and 'lack of peer feedback,' whereas the helpfulness in using multimedia were 'receiving teacher feedback', 'pre-recording practice' and 'receiving peer feedback.' It is worth noticing that multimedia resources themselves were not considered to be difficult to use, but items related to individual work and activities involving interaction were considered to be difficult. Another observable detail is that the items ranked to be difficult and helpful overlap, showing that the learners found it difficult to practice and interact through giving and receiving feedback, but they found these activities helpful.

Forth, among the pronunciation activities, the learners found 'Th,' 'R,' 'intonation expanding,' 'L,' and 'authentic speech' to be the top five difficult activities. These activities show that the leaners considered suprasegmental features, especially speed in 'Th' activity,
as well as intonation and liquid consonants to be difficult to learn.

Fifth, the learner perspectives on the pronunciation activities that they found to be
difficult present a clear pattern of the highest values in usefulness followed by
improvement and easiness having the lower value. Among the activities, 'Th' had the
lowest values across the board, although positive, and the highest values were found in
intonation expanding with an exception of easiness where 'authentic speech' was found to
have the highest mean value. Based on the findings, it is clear that the learners regarded
the suprasegmental activities to be positive in learning pronunciation; therefore, it is
suggested that activities based on suprasegmental features while containing segmental
features be used as an alternative for promoting learner interest and motivation in English
pronunciation classes.

Sixth, in terms of the learner responses on the five research questions, there was a
significant difference between gender in learner perspectives on motivation in the use of
voice recording. The female learners responded more positively for motivation than the
male learners. The difference appears to come from type of interaction that female
learners have with each other in giving peer feedback where they include compliments
with critique whereas male learners forgo such compliments when they give peer
feedback. Utilizing such positive interaction and the impact it has on learner motivation
may assist in maintaining learner interest and motivation as well as promoting lively
interaction among the learners.

In order to effectively applying such method in the pronunciation classroom, however,
the following factors needs to be taken into consideration. Some learners did not
participate fully in giving peer feedback and their group members displayed irritation and
disapproval in not being able to receive the quality of feedback they were giving to the
non-active participants. Enforcing group autonomy and designating a group leader to take
the initiative in participating in group activity can help to overcome such challenges.
Reshuffling of the groups or combining smaller groups together have caused learners to
be more alert to new audience and may trigger active interaction. In addition, proper
training on using multimedia recourses and devices need to be conducted before peer
feedback activities on BBS begin to ensure smooth facilitation and transition of activities
and effective teaching and learning of English pronunciation.

Finally, true experiments of learner produced pronunciation are needed to examine the
effectiveness of using multimedia in learning English pronunciation classes in order to
examine learner improvement of their English pronunciation. In addition, further studies on
the retainment of pronunciation features in authentic situation will be needed.
Subsequently, studies on the effectiveness of teaching and learning pronunciation and conversation skills will be carried out to investigate more effective learning of English pronunciation as well as appropriate use of multimedia resources and activities that bring together pronunciation and conversational skills in communicative environment.

REFERENCES


Language Acquisition, 23, 451-468.


APPENDIX

Questionnaire for teaching and learning pronunciation

A. General Questions (Please check V next to the appropriate item.)

1. How interested are you in the use of multimedia in English pronunciation class?
   Very interested __ Fairly interested __ Not particularly interested __ Not interested at all __

2. How satisfied were you in the use of multimedia in English pronunciation class?
   Very satisfied __ Fairly satisfied __ Not particularly satisfied __ Not satisfied at all __

3. How many times did you practice before the actual recording?
   1) 0  2) 1-5  3) 6-10  4) 11-15  5) 16-20  6) 21-25  7) 26-30  8) 30+  9) Other ______

B. BBS and Pronunciation Class

4. Please indicate what you think of each of items given below by placing a check (V) on the line at the point which best represents your view (e.g., if you think that BBS is very useful, place a check next to the word very useful on the line. Very useful __ __ __ __ __ Useless).

<table>
<thead>
<tr>
<th>BBS</th>
<th>Useful</th>
<th>Easy</th>
<th>Boring</th>
<th>Motivating</th>
<th>Timesaving</th>
<th>No improving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>__ __ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
</tr>
<tr>
<td></td>
<td>Useless</td>
<td>Complicated</td>
<td>Interesting</td>
<td>Demotivating</td>
<td>Time-consuming</td>
<td>Much improving</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Voice recording</th>
<th>Useful</th>
<th>Easy</th>
<th>Boring</th>
<th>Motivating</th>
<th>Timesaving</th>
<th>No improving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>__ __ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
</tr>
<tr>
<td></td>
<td>Useless</td>
<td>Complicated</td>
<td>Interesting</td>
<td>Demotivating</td>
<td>Time-consuming</td>
<td>Much improving</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audio CD</th>
<th>Useful</th>
<th>Easy</th>
<th>Boring</th>
<th>Motivating</th>
<th>Timesaving</th>
<th>No improving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>__ __ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
<td>__ __ __ __</td>
</tr>
<tr>
<td></td>
<td>Useless</td>
<td>Complicated</td>
<td>Interesting</td>
<td>Demotivating</td>
<td>Time-consuming</td>
<td>Much improving</td>
</tr>
</tbody>
</table>
5. Place a check next to the item that you thought was inconvenient or difficult in using multimedia during the course.

Procuring recording devices ____ Sharing recorded files ____
Quality of recordings ____ Practicing before recording ____
Using BBS ____ Audio CD ____
Giving feedbacks to others ____ Lack of received feedbacks ____
Other: __________________________________________________________

6. Place a check next to the item that you thought was convenient or helpful in using multimedia during the course.

Practicing before recording ____ Using voice recordings ____
Using BBS ____ Audio CD ____
Giving feedbacks to others ____ Receiving feedbacks ____
Receiving teacher feedback ____
Other: __________________________________________________________

C. Task Types

7. Please indicate what you think of each of items given below by placing a check (V) on the line at the point which best represents your view.

<table>
<thead>
<tr>
<th>1) Hello, my name is (Repeated)</th>
<th>Useful</th>
<th>Easy</th>
<th>Gets easier</th>
<th>Boring</th>
<th>Motivating</th>
<th>No improving</th>
<th>Useless</th>
<th>Complicated</th>
<th>Gets more complicated</th>
<th>Interesting</th>
<th>Demotivating</th>
<th>Much improving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>______</td>
<td>____</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
<td>______</td>
</tr>
<tr>
<td></td>
<td>Useful</td>
<td>Easy</td>
<td>Boring</td>
<td>Motivating</td>
<td>No improving</td>
<td>Useful</td>
<td>Easy</td>
<td>Boring</td>
<td>Motivating</td>
<td>No improving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------</td>
<td>------</td>
<td>--------</td>
<td>------------</td>
<td>-------------</td>
<td>--------</td>
<td>------</td>
<td>--------</td>
<td>------------</td>
<td>-------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Stresses in English (Metronome)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) There is a little girl (Compound words)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) I bought a chicken sandwich (Intonation expanding)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) I've gotta go (Reduction)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Spoken history (Authentic speech)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) I don't know what it means. (T combination in context)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) Leave a little for Lola (L)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) The hurly burly mirror Store (R)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Useful: __, Easy: __, Boring: __, Motivating: __, No improving: __
8. Choose and write the number of 5 assignment in order of difficulty (most difficult→second difficult, etc).

(   ) - (   ) - (   ) - (   ) - (   )

D. Background Information (Place a check V next to the appropriate item or fill in the blank.)

Gender:  Male _____  Female _____

Age:  18-20 _____  21-23 _____  24-26 _____  27-29 _____  30+ _____

School year:  ___________

Major:  ____________________________________________

* Thank you for your effort *
A Study on Voice Recordings and Feedback through BBS in Teaching and Learning Pronunciation

Key words: pronunciation, voice recording, bulletin board system, feedback
Applicable levels: tertiary education

Authors: Yoon, Seo Young (Hankuk University of Foreign Studies); jaminjava@naver.com
Lee, Chung-Hyun (Hankuk University of Foreign Studies); chlee04@hufs.ac.kr

Received: May 15, 2009
Reviewed: July 30, 2009
편집위원회 규정

제정 1997년 4월 23일
개정 2000년 9월 5일
개정 2003년 9월 10일
개정 2008년 2월 20일

제1장 총칙

제1조 편집위원회는 한국멀티미디어언어교육학회 편집위원회라 정한다.
제2조 편집위원회는 한국멀티미디어언어교육학회 회칙 제13조에 의거하여 학회 내에 둔다.

제2장 구성

제1조 편집위원장은 전공 분야별로 안배하여 20명 내외로 구성하고, 위원장과 이사, 위원 및 간사를 둔다.
제2조 편집위원장은 수석 부위원장이 겸임하고, 임기는 부위원장의 임기와 같다.
제3조 편집위원은 투고 논문을 해당 전공별로 심사할 수 있도록 각 영역 전문가를 고유 선정하며, 학술 연구 실적이 뛰어난 회원 중에서 학회 회장이 추천하여 이사회 회장이 인준을 얻어 임명한다. 임기는 학회 임원의 임기와 같다.

제3장 기능

제1조 편집위원회는 학회지의 제재, 발간 횟수, 분량, 논문 심사 기준 및 투고 규정을 정한다.
제2조 편집위원회는 학회에 제출된 논문의 심사위원을 선정 의회하고, 편집위원회는 심사 결과를 참조하여 논문 제재 여부를 최종적으로 의결한다.
제3조 논문 제재 심사 이의의 편집위원회가 의결한 사항은 이사회 회장의 인장을 가처 발효한다.
제4조 편집위원회는 학술평가 및 투고 논문의 심사를 위해 심사위원의 선정과 제재 논문 결정을 위해 학술평가 기관에 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 분석, 새로운 제안 등의 내용이어야 한다. 인접 학문과 관련 논문은 멀티미디어를 활용한 언어교육적 내용을 포함한 것이어야 한다.
제2조 내용의 독창성 : 논문의 내용은 국내외 학술지에 게재되지 않은 새롭고 창신한 것이어야 한다.
특히 표절, 연구부정행위 등에 위배되는 내용이 없어야 한다.

제3조 전개의 논리성 : 내용의 구성과 전개는 멀티미디어 인터 교육 이론을 근거로 논리적이고 명료해야 한다.

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

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

제6조 형식의 적합성 : 논문은 본 학술지 투고 규정에 적합한 형식을 갖추어야 한다.

제5장 심사 절차

제1조 심사 : 논문 투고 규정에서 명시한 마감일까지 논문을 접수하고, 편집위원장은 투고 논문 도착 즉시 “심사 확인서”를 작성해서 저자(들)에게 전자우편으로 발송한다. 다만, 논문투고규정 이나 작성요령을 지키지 않은 논문은 접수하지 않고 반송한다.

발행 예정일 : (1) 본호-4월 30일, (2) 여름호-8월 31일, (3) 가을호-12월 31일

제2조 심사위원 선정 : 편집위원장은 접수된 논문을 인여미, 전공별로 분류하고 학문 영역 및 학문에

의료 분야와 협의하여 심사위원을 선정한다. 심사위원은 해당 학문 분야에서 학술 활동이 뛰어난 회원 중에서 3인을 선정한다. 이때 당해호의 투고자는 제외하는 것을 원칙으로 한다.

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


제5조 심사 보고서 제출 : 각 심사위원은 심사 결과를 KAMALL 심사보고서 양식에 구체적으로 작성하여 수정이 요구된 과일을 전자우편으로 편집위원장에게 보내는다. 수정을 제외하는 경우에는 수정한 과일 방향을 구체적으로 지시한다.

제6조 편집위원 회의 : 편집위원장은 편집회의를 소집하고 이 편집회의를 통하여 심사내용을 검토한다. 3명의 심사위원 중에서 2인 이상이 ‘제재’ 혹은 ‘수정 후 제재’ 이상을 부여하면 ‘제재 가로, 2인 이상이 ‘반송’으로 부여하면 ‘제재 불가’로 결정한다. 2인 이상이 ‘수정 후 제재시’로 결정하면 수정 후에 다시 심사위원의 심사를 받아 ‘제재 가’의 판정을 받아야 한다.

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

제8조 기타 : 제재하기로 결정되었거나 제재된 이후라도 다른 학술지에 제재된 적이 있는 논문이나

표절, 연구부정행위가 발현된 논문에 대해서는 편집위원장의 의결에 따라 제재를 취소하고

일정 기간 동안 논문 제출을 제한한다.
논문 투고 규정

제정 1997년 4월 23일
개정 2000년 9월 5일
개정 2003년 9월 10일
개정 2008년 2월 20일
개정 2008년 12월 10일

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 이학습 구축 등의 활용 방안, 교사 교육, 코스케이드 및 소프트웨어 설계, 코스케이드 및 소프트웨어 비평 등에 관한 연구로서 교육적 내용이 포함되어 있어야 한다. 또한 국내외의 학회지에 게재되지 않은 논문으로서 창의적인 내용이어야 한다.

2조 원고 제출

1) 심사용 논문은 "아래의 한글 형태"로 작성된 파일을 전자우편으로 편집위원장에게 제출한다. 멀티에 투고자의 논문 제목, 성명, 주소, 전화번호(전, 근무지 및 휴대폰), 팩스 번호, 전자우편 주소를 명기한다. 특히, 동일한 내용의 심사용 논문은 국내외 학회지에 중복투고 할 수 없다. 중복 투고가 밝혀진 논문에 대해서는 편집위원회의 의결에 따라 심사를 취소하고 일정기간 동안 논문 투고를 제한한다.

2) 수정 보완을 요구한 논문의 최종 본은 "아래의 한글 형태"로 작성된 파일을 전자우편으로 편집위원장에게 제출한다. 

3) 최종 교정을 위한 편집 원고는 출판사에서 저자(들)에게 전자우편으로 전송하며, 저자(들)는 이를 인쇄하여 백제하게 교정한 교정지를 우편으로 정해진 기한 내에 출판사에 등기 송달로 우송한다.

4) 논문의 저작권

Multimedia-Assisted Language Learning (MALL) 학술지에 게재되는 모든 논문의 저작권은 한국멀티미디어 언어교육학회가 소유한다.

5) 마감 일자

   (1) 본 학습지: 1월 15일까지
   (2) 여름 학습지: 5월 15일까지
   (3) 겨울 학습지: 9월 15일까지

6) 원고 보낼 곳

130-791 서울특별시 동대문구 이문동 270 한국외국어대학교 영어교육과 이충현 교수 (수석부회장/편집위원장)
3조 논문의 제제

1) 논문의 전체 길이는 학회지 기준 25쪽 이내로 한다.
2) 논문은 A4 용지 크기에 작성한다.
3) 논문의 위, 아래 여백은 42mm로, 왼쪽, 오른쪽 여백은 33mm로 페미리, 꼬리말은 12mm 한다.
   줄 간격은 제목은 130%, 임문 초록은 160%, 본문은 160%, 참고 문헌은 160%로, 각 주는 145%로 한다. 본문의 상정은 임문, 한글 논문 모두 95%, 자간은 임문 논문은 -2, 한글 논문은 -8로 한다. 기타 자세한 것은 논문의 제제의 예를 참조한다.
4) 논문의 제목은 전명조 16으로, 장 제목 (I, II, III...)은 전명조 13, 서 제목 (1, 2, 3, ...)은 중고 담 11, 소 제목 (1, 2, 3, ...)은 중고담 10.5, 초부 제목 (1, 2, 3, ...)은 중고담 10.5, 미세 제목 (1, 2, 3, ...)은 신명조 10.5로 한다. 본문의 초록은 신명조 10으로 한다. 상위 제목부터 하위 제목은 아래와 같은 기호로 나눈다.
   예 : I., 1, 1), (1), ①
5) 논문의 제목 길이는 기금적 2행 이내로 한다.
6) 초록 (Abstract)은 영문으로 200단이 이내로 작성한다. (괄호 안에 단어 수를 명기한다.)
7) 모든 제목은 들여 쓰기 (indentation)를 하지 않는다.
8) 본문의 각 문단은 국문 2자, 임문 3자들 들어 쓰기 (indentation)를 한다.
9) 참고 문헌, 표, 그림 등은 본 학회가 APA의 양식을 토대로 만든 학회지 양식을 따른다.
10) 한글 논문에는 영어 단어를 쓰지 않는다. 영어 용어는 논문 전체에서 처음 한반만 괄호 안에 제시한다. 영어 단어나 문장의 예는 이탤릭체로 하고 한글 작은따옴표 (‘’)로 표시한다.
11) 영어 논문에 제시되는 국문의 예 및 참고 문헌은 로미자체로 한다.
12) 영어 논문에 제시되는 영어 단어나 문자의 예는 이탤릭체로 한다.
13) 한글 논문, 영어논문 공히 논문 마지막에 제시하는 주제어와 직접 수준, 저자 정보 (저자구분 [제1저자, 제2저자], 소속, 이메일)는 영어로 명기한다.
14) 논문 제제의 예는 다음과 같다.

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

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

I. INTRODUCTION

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

II. 장 제목

1. 소제목

 Certain features of the computer ...

1) 소제목
(1) 세부 제목
<중고덕, 영문일 경우 각 단어의 첫 자만 대문자로 나머지는 전부 소문자, 10.5, 줄 간격 160%, 문단 간격: 위 3, 아래 2, 정평 95%, 자간 -10%>
① 이세 제목
<신명조, 영문일 경우 첫 자만 대문자로 나머지는 전부 소문자, 10.5, 줄 간격 160%, 정평 95%, 자간 -10%>

2. 절 제목
<중고덕, 영문일 경우 각 단어의 첫 자만 대문자, 11, 줄 간격 160%, 문단 간격: 위 5, 아래 3mm, 정평 95%, 자간 -10%>

각주
<신명조, 양쪽 혼합, 줄 간격 145%>
<1줄 띄움>

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

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

1. 부록 소제목
<중고덕, 영문일 경우 각 단어의 첫 자만 대문자, 11, 문단 간격: 위 5mm, 아래 3mm, 정평 95%, 자간 -10%>
<1줄 띄움>
Key words: CALL, Internet-based language learning, text-chat
Applicable levels: secondary education
<선명조, 10, 줄 간격 160%: 주제어 및 적용 수준은 영어로 표기한다.>
<1줄 띄움>
Author(s): Kim, Cheulsu (Hankuk University, 1st author): ckim@hankuk.ac.kr
Park, Jinju (Gyounggi University, 2nd author): jpark@kyounggi.ac.kr
<선명조, 10, 줄 간격 160%: 단독저자인 경우에는 명시할 필요가 없으며, 공동 저작의 경우 제1저자, 제2저자 혹은 교신저자(corresponding author) 혹은 공동저자(co-author) 등으로 위의 보기와 같이 구별한다.>
<1줄 띄움>
Received: February 15, 2005
Reviewed: March 20, 2005
<선명조, 10, 줄 간격 160%>
4조 기 타

1) 영어 논문 제목에는 이름과 성의 순서(예 : Min-Su Kim)로 하며, 영문 초록 및 표지 목차에
   는 성과 이름 순(예 : Kim, Min-Su)으로 동일한다. 단, 논문 투고자의 특별한 요청이 있을 시
   에는 투고자가 정한 철자법을 따른다.
3) 계재로 결정된 원고의 고정은 투고자가 책임을 지고 행한다.
4) 투고자는 논문 계재 시 소정의 계재료를 납부하여야 한다. 기준 이상 초과 시에는 한 쪽 당
   1만원을 추가로 부담하여야 한다.
5) 회원으로 가입한 후 논문을 투고하여 계재할 수 있다.
6) 계재된 논문의 투고자에게는 학회지 3부를 증정한다.
7) 계재 예정 제목서는 본집 위원회에서 ‘계재 가능’으로 결정된 이후에만 발급 받을 수 있다.
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. Chung-Hyun Lee
  Dept. of English Education
  Hankuk University of Foreign Studies
  270 Imun-dong, Dodaemun-gu
  Seoul, 130-791 Korea
  Email: chlee04@hufs.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.
연구 윤리에 관한 규정

제1장 총칙

제1조 (목적) 이 규정은 한국멀티미디어 연비교육학회의 학술지에 학술 논문 결과를 게재하고자 할 때 논문 투고와 심사 및 학술지 편집 과정에 있어서 논문의 저자, 학술지의 편집위원회 및 심사위원이 지켜야 할 윤리를 규정함을 목적으로 한다.

제2조 (적용 범위) 이 규정은 한국멀티미디어 연비교육학회 학술지인 Multimedia-Assisted Language Learning에 적용된다.

제2장 논문 저자 윤리규정

제1조 (표절) 논문 저자는 자신이 수행하지 않은 연구의 일부분을 자신의 연구 결과인 것처럼 논문에 제시하지 않는다. 타인의 연구 결과를 참조한 경우에는 반드시 출처를 명시해야 하며, 그 일부분은 자신의 연구 결과이거나 주장이 것처럼 제시하는 것은 표절이다.

제2조 (연구업적) 저자는 자신이 실제로 수행하거나 공헌한 연구에 대해서만 저자로서 책임을 지며 엄격으로 인정받는다. 논문 저자의 순서는 연구에 기여한 정도에 따라 정확하게 반영한다. 직책상 이유로 제1저자로서 엄격을 인정받거나, 연구에 기여했음에도 공동저자에서 배제되는 것은 절대히되고 있다.

제3조 (중복 기재) 저자는 국내외를 막론하고 이전에 출판된 자신의 연구물이나 또는 제3자 예정이거나 심사 중인 연구물을 새로운 연구물인 것처럼 투고하지 않는다. 이미 발표한 연구 결과를 다른 연구나 다른 독자들 대상으로 다시 출판하기 원하는 저자는 논문을 게재한 학술지와 앞으로 논문이 게재될 학술지의 합법적인 모두에게 중복 게재 여부를 확인한 후 양측의 동의를 구해 이차 출판 형식으로 논문을 게재하도록 한다.

제4조 (인용 및 참고 표시) 공개된 학술 자료를 인용할 경우에는 정확하게 기술하고 상식에 속하는 자료가 아닌 반드시 그 출처를 명확하게 밝힌다. 논문 및 연구계획 심사 시 또는 개인적인 심층을 통해 얻은 자료의 경우에도 그 정보를 제공한 연구자 또는 동의를 얻은 후에만 인용해야 한다. 타인의 글을 인용하거나 타인의 아이디어를 이용할 경우에는 반드시 인용 여부 및 참고 여부를 밝히며, 이에 대하여 신뢰하고 연구의 결과가 타인의 독창적인 생각이나 해석적인지를 독자는 알 수 있도록 해야 한다.

제5조 (연구 자료의 진실성) 논문 저자는 연구 결과에 중대한 영향을 미칠 수 있는 데이터 및 분석 결과를 왜곡 또는 조작하지 않고, 연구 결과를 진실하고 공정하게 제시한다.

제6조 (논문의 수정) 저자는 논문 심사 과정에서 제안된 편집위원과 심사위원의 의견을 가능한
한 수용하여 논문에 반영되도록 노력해야 하며 이들의 의견에 동의하지 않을 경우에는 그 근거와 이유를 상세하게 적어서 편집위원에게 알려야 한다.

제3장 편집위원회 윤리규정

제1조 편집위원회는 투고된 논문의 제재 여부를 결정하며 결정 과정에서 저자의 인격과 학자로서의 독립성을 존중한다.

제2조 편집위원회는 투고된 논문을 심사하는 데 있어서 저자의 성별, 나이, 소속 기관, 신임장, 친분관계와 무관하게 오로지 논문의 질적 수준과 논문 심사 규정에 근거하여 공정하게 취급해야 한다.

제3조 편집위원은 투고된 논문의 편집장이 해당 분야의 전문적 지식과 공정한 판단 능력을 지닌 심사위원장에 의뢰하여 가능한 한 객관적인 평가를 이루어질 수 있도록 노력해야 한다.

제4조 편집위원은 투고된 논문의 제재가 결정될 때까지는 저자에 대한 사항이나 논문의 내용을 공개해서는 안 된다.

제4장 심사위원 윤리규정

제1조 심사위원은 학술지의 편집위원이 의뢰하는 논문을 심사규정에 정한 기간 내에 성실히 평가하고 평가 결과를 편집위원장에게 통보해 주어야 한다. 만약 자신이 논문의 내용을 평가하기에 적임자가 아니라고 판단할 경우에는 편집위원장에게 지체 없이 그 사실을 통보한다.

제2조 심사위원은 논문을 개인적인 학술적 신념이나 친분관계를 떠나 객관적 기준에 의해 공정하게 심사해야 한다. 심사 당시의 논문을 충분히 검토한 다음 심사해야 하며, 충분한 근거를 차례하게 명시하여 심사 보고서를 작성해야 한다.

제3조 심사위원은 전문 지식으로서 저자의 인격과 독립성을 존중해야 한다. 심사 보고서에는 논문에 대한 자신의 판단을 밝히되 수정 보완이 필요하다고 생각하는 부분에 대해서는 상세하게 설명해야 한다. 가급적 정중하고 부드러운 표현을 사용하고 저자를 비하하거나 부정적인 표현은 삼가한다.

제4조 심사위원은 심사 대상 논문에 대한 비밀을 지키어야 한다. 논문 제재가 최종적으로 결정되기 전에 논문을 다른 사람에게 보여주거나 논문 내용에 대해서 다른 사람과 논의하지 말아야 한다.

제5장 윤리규정 시행 지침

제1조 (윤리규정 서약) 한국멀티미디어 언어교육학회 학술지의 Multimedia-Assisted Language Learning에 논문을 투고하는 모든 사람은 윤리규정의 반복시 윤리규정을 준수하기로 서약
한 것으로 간주한다.

제2조 (윤리규정 위반의 보고) Multimedia-Assisted Language Learning 발행 학술지 게재논문에서 이중출판, 이중계재, 표절, 조작, 모방 등과 같이 연구 윤리 규정 위반 사례가 드러날 경우 즉시 학회 임원회에 보고하여야 사실 여부를 확인한다.

제3조 (학회 임원회의 권한) 임원회는 윤리규정 위반으로 보고된 연구 논문에 대하여 충분한 검토와 절차한 조사를 실시한 후, 윤리 규정 위반이 사실로 판명된 경우에는 회장에게 적절한 징계 조치를 건의할 수 있다.

제4조 (학회 임원회의 조사 및 심의) 윤리규정 위반으로 보고된 논문 저자는 임원회에서 행하는 조사에 협조해야 한다. 또한 윤리규정 위반으로 보고된 논문 저자에게 충분한 소명의 기회가 주여져야 한다. 학회의 최종적인 징계 결정이 내려질 때까지 임원회는 해당 논문 저자의 신원을 외부에 공개해서는 안 된다.

제5조 (징계의 절차 및 내용) 회장은 임원회의 소집하여 징계 여부 및 징계 내용을 최종적으로 결정한다. 연구 윤리 규정을 위반했다고 판정된 논문 저자에 대해서는 경고, 해당 논문 게재 취소 (과형 참가), 회원자격 정지 내지 박탈 등의 징계를 할 수 있으며 이 조치를 다른 기관이나 개인에게 알릴 수 있다.

제6조 (윤리규정의 수정) 윤리규정의 수정 절차는 본 학회 최저 개정 절차에 준한다.

제7조 (윤리규정의 공포) 모든 윤리규정은 학회 회원들에게 정기적으로 공포한다. 비정기적으로도 윤리규정의 개정 및 필요에 따라 학회 회원들에게 공포한다.
한국멀티미디어언어교육학회지 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).

* 위의 같이 인용문은 " " 안에 넣고, 그 안에서 다시 인용이나 괄호를 할 때는 ‘ ’를 쓴다.

인용의 문장이 끝나도 마침표는 괄호(참고 문헌의 정보)가 끝난 후에 쓰는다. 괄호 안에는 보기처럼 저자, 연도, 뺨수를 절로 분리하여 표기하고, p.(한 쪽의 경우) 혹은 pp.(여러 쪽
의 경우) 뒤에 한 칸을 띄고 뺨수를 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).

* 위의 같이 직접 인용한 문장은 본문 기준으로 한쪽 및 오른쪽 각각 "5 ch" 들어쓰기를 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, 영어는 괄호속에서 "&"를 사용한다.
(1) 한글 논문 : Tomlinson과 Henderson(1995)은 그들의 신행연구( 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 논문에는 "등"이나 "외 3인"이라는 식으로 표기한다.
(1) 한글 논문 : Ahmad, Corbett, Rogers, 외 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. 혹은 et alii(and others)의 약어로 al.에서만 점을 사용하고, 이탤릭체로 표기하지 않는다.

9) 여러 저자를 필호 인에 소개 : 여러 저자를 소개할 경우, 안과 별순으로 배열하고, 세미콜론(,)으로 분리한다. 동일 저자의 것은 연대순으로 배열하고, 싹표로 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 인도가 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, 한 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 한정하는데 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 표기의 왼쪽에 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</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>38.36%</td>
<td>52</td>
</tr>
<tr>
<td>Comprehension level strategies</td>
<td>98</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>61.63%</td>
<td>48</td>
</tr>
</tbody>
</table>

2) 그림이나 출력 화면: 한 면에 넣을 수 있는 그림의 최대 한도의 가로 크기는 14.5cm, 세로의 크기는(그림의 테두리를 포함하여) 21cm로 한다. 그림의 제목(대고딕 9.5, 줄간격 150%)은 그림의 아래 중앙에 위치하며 아래 보기에 같이 쓴다.

[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 수정본과 함께 제출하여야 한다.

3. 참고 문헌 목록(References) 표기

참고 문헌에는 논문에 언급된 것만을 빠짐 없이 저자 성의 알파벳순으로 싣는다. 한글 논문의 참고 문헌 목록에 한글 문헌의 영어 문헌을 싣을 경우, 한글 문헌을 먼저 나니어 순으로 싣고, 영어 문헌을 저자 성의 알파벳순으로 싣는다. 한국어 참고 문헌 표기 방법은 영어에 준한다. 단 논문을 영문으로 쓰 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)
최수영. (2000). 멀티미디어 영어교육. 서울: 박문각

번역(Translation)

3) 편집된 책에 실린 논문이나 장(An Article or Chapter in an Edited Book)
Stevens, V. (1989). A direction for CALL: From behavioristic to humanistic courseware. In M. C. Pennington (Ed.), *Teaching languages with computers* (pp. 31-44). La Jolla: Athelstan.

* 책 혹은 논문의 저자, 연도, 제목 등은 저널이나 책에서의 표기 방법과 같다. 그러나 책 저자
(Ed., 혹은 Eds.)의 성명은 책 혹은 논문의 저자의 표기 방법과는 달리 이름의 약자를 먼저 쓰고 성을 뒤에 써.

4) 잡지(Magazine Article)
* 잡지 기사는 월간일 경우에는 출간 날까지 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 부분을 표기한다.

7) 연구 보고서(Report)
* 보고서의 제목을 이탤릭체로 한다. 연구보고서를 ERIC에서 입수한 경우 위와 같이 ED 번호를 괄호 안에 원칙 위에 표기한다.
8) 학회 발표 논문(Proceedings of Meetings and Symposia)


* 발표 논문집이 출간된 경우 논문 제목은 보통체, 논문집의 이름은 이탤리체 표기한다. 이와 반대로 미간행 발표 논문집일 경우에는 논문 제목은 이탤리체, 논문집의 이름은 보통체로 표기한다.

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


10) 인터넷 자료(Internet Resources)
(1) 온라인 저널(On-line Journal)
Multimedia-Assisted Language Learning


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


*인터넷 자료는 자료를 수집한 년, 월 및 일자까지 표기한다. 그리고 URL을 표기한 후 마침표를 넣지 않는다.*

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


* 컴퓨터 프로그램, 소프트웨어 혹은 프로그래밍 언어는 이탤릭체로 표기하지 않는다. 이름 뒤 괄호([ ])에 [컴퓨터 소프트웨어] ([Computer software])라고 표기한다. 저자가 없는 경우에는 컴퓨터 프로그램 명을 저자의 위치에 표기한다.
한국멀티미디어언어교육학회

The Korea Association of Multimedia Assisted Language Learning (KAMALL)

302-735 대전광역시 서구 도야2동 439-6
배재대학교 TESOL 학과 김정태(총무이사)
Tel: 042-520-5913, CP: 010-7239-6104
Email: kim.jungtae@gmail.com 홈페이지: http://www.kamall.or.kr
※홈페이지에서 온라인으로 가입할 수 있습니다.

■ 입회비: W20,000 (연회비 W20,000) ■ 활동비: W300,000
국민은행 048401-04-078958 예금주 최인철

회원 입회 원서

<table>
<thead>
<tr>
<th>성 명</th>
<th>漢字</th>
<th>英文</th>
</tr>
</thead>
<tbody>
<tr>
<td>주민등록번호</td>
<td></td>
<td></td>
</tr>
<tr>
<td>근 무 처</td>
<td>직위</td>
<td></td>
</tr>
<tr>
<td>주 소</td>
<td>전화</td>
<td>FAX</td>
</tr>
<tr>
<td>직접</td>
<td>전화</td>
<td>FAX</td>
</tr>
<tr>
<td>자택</td>
<td>전화</td>
<td>FAX</td>
</tr>
</tbody>
</table>

Email | 휴대폰 |
최종 학력 | 국 내 | 국 외 |

연 구/관심분야

학회활동 참여 희망 분야에 □ 표

인터넷

<table>
<thead>
<tr>
<th>인터넷</th>
<th>멀티미디어 교수용 자료제작기법</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) 활용</td>
<td>(1) 활용</td>
</tr>
<tr>
<td>(2) 연구 개발</td>
<td>(2) 연구 개발</td>
</tr>
<tr>
<td>(3) 교육 workshop</td>
<td>(3) 교육 workshop</td>
</tr>
</tbody>
</table>

CD-ROM Titles

| 멀티미디어언어교육학회 활동목적에 동의하여 회원임원서를 제출합니다. |
| 200 년 월 일 |
| 신청인: |

한국멀티미디어언어교육학회장 귀하
The Korea Association of Multimedia Assisted Language Learning (KAMALL)

Prof. Jungtae Kim, Secretary General
Dept. of TESOL, Pai Chai University
Domag-dong, Seo-gu, Daejeon-si, Korea, 302-735
Email: kim.jungtae@gmail.com Homepage: http://www.kamall.or.kr

*Membership application is available online.

MEMBERSHIP APPLICATION FORM

<table>
<thead>
<tr>
<th>Name in Korean</th>
<th>First</th>
<th>Last</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name in English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Security Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>Home</th>
<th>Phone</th>
<th>FAX</th>
<th>Office</th>
<th>Phone</th>
<th>FAX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Final Degree Granted</th>
<th>In Korea</th>
<th>In foreign country</th>
</tr>
</thead>
</table>

Check (√) your interested field.

<table>
<thead>
<tr>
<th>Computer</th>
<th>Use</th>
<th>CD-ROM</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td></td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>Teacher Training/Workshop</td>
<td></td>
<td>Teacher Training/Workshop</td>
</tr>
<tr>
<td>Internet</td>
<td>Use</td>
<td>Others:</td>
<td>Use</td>
</tr>
<tr>
<td></td>
<td>Research</td>
<td></td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>Teacher Training/Workshop</td>
<td></td>
<td>Teacher Training/Workshop</td>
</tr>
</tbody>
</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: ₩500,000 ($250)
* Library Membership Fee: ₩100,000 ($100)

The payment should be made to Kookmin Bank account 048401 04 078058 (Choi, Inn-Chull KAMALL), and a copy of the receipt must be mailed to the Secretary General with this application form.
Multimedia-Assisted Language Learning

Vol. 12, No. 2  Summer 2009

발행인: 최 인 철
발행처: 한국멀티미디어언어교육학회
연락처: 302-735
대전광역시 서구 도마2동 439-6
배재대학교 TESOL학과
총무이사 김정태
Tel: 042-520-5913, CP: 010-7239-6104
Email: kim.jungtae@gmail.com
홈페이지: http://www.kamall.or.kr
발행일: 2009. 8. 31
제작처: 북코리아
102-11-8011
서울시 마포구 공덕동 115-13번지 2층
TEL: 02)704-7840/7845 FAX: 02)704-7848
홈페이지: http://www.sunhaksa.com
이메일: sunhaksa@korea.com

학회구좌: 국민은행 048401-04-078958 (최인철)

*본 학술지는 한국학술진흥재단 등재지입니다.