

Implementing Computer-Assisted Language Learning in the EFL Classroom: Teachers' Perceptions and Perspectives

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Abstract

The aims of the study reported in this article are to investigate factors affecting English as a foreign language (EFL) teachers' use of computers in their classrooms and to find out EFL teachers' perceptions of computer-assisted language learning (CALL) and ways to improve CALL practice in school settings. Participants in the study were twelve Korean in-service teachers of EFL working at secondary schools in Korea. A questionnaire and follow-up in-depth interviews were employed to collect data. The results of the study indicate that the teachers have positive and favourable attitudes toward the use of the computers. They consider computer technology as a useful teaching tool that can enhance ways of teaching by offering students a variety of language inputs and expanding students' learning experiences in real and authentic contexts. It is also reported that external factors such as lack of time, insufficient computer facilities, rigid school curricula and textbooks and lack of administrative support negatively influence the implementation of CALL in the classroom. Internal factors such as teachers' limited computer skills, knowledge about computers and beliefs and perceptions of CALL also seem to significantly affect teachers' decisions on the use of CALL. Based on the findings of the study, implications are made for the effective implementation of CALL in EFL contexts.

Introduction

In recent years, the rapid evolution of information and communication technology (ICT) has made great changes in societies and education. The Internet, particularly, has become a useful tool for communication, a venue for experiencing different cultures and a mediator in diverse political, social and economical situations. Along with the impact of the Internet worldwide, the extensive use of computers at schools has had a critical influence on educational environments. The Ministry of Education and Human Resources Development (MOE & HRD) in Korea, for example, has implemented several Educational Reform Plans since 1997 to meet the challenges in an era of high-technology. At the governmental level, the Education Ministry implemented 'The Comprehensive Plan for Education in the Information Age' aimed at building the infrastructure for education between 1997 and 2000. It included ICT equipped classrooms, computer labs and digital libraries with computers connected to the Internet to provide schools with technology-enhanced learning environments. On the basis of the plans, the Korean government has provided every school with multimedia computers, software programs and high-speed broadband Internet connections to cope with an information technology society and to integrate ICT into everyday educational practices.

In terms of teaching English as a foreign language (EFL), the paradigm of English education in Korea has moved to the communicative language teaching (CLT) approach along with the Seventh Educational Reform in 1997 (Choi, 2006; Kwon, 2000). The underlying theoretical concept of CLT is communicative competence, which refers to the ability for language learners to use socially, contextually and culturally appropriate language in communicative contexts (Savignon, 1997).

However, most Korean learners of EFL have difficulties to develop their communicative competence beyond the classroom mainly because they do not have a supportive learning environment where they can hear and speak English for communicative purposes (Jeong, 2006). Therefore, some special efforts are needed to help Korean students expand their language learning experiences and practice the target language outside the classroom. This need can be found in the Korean government's special emphasis on English language proficiency and computer literacy in the spirit of globalization. English language proficiency and computer literacy are currently essential elements in the Korean society in looking for a job, obtaining promotion and entering into a school of higher education (Kwon, 2000). In these circumstances, the Internet, combined with a variety of computer-assisted language learning (CALL) programs, is on its way to restructuring the concept of the language classroom and the roles of the learner and the teacher in foreign language learning and teaching in Korea. The appropriate integration of Internet-connected computers into the language curriculum is a key issue to consider when examining the effective use of computer technologies for educational purposes in Korea.

According to Atkins and Vasu (2000), teachers' attitudes or concerns have a significant influence on the use of computers in the classroom. Lam (2000) also emphasizes that teachers' personal beliefs of the advantages of using technology for language teaching influence teachers' decision regarding technology use. Similarly, Kim (2002) points out that critical factors affecting successful integration of technology into the classroom are associated with teachers themselves, such as teachers' perceptions and attitudes. She adds that teachers' perceptions and attitudes toward teaching and technology can be regarded as a facilitating or inhibiting factor, giving them more confidence or a major barrier of technology use. Redmond, Albion and Maroulis (2005) also reported that teachers' personal backgrounds such as personal confidence, interests in using ICT and willingness to try something different are significant factors that might promote ICT integration in the classroom.

However, Egbert, Paulus and Nakamichi (2002) assert that a positive attitude toward computer technology does not guarantee that teachers will be able to use the technology in the classroom. Kim (2002) found that teachers' actual use of Web-based lessons was limited, frequently delayed, avoided or withdrawn. They encountered some unexpected difficulties or barriers due to lack of sufficient knowledge and computer skills, lack of experience, insufficient time, computer anxiety and lack of confidence, although all participants in her study had positive attitudes toward the use of technology and strong intrinsic motivation such as personal curiosity and interest. Shin and Son (2007) also found that Korean teachers of English had difficulties in using CALL in the classroom. The most common reasons for not using computers included limited class hours, inconvenience of using computer facilities and technical problems such as slow Internet connections. In addition, they had problems related to integrating authentic materials into their textbooks.

While previous studies in educational technology focused primarily on students' attitudes and reactions to using technology, little research on factors affecting the implementation of CALL in Korean EFL contexts has been conducted so far although almost all schools across the nation have been connected to the Internet. Through an investigation of Korean EFL teachers' perceptions and perspectives on CALL practice, the study reported in this article will provide insights into Korean EFL teachers' use of CALL in their curricula.

Language Teachers and CALL

Current advances in ICT have changed the roles of language teachers and learners. Learners are expected to be active participants in the learning process rather than passive recipients since they

control their own learning in a technology-enhanced learning environment (Brown, 1991). Teachers encounter new demands of those learners in integrating new technologies into the second/foreign language classroom. They also look for better ways of providing students with linguistic skills, meaningful communication and culture. Lam and Lawrence (2002) found that using computers in a communicative classroom brings about the shift of traditional teacher-student roles. In the technology-enhanced environment, learners could manage their own learning process by gathering information and negotiating meaning themselves. The classroom became more learner-centred, that is, learners were able to make their decisions and became responsible for their work more independently. The teacher, on the other hand, became a “facilitator, a resource person and a counselor rather than the only authority and decision-maker” (p. 305). Bancheri (2006) also asserts that the role of teachers in the new era of technology is not only to transmit new knowledge, but to give students tools to acquire knowledge and recognize the value of what they see in books and software as well as on the Internet. In addition, Jeong (2006) emphasizes that the role of teachers in EFL settings is more crucial than ever before because teachers are able to motivate students and try to create language learning environments which are non-threatening, meaningful and affectively supportive by using Web technology.

Transition from conventional teacher-centred teaching to computer-assisted, learner-centred learning requests teachers to be adequately prepared to work in Web-based environments (Rilling, Dahlman, Dodson, Boyles & Pazvant, 2005). In order to cope with technological paradigm shifts effectively, therefore, teachers need to become familiar with Web technology and have technical competence required to accommodate CALL applications and use various functions of the applications for educational purposes (Cunningham, 2000). If language teachers have a variety of positive teaching and learning experiences in using computers, they are likely to be more confident and skilful in implementing CALL in their own classrooms. Therefore, teacher development programs should be provided for language teachers to deal with issues of using computers (Jung, 2001; Lee & Son, 2006; Son, 2002, 2004; Suh, 2004) and gain competent skills in managing computer-based tasks and activities in the classroom (Johnson, 2002; Oh & French, 2007).

As CALL can be enriched by teachers, teachers’ views on CALL implementation are crucial. Considering that CALL activities should be integrated into the existing curriculum according to learners’ levels of language and computer literacy, teachers need to explore the full potential of CALL programs and utilize them creatively in the classroom. Liu, Theodore and Lavelle (2004) insist that teachers’ attitudes or concerns about technology can influence successful technology integration. This is in line with the argument put forward by Atkins and Vasu (2000), who argued that teachers’ technology use and knowledge are significantly related to their confidence level. Similarly, Lam (2000) notes that teacher confidence is influential because a lack of confidence can hinder teachers’ use of technology in the classroom. Rakes and Casey (2000) also stated that teachers must be comfortable with technology and have positive attitudes toward technology integration to improve students’ achievement. They added that teachers’ concerns on technology use need to be considered because they affect teachers’ behaviour. This implies that teachers’ personal comfort with technology is essential for the successful integration of technology.

Several researchers (e.g., Egbert, Paulus & Nakamichi, 2002; Lam, 2000; Oh & French, 2007; Yildirim, 2000) found that, as a result of teacher training programs, teachers improved their capabilities with computers, gained confidence with technology and expressed the view that teacher development programs influenced their attitudes toward technology positively. For instance, Yildirim (2000) examined changes in pre-service and in-service teachers’ attitudes toward computers following their participation in an educational computing class and explored factors that contributed to their computer use. All of the participants agreed that the computing class had positive effects on their attitudes and helped them gain more confidence in the use of computers.

This finding is well supported by other researchers (e.g., Arnold, Ducate, Lomicka & Lord, 2005; Egbert, Paulus & Nakamichi, 2002; Han, 2006; Johnson, 2002; Jung, 2001; Lam, 2000; Liu, Theodore & Lavelle, 2004; Luke & Britten, 2007; Oh & French, 2007) who assert that teacher education programs should be beneficial for pre-service and in-service teachers in fuller integration of technology into the curriculum.

Egbert, Paulus and Nakamichi (2002) discovered that teachers who had previous experience with technology use were more likely to use CALL activities in the classroom. They added that peers and colleagues are the most common resource of finding out about new CALL activities. The results of their study indicate that teachers are likely to learn best by observing fellow teachers' class and teaching methods used in actual classrooms, trying out new techniques, getting feedback on their teaching and talking to colleagues and fellow teachers. With similar views of teacher education, Jung (2001) claims that school-based, workshop style technology training programs should be introduced, where well-trained colleagues help less skilful teachers use technology in their classrooms and tutor each other on a one-on-one basis.

Interestingly, a study conducted by Bax (2003) indicates that many people have excessive beliefs on computer technology in language learning. In other words, they tend to think that CALL should do everything and replace current teaching tools such as dictionaries and even the teacher. This leads to a misguided assumption that the mere existence of computer technology in schools was the only relevant factor in achieving successful implementation of CALL, while all other crucial factors such as teacher training, pedagogical support and ways of CALL integration had been neglected. To avoid the mistaken idea, which is an obstacle influencing the implementation of CALL (Bax, 2003), it is important to note that CALL practitioners should take into account various elements, including teachers' perspectives of and attitudes toward the use of technology, for achieving the successful implementation of CALL.

Factors Influencing CALL Implementation

A number of studies (e.g., Atkins & Vasu, 2000; Egbert, Paulus & Nakamichi, 2002; Jung, 2001; Kim, 2002; Lam, 2000; Lee & Son, 2006; Shin & Son, 2007; Suh, 2004; Yildirim, 2000) indicate that factors such as teacher training and computer facilities, teachers' attitudes toward computers and prior teaching experiences with ICT are strongly related to the success or failure of CALL in the classroom. They also point out external or environmental factors (e.g., financial problems, strict curriculum) and teacher-related factors (e.g., pedagogical, affective or other personal attitudes and beliefs). Specifically, financial problems, insufficient materials and time, lack of technical support and inflexibility of curriculum are mentioned as common external barriers affecting CALL practices. A report on American public teachers' use of technology (Smerdon, Cronen, Lanahan, Anderson, Iannotti & Angeles, 2000) also reveals that insufficient numbers of computers and lack of time for teachers to learn how to use computers or the Internet are great barriers to their use of computers for instruction. In the Korean context, additionally, Lee and Son (2006) found that Korean EFL teachers have difficulties in finding appropriate teaching materials and inconvenience of the use of computer labs hinders their willingness to use CALL.

External factors such as time constraints (Lam, 2000; Smerdon et al., 2000), limited computer facilities (Shin & Son, 2007), lack of financial or technical support (Lam, 2000; Shin & Son, 2007; Smerdon et al., 2000; Toprakci, 2002), inadequate teacher training and inflexible curricula (Lam, 2000; Smerdon et al., 2000) may lead to failure to technology use. Other external barriers related to individual contexts or work environments are poor Internet access, limited capacities of school network and inadequacy of technical support. The limitations stemming from those external factors

seem to focus on computers and work environments, not on teachers. Internal factors, on the other hand, stemming from teacher-related problems include teachers' lack of ICT knowledge and resources, lack of experience with ICT as a learner and no access to appropriate materials and models of teaching with ICT (Kim, 2002; Lam, 2000). Since teachers somehow tend to teach in the same manner they were taught in the past, teachers' own previous experiences with technology are critical factors determining CALL implementation (Egbert, Paulus & Nakamichi, 2002). The characteristics of internal factors are invisible and unnoticeable when compared to external factors which are easily recognizable. In addition, it is important to consider that there are other barriers related to teachers' perspectives, personal attitudes, beliefs, confidence, motivation and awareness of the advantages of technology. Atkins and Vasu (2000) regard teachers as one of the most important factors influencing technology use and argue that teachers' attitudes or concerns have a significant impact on the integration of the computer into the classroom. Kim (2002) also agrees that a teacher as an individual with complex internal variables is a key element affecting the use of the computer in the classroom. These studies suggest that teachers who have basic computer competencies are more confident in using computers and are more likely to integrate computers into their teaching than those who have not.

The Study

Participants

A total of twelve teachers of EFL participated in the study. All of them were in-service teachers working at secondary schools in Seoul, Korea. Of the twelve participants, two were male teachers and ten were female teachers (mean age 42, ranging from 31 to 57 years). Their teaching experience ranged from 3 years to 26 years while their experience in using computers for work-related purposes ranged from 4 years to 15 years. All participants had access to the Internet at home and school.

Data collection and analysis

A questionnaire was sent to the twelve Korean EFL teachers via e-mail. The questionnaire consisted of two sections. In Section One, there were 19 questions to which the teachers responded to yes/no questions and multiple-choice questions to obtain participants' background information and to elicit their responses related to the use of computers in the classroom, including their level of computer skills, computer use in the classroom, preferences in CALL applications, participation in in-service teacher training programs and reasons for preventing their participation in in-service teacher training programs. In Section Two, the teachers were asked to rate statements according to their level of agreement or disagreement to show their perceptions of and attitudes toward CALL implementation. A 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree' was used.

Following the questionnaire, a follow-up in-depth interview with each teacher was conducted in Korean for about fifteen minutes. The interview was designed to elicit information about the teachers' perspectives on CALL implementation in their own teaching contexts. It was semi-structured with the following seven open-ended questions:

- 1) What do you think about the use of computers in the classroom?
- 2) What do you think are the advantages of using computers in the classroom?

- 3) What do you think are the disadvantages of using computers in the classroom?
- 4) Do you think CALL can contribute to students' language development? If yes, how? If no, why not?
- 5) What factors do you think influence your use of CALL? How much?
- 6) What do you think about the future of CALL in terms of the teaching of EFL?
- 7) Do you have any suggestions to make in relation to CALL practice?

A letter of consent was provided together with an introductory letter for the teachers to read and sign before the questionnaire and interviews were administered. Prior to the interviews, the teachers were asked to fill out a questionnaire first and then invited to face-to-face interviews. The interviews were conducted with the teachers individually to follow up their responses to the questionnaire in their native language (i.e., Korean). Each interview was recorded, transcribed and then translated into English. Data from the interviews were analysed qualitatively and coded according to the main interview questions and presented as statements of the teachers' responses to the questions.

Results

Data from the questionnaire

Of the twelve teachers who participated in the study, eleven teachers indicated that they use the computer in the classroom and use it mainly for preparing teaching materials and activities. Among the eleven teachers, eight teachers indicated that they use the computer less than 4 hours a day and three teachers indicated that they use the computer more than 4 hours a day. It was also found that ten teachers use the computer very often (more than three times a week) while one teacher uses the computer sometimes (once to twice a month) for language instruction in the classroom.

Regarding teachers' self-rated computer skills, ten teachers indicated that their computer skills are fair or good while two teachers confessed that their computer skills are poor. In the question of CALL applications they mainly use in the classroom, the teachers showed their preference to CD-ROMs and the Internet. During the past two years, seven teachers did not participate in any in-service training courses while five teachers took in-service teacher training courses to learn how to use computers for teaching purposes. The five teachers who took training courses reported that the courses have been very helpful for technology integration in their classrooms. The seven non-participants in training courses reported that they did not take them because of limited time or no interest in training courses.

Through their responses to Section 2 of the questionnaire, ten teachers indicated that they enjoy using computers and nine teachers felt comfortable using computers in the classroom. Also, nine teachers agreed or strongly agreed that they would like to use computer-based materials in the classroom while three teachers indicated that they are uncertain about the effectiveness of using computer-based materials. With a mean rating of 3.3, six teachers agreed that a learner-centred environment could be created by using computers while the other six teachers were uncertain or disagreed with it. In addition, nine teachers thought that their teaching could be improved by using computers and agreed that CALL is an effective way of teaching a foreign language. A total of eleven teachers agreed that CALL improves the quality of teaching; ten teachers agreed that CALL

motivates students in learning EFL and; nine teachers agreed that CALL encourages students to be active in their learning.

All twelve teachers agreed that CALL provides students with opportunities to engage in real learning and the use of computers in the classroom makes foreign language learning interesting. They also agreed that using the Internet is a good way to learn about different people and culture. Although eleven teachers agreed that teachers' openness to use computers facilitates the implementation of CALL, however, five teachers were uncertain that teachers' willingness to use computers in the classroom enhances students' language development. At the same time, four teachers were uncertain and two teachers disagreed that teachers should take a leading role in the CALL classroom.

Data from the interviews

Using computers in the classroom

Of the twelve teachers, eleven teachers considered using the computer as indispensable and necessary in an era of modern technology. It appeared that they naturally accepted the use of technology as an undeniable part of instruction.

It is natural to use computers in the classroom. Using technologies in the classroom has many benefits to teachers and students alike. It is helpful for increasing students' motivation with effective audio-visual materials. (Teacher F)

It is desirable to use the computer in the language classroom. A traditional Korean classroom environment is very restricted and unnatural for language learning and teaching. However, it is possible for learners to experience more real situations in a technology-enhanced environment. (Teacher A)

Four teachers described the effectiveness of using computers and referred to changes in the way of teaching and presentation methods. For example:

When I teach with computers, I don't need to bring a cassette player with me from classroom to classroom. (Teacher C)

It saves time for teachers because we don't need to write on the blackboard. By using computers, we can offer students interesting lessons full of real pictures, images, animations and video clips. (Teacher E)

Teachers C and D emphasized the importance of CALL as self-directed language learning.

Computer technologies, especially the Internet, provide non-native speakers of English with a rich learning environment. Thus, students can improve their English skills through the use of the Internet. They can practice the activities as many times as they wish. (Teacher C)

It is very good for developing writing, reading and listening skills on-line. I know most institutes have their own homepages and teachers upload useful listening, reading and writing materials for their students. As a result, students can review and practice their tasks on-line at home. (Teacher D)

In summary, most teachers said that computer technologies can positively contribute to the quality of teaching, mode of presentation and learners' motivation and cross-cultural awareness.

Advantages and disadvantages of using computers in the classroom

All teachers pointed out positive aspects of using computers for language teaching. Four teachers described that the provision of real and authentic language materials and resources, especially on the Internet, is helpful for developing students' language skills and attracting their attention. For instance:

There are various authentic resources and materials from English language Websites and software programs. They are interesting, real and creative enough to draw students' attention and interests. Moreover, those materials are visually appealing to the students because they are full of colourful images, sounds, pictures, animations, video files and texts. (Teacher D)

Nine teachers referred to students' induced motivation as an advantage of computer-assisted instruction. Teacher D, in particular, commented that the use of computers made the class more interesting and increased students' class participation.

Students are highly motivated to learn the English language with interest. I feel happy because my students look cheerful in class and they participate in activities very actively. (Teacher D)

Another teacher brought up the issue of the creation of a learner-centred learning environment, while pointing out the teacher's role:

In a traditional teacher-centred lesson, a teacher is a source of knowledge for students, so the lesson is likely to be very boring because students just listen to their teacher and take notes. However, the teacher's role is quite different in a computer-oriented learning environment. He or she guides and coordinates students' activities and help students organize and complete tasks. (Teacher G)

In spite of these positive aspects of computer-assisted instruction, eight teachers pointed out that students' motivation, attention and their interests do not last long.

When teachers use a computer at the beginning stage, sounds and colourful screens draw students' attention and increase their motivation highly, but the problem is that it doesn't last long. (Teacher E)

Well, motivation or attention drawn by computers does not last long. So, teachers need to find a way to catch students' attention during the class. (Teacher F)

The teachers argued that they might be preoccupied with classroom management over learner behaviour while using computers in the classroom. Also, they stated that students' motivation and attention could be distracted by fatigue of students' eyes and necks and environmental reasons such as the fixed classroom layout and poor computer facilities at school.

Many students complained about the fatigue of their eyes and necks because most teachers in my school use the computer in the classroom. (Teacher B)

We don't have a special language lab, so students always watch a projection TV in the classroom. But you know, the size of the screen is not big enough. Students in the back row or in the corner can't watch it well. (Teacher F)

As time goes on, students' behaviour and attitudes toward the technology use become negative. Their attention is distracted by digitized sounds and they don't concentrate on studying. (Teacher I)

When they were asked about disadvantages of computer-assisted instruction, two teachers mentioned a lack of time and stated that they need more time and efforts to create or find teaching materials. For example:

It takes much time for preparing teaching materials and activities. I need to surf the Web, find appropriate materials and modify them according to the levels of my students. Sometimes I need 2-3 hours to create materials for a 20-minute presentation in class. (Teacher J)

Teacher I stated that in the CALL classroom students did not participate in class activities and they were simply watching the screen, doing nothing.

The interaction between students and the computer is one-sided, so the students just watch the screen and listen to the sounds. Computers don't ask any questions to students and make them very quiet and passive. (Teacher I)

Also, five teachers attributed the causes of reducing students' motivation to insufficient facilities of schools and a fixed classroom layout. They argued that typical Korean classrooms designed for teacher-fronted lessons are not suitable for a CALL lesson.

The classroom layout can be problematic because it is not a special language lab, but a normal classroom. There is only one computer, a projection TV and multimedia facilities, but there are around 35-40 students. (Teacher L)

They also pointed out that those environmental factors make students bored and inactive and result in students' distracted attention or non-participation in class. They asserted that the current conditions of their classrooms are not optimal for both CALL and teaching a language. In addition, two teachers brought up dehumanizing factors:

We can negotiate meaning easily in face-to-face communication. But computers can not replace the teachers' role perfectly. Moreover, in language teaching and learning, affective elements such as human feelings cannot be conveyed exactly as speakers say. (Teacher A)

Another problem is related to the dehumanizing effect of computers. Teachers interact with their students in class but teaching with technologies can cause a lack of humanity and an absence of interaction between teachers and students. (Teacher G)

As another negative aspect, Teacher G made a comment on preparation time and said that teachers employed CD-ROMs more frequently than other tools due to its ease of use:

I think teachers' excessive dependence on the computer technology may result in insufficient preparation of teaching materials. Some teachers depend on CD-ROMs too much. They only turn on CD-ROMs without any other resources. (Teacher G)

Overall, the limitations of computer use are related to internal factors, which computers have, and external factors such as restricted computer facilities in schools and teachers' insufficient computer skills. Most teachers pointed out that teaching with computers has some disadvantages in terms of lack of time, students' physical fatigue, limited attention, dehumanizing effect, changes of students' attitudes and learning styles and changes of teachers' attitudes and teaching methods.

Students' language development

Almost all teachers appeared to agree that the use of computers in the classroom can contribute to the development of students' language skills as well as cultural understanding. For instance:

To be good speakers, students should be exposed to the target language as much as possible. I think computer technologies, especially the Internet, provide non-native speakers of English with a rich learning environment. (Teacher C)

All teachers indicated that technological aids such as CD-ROMs, audio CDs, DVDs and the Internet are helpful for the development of listening and reading skills. They said that the simultaneous presentation of sound and real images via the World Wide Web could make language input more comprehensible. For example:

I think that CALL is very effective in fostering listening and reading skills. On the Internet, students can access numerous listening and reading resources, information, materials and activities. (Teacher C)

When using CD-ROMs or the Internet, students can listen to the native speakers, watch video clips, pictures, animation or movies. Those audio-visual features appeal to young students these days. (Teacher G)

They also mentioned that the Internet provides authentic communication with other speakers who have different social and cultural backgrounds.

On the Internet, people can access language materials and resources without time restrictions at home, offices and schools. They can communicate and interact with other people all over the world in the target language. (Teacher I)

I know students can be exposed to the target language and interact with native speakers of English over the Internet in a Korean EFL situation. They can also experience foreign cultures indirectly and they are encouraged to communicate with other people all over the world. (Teacher C)

In addition, another four teachers asserted that teaching EFL with technologies is helpful for promoting students' writing. These comments suggest that students who have limited linguistic skills in EFL contexts can discuss ideas and develop their writing abilities by means of the networked computer. Teacher B claimed that asynchronous e-mail exchanges encourage students to explore ideas and express themselves at their own pace in the target language:

E-mail exchanges can be a great way to share information and foreign cultures with native speakers around the world. Through those activities, students can develop their reading and writing skills. (Teacher B)

Similarly, Teacher E pointed out that students can improve their expressions with various kinds of language samples on the Web and eventually their composition in the target language:

Writing and reading skills will be improved together. With numerous authentic resources and samples on the Web, students can review and compose their writing. This process encourages them to use the target language with less anxiety. (Teacher E)

Based on her practical experience, Teacher I asserted that key palling projects have a positive effect on students' attitudes and performances:

I've carried out class to class key palling projects. I found students' writing was not good enough at first, but they were very interested in writing to their key pals. Most of them participated in key palling projects very enthusiastically. (Teacher I)

In summary, it is obvious that most teachers have positive views on the use of CALL in terms of contributions to language development and cross-cultural understanding. Almost all teachers pointed out that the use of computers in the classroom can facilitate the improvement of students' language skills such as listening, speaking, reading and writing. The Internet, in particular, is an invaluable source for providing students with authentic language contexts and materials that contain important cultural aspects of the target language.

Factors influencing the use of CALL

The teachers' responses clearly indicated that various factors influence their computer use in the classroom. Of eleven teachers who have used the computer for teaching purposes, six teachers were concerned about time. They considered lack of time as a major factor influencing the use of CALL. They explained that they spent a large amount of time in preparing for appropriate materials because they needed to modify, edit and combine the resources they had found from the Web with textbook contents.

I know there are a great number of resources and materials on the Web. However, most of them are difficult to use in conjunction with textbook resources directly. So I need to adjust and modify them according to the level of my students. It takes much time and effort. (Teacher A)

Well, it is not easy for me to find appropriate materials from the Internet. It is very time-consuming to find useful teaching materials and resources. (Teacher B)

Eight teachers considered teachers' lack of computer skills as another influential factor. They confessed that, because of their lack of computer knowledge and skills, much more time is required for creating teaching materials and resources.

I'm not competent in computer skills, so I have some difficulties in dealing with resources and activities obtained from the Internet. It takes much time to modify them to the level of my students. (Teacher C)

Teachers' lack of confidence in computer skills is a matter of concern. If a teacher doesn't know how to use a computer well in the classroom, he or she feels stressed and uncomfortable with using computers in front of a class. (Teacher G)

Five teachers mentioned a lack of computer facilities in schools as another inhibiting factor preventing them from using computers.

The computer facilities in my school are very old and not in good condition. So, they can't support any video clips. (Teacher C)

Personally, insufficient facilities discourage teachers from using technology. In my school, some computers are working slowly and need to be up-dated. (Teacher F)

Also, five teachers regarded curricular restrictions as an impeding element. They believed that there are difficulties in integrating CALL resources and materials into their existing classroom curricula. For instance:

I hesitate to use computers in the classroom because of the strict national curricula. You know, we have a teaching plan which is based on a textbook. Even though teaching with computers is lively and enjoyable, I have to follow the teaching plan and prepare for tests based on textbooks. (Teacher I)

Four teachers stated that many teachers are distressed by criticism or pressure from the society where they live. The following statement suggests that most people expect that teachers are good at computers:

As a language teacher, I've got a stressful pressure from the people in the society. Many people tend to think most teachers should use the computers in the classroom to enhance learning. (Teacher L)

Teacher G also argued that teachers felt stressed and frustrated because of social pressure:

Most people use the computer to send e-mail, access information, book travel reservations, buy products, seek out their friends and engage in countless other activities. This transition has also altered the school's social environment. Parents and students expect that all teachers have to be professionals in special fields of study and computer specialists as well. This social pressure makes teachers stressed, anxious and frustrated. (Teacher G)

Two teachers also asserted that they have discomfort about the demands and pressure that they were encountering from the school and the society. However, they tried to use the computer in the classroom to meet the demands from students and people from the society.

Students are very interested in experiencing foreign cultures. A lot of materials and texts available on the Web are very real and authentic learning resources. Considering those aspects, I am forced to use the computer in the classroom. That is a sort of pressure that makes me use the computer in the classroom. (Teacher B)

On the contrary, Teacher I had positive perspectives on the social pressure that she is confronting at school. She regarded the expectation from the school and the society as a positive and facilitating factor to improve herself professionally:

Actually, I prepare for teaching materials and activities through CD-ROMs or the Internet and offer students real and authentic tasks such as drama or movie scripts in class. So they tend to think I am a hard-working teacher to improve their language skills and it makes me happy. (Teacher I)

Two teachers, on the other hand, stated that teachers' administrative responsibility may hinder the use of CALL:

Korean teachers have to do a number of administrative jobs such as filling in an application form for entrance to a high school, work related to students' enrolment or graduation. After school, heaps of files and documents of which I have to take care are waiting for me. (Teacher H)

We have to do a job of administration as well as teaching. Sometimes, I am overwhelmed by the job of administration in school. It is a big obstacle for most teachers. (Teacher K)

In addition, three teachers pointed out that their main textbooks are not flexible enough to integrate computers into the classroom. For example:

The second difficulty is that textbooks are not developed for CALL. In the textbook, there are many activities based on traditional learning. (Teacher K)

Overall, the teachers indicated that limited time, lack of computer skills, insufficient computer facilities in school and rigid curricula are main reasons for inhibiting the use of CALL in their classrooms. They also pointed out that an excessive amount of administrative work, inappropriate organization of textbooks and social pressure prevent teachers from using computers actively.

Future of CALL in the teaching of EFL

All teachers appeared to agree that the future of CALL would be bright. Teacher D claimed that many schools in Korea would use CALL for improving students' language skills:

My school has a special program for developing students' language skills and cultural awareness while watching a movie for 20 minutes everyday. First, we play a movie and then one of teachers uploads comprehension check-up questions about the scenes to the school homepage. All students need to answer them and their English teachers check them. (Teacher D)

Three teachers believed that it would be prevalent and compulsory in the future to keep pace with the demands of a technology society.

It would be widespread more and more because almost all students and teachers have their own computers at home. When considering this situation, computers must be essential and necessary teaching tools, like books. (Teacher E)

Three teachers highlighted that teaching with computers can be a solution for providing EFL students with an effective, appropriate and authentic language learning environment.

CALL will be compulsory in the future. For the development of communicative competence, language teachers as well as students must be exposed to the target language, but when considering our EFL situation, it is not easy. I think it would be possible in a technology-enriched learning environment. (Teacher C)

On the Internet, people can access language materials and resources without time restrictions at home, offices and schools. They can communicate and interact with other people all over

the world in the target language. I think it is the best alternative to learn a foreign language, experience different culture and overcome current obstacles we have. (Teacher L)

It appeared that all teachers have positive views on the future of CALL. Although there are some contextual difficulties such as insufficient facilities, class size and limited flexibility in curriculum, they seem to believe teaching with computers would be compulsory in the near future.

Suggestions for CALL practice

All teachers made various suggestions for CALL practice in the classroom. Seven teachers claimed that well-equipped computer facilities at school are an essential prerequisite for maximizing the potential of CALL. For example:

If there are well-equipped language classrooms or language labs, CALL would be very effective and progressive because teachers can control or monitor students' behaviour and learning pace easily. (Teacher J)

They argued that schools should provide both teachers and students with sufficient computer and multimedia facilities for successful CALL implementation. Three teachers, in particular, emphasised the need for financial support from the government and the school together with technical support and maintenance of computer facilities at schools. For instance:

All language teachers need their own special language labs which are equipped with computers, multimedia facilities, a projection TV and a big screen. Also, school administrators should keep all computer facilities up-graded and maintained well. (Teacher F)

They also emphasized the importance of administrative support from the school.

I think that schools need to employ more administrative officers to do administrative jobs such as filing of student data and student enrolment. (Teacher F)

Four teachers made comments on the necessity of new software programs which are suitable for the level of their students. They stated that they employed CD-ROMs more frequently for practical reasons while identifying problems related to teachers' excessive use of CD-ROMs:

Korean teachers tend to largely depend on teaching with CD-ROMs based on current textbooks. They always turn on CD-ROMs for some time in every class. (Teacher I)

We just turn to CD-ROMs automatically, listen to dialogues and texts, repeat them several times and follow the content of CD-ROMs without any creative reorganization of teaching materials. (Teacher K)

They also argued that CD-ROMs were never upgraded for 7-8 years and, as a result, teachers tend to teach the same contents with the same tools every year. Teacher J underlined the necessity of level-differentiated software programs:

There are no level-differentiated CD-ROMs. At a school, there are many students with different levels. If a textbook and courseware developers develop CD-ROMs with three different levels such as beginner, intermediate or advanced, students and teachers would choose CD-ROMs according to the levels. (Teacher J)

Four teachers emphasized that they needed proper textbooks designed for CALL and flexible curricula to overcome disadvantages of using computers in the classroom. They asserted that current curricula and the contents of textbooks should be revised and a flexible curriculum is an essential requirement for well-organized teaching plans for CALL.

Having a flexible curriculum is a first step to facilitate technology use in the classroom. Traditionally, Korean parents and students think highly of teaching based on textbooks. But it is not designed for CALL. (Teacher B)

With regard to support for teacher development programs, five teachers recognized that they need to take part in teacher training courses to be competent in CALL.

What we need is to get more teacher training programs provided for teachers' professional development. (Teacher G)

Teachers should have basic technology skills and knowledge in order to guide students to explore computer-based activities. To do that, teachers need to take part in in-service teacher training courses. (Teacher L)

Teacher D recommended school-based small-group teacher training in which a CALL specialist visits the school and teach them how to use computers for language teaching according to the current situation of the school.

The answer is teacher training but it is not easy for teachers to participate in in-service training after school hours. However, if a computer expert visits my school and provides language teachers with training, probably many teachers will take part in the training. I reckon it will be very effective and fruitful in-service training. (Teacher D)

Seven teachers insisted that teachers should join professional organizations, which encourage them to discuss CALL matters with other teachers through on-line or off-line communications. Teacher H said:

We need small groups or meetings of English teachers to share information and teaching materials. If several teachers discuss some problems and difficulties related to CALL with one another and share their opinions and experiences, they can find solutions easily. (Teacher H)

Teachers E and G asserted that teachers tend to learn best by observing methods used in the actual classroom and sharing ideas with fellow teachers or colleagues:

I think the most important resource and idea bank is my colleagues. While observing fellow teachers' class, I usually get many creative activities and resources. (Teacher E)

After teacher training, teachers who participated in the program can organize small groups to share information, materials, resources and teaching experiences with other teachers. I think that teachers are likely to learn best from other teachers because their colleagues can be the best models. (Teacher G)

Teachers' positive attitudes toward the use of computers were also mentioned:

Teachers need to have positive attitudes toward current social conditions and situations around us. If we have negative attitudes toward expectation and reputation from the society,

we would regard them as teachers' obligation and we would feel stressed and sometimes discouraged. (Teacher I)

The most important thing is teachers' personal beliefs and their positive attitudes toward the technology in use. As teachers, we need to learn how computers can be used appropriately in our specific EFL classrooms and how they can be integrated into the current curriculum effectively. (Teacher L)

In addition, three teachers mentioned that teachers should make personal efforts to establish solid learning goals and teaching plans, prepare useful teaching materials and provide students with appropriate activities and tasks in line with students' needs and interests.

In my opinion, the most important consideration is individual teachers' personal efforts to set frameworks for learning, find useful materials, create appropriate activities and teach students. (Teacher H)

One more important thing is that teachers' continuous exploration and passion about the use of computers can make great progress in computer skills. (Teacher G)

They suggested that teachers should continue their professional development in CALL environments.

Discussion

Teachers' perceptions of and attitudes toward CALL

The results of the study indicate that the teachers' perceptions of and attitudes toward CALL are generally positive. As evidenced by the teachers' responses to the questionnaire and interviews, all teachers consider new learning contexts created by the use of computers as essential and desirable environments for the ICT-based global society. They tend to believe that the use of computers adds value to their teaching and CALL is an effective way for improving the quality of their teaching because CALL can provide both teachers and students with useful information and resources, various modes of presentation and authentic contexts. The eleven teachers who had positive perspectives on the effectiveness of CALL tried to use computers and computer-based materials for language instruction although they faced many difficulties in their own contexts. It appears that CALL is accepted among the teachers because they are aware of the benefits of using computers in foreign language learning and teaching.

From a pragmatic perspective, almost all teachers considered technology as a useful teaching aid that can enhance ways of teaching by offering students a variety of language inputs and expanding students' learning experiences in real contexts. This supports the findings of Lam (2000) indicating that teachers consider technology as a tool or as a means to assist learning and teaching. The teachers argue that computers, the Internet and CD-ROMs could offer new opportunities for better language practice. They state that the use of educational technologies can make the process of language learning easier and faster and play a key role in the Nation's Educational Reform Plan.

However, the teachers agree that using computers in the classroom cannot completely ensure better quality of education. They tend to think that the quality of education depends exclusively on the quality of teachers, not the use of technologies, and think that their positive attitude and continuous attempt to introduce new technologies and teaching materials to the class guarantee effective

language instruction. This confirms that the roles of teachers are critical in structuring the learning process, organizing activities and evaluating materials in the CALL classroom, as emphasized by many researchers (e.g., Han, 2006; Jeong, 2006; Johnson, 2002; Lam & Lawrence, 2002; Schulz-Zander, Büchter & Dalmer, 2002).

Half of the teachers perceive that teachers' readiness or enthusiasm for CALL implementation helps students improve language skills. They consider CALL classrooms as learner-oriented learning environments where students' self-directed and independent learning increases. In the new environments, students can be at the centre of learning - they are responsible for their work, manage their learning by gathering information and control the pace of learning. The teachers in this study are aware of their new roles as activity guides or facilitators, not all-powerful judges for the learning process. They seem to be aware of the role transition in the CALL classroom and try to cope with new demands of ICT-based society.

On the other hand, the other half of the teachers have a different point of view on teachers' roles in the CALL classroom. It appears that those teachers' actual reactions to the new roles of teachers in learner-centred environments created by the use of computers are not encouraging. They tend to believe that they should play dominant roles and take a responsibility for controlling students' progress and activities. It is assumed that these teachers might not have sufficient theoretical and practical knowledge of CALL although they generally accept the benefits of CALL.

Also, the expectation that teachers should be experts in the use of computers is not fully supported by the teachers, although they seem to be convinced that CALL makes language learning interesting. The findings indicate that five teachers are anxious about the expectation from parents, students, colleagues, schools and society that all teachers should be capable of teaching with computers in the information age. They seem to feel stressed and have discomfort about the criticism and pressure from the society. In order to respond to the expected roles in an ICT-based society, however, it is recommended that teachers should be aware of the fact that the use of computers in the classroom requires different teaching styles, approaches and methods. If teachers consider those educational shifts as incentives to improve the quality of their teaching, they would be able to accept a series of the new changes related to CALL implementation.

Teachers' preferences in CALL practice

The teachers in the study agree that computer technologies are helpful for enhancing students' language learning. They prefer to use a Word Processor, PowerPoint, the Internet and CD-ROMs in the classroom as teaching tools. Among the tools, they consider the Internet and CD-ROMs as the most effective teaching aids in their teaching. In spite of limited computer facilities at schools, they tend to believe that the Internet can be used in various ways and provide students with opportunities to engage in real and authentic learning, which is in great demands in Korean EFL contexts. They also agree that teachers and students can communicate with native speakers of English with computer-mediated communication (CMC) tools over the Internet. Such experiences can help language learners develop their communicative competence through interaction with other people, practice the language beyond the classroom and understand cultural diversities. It is in line with current Korean EFL education, which is focused on the development of learners' communication ability to use the language in socially, contextually and culturally appropriate contexts.

The teachers are convinced by their own experiences with computers that CALL can make the class more appealing to students and increase students' motivation. They seem to accept the Internet as a valuable source of information for experiencing foreign culture and understanding people with different backgrounds. Although all teachers in the study perceive that the Internet can be a

powerful tool in language learning and teaching, however, they report that they can not employ it directly in the classroom for a number of reasons (e.g., teachers' lack of computer skills, strict curricula and insufficient time). They also insist that they need to adapt Internet-based resources and materials in a way to respond to the needs and levels of students.

The teachers tend to employ CD-ROMs most frequently in their teaching since the Ministry of Education (MOE) in Korea had developed software on the basis of textbooks and approved its use for each grade level. Once textbooks and CD-ROMs have been developed and approved by MOE as authorized educational tools, they are distributed in the whole country and, as a result, teachers are expected to use the CD-ROMs in language classrooms for 6-7 years. Eleven teachers report that they use the CD-ROMs simply due to the ease of use. Nevertheless, they recognize the disadvantages of using the CD-ROMs excessively. Three teachers point out that the fact that they depend on the CD-ROMs too much influences their teaching styles and attitudes toward the preparation of class negatively. According to them, it is possible to teach students without any preparation of additional teaching materials even though there are problems of upgrading and selecting level-differentiated contents of the CD-ROMs.

They also state that they have never been asked to respond to questionnaires, surveys or interviews regarding their experiences in using educational tools such as CD-ROMs. In order to meet the demands or needs of teachers, therefore, the MOE and educators should make their efforts to develop appropriate software programs and textbooks that reflect teachers' and students' needs and interests and encourage their active involvement in developing and upgrading the educational tools. Also, individual teachers need to find ways of using the Internet and CD-ROMs effectively although they are facing difficulties in their teaching contexts. It is important to note that the focus of language learning in Korean EFL contexts is not the use of computers but the improvement of students' communicative language skills.

Factors affecting CALL implementation in the classroom

Although most teachers in the study have accepted the usefulness of technology and somehow utilized computers in the classroom, they are confronting a number of difficulties or barriers in CALL implementation. The results of the study confirm several factors that have already been identified in previous studies (e.g., Albirini, 2006; Egbert, Paulus & Nakamichi, 2002; Kim, 2002; Lam, 2000; Lee & Son, 2006; Shin & Son, 2007; Smerdon et al., 2000; Yildirim, 2000). External factors such as limited time, insufficient computer facilities at school, inflexibility of curriculum and textbooks, lack of administrative support from the school or the government and pressure from the society are closely related to educational environments or contexts. On the other hand, internal factors such as teachers' limited computer skills and knowledge about CALL and their perceptions of and attitudes toward CALL are directly related to teachers. It appears that these external and internal factors affect the implementation of CALL significantly.

Limited time is one of the most common barriers that influence teachers' use of technology in the classroom. It seems time-consuming for teachers to search for appropriate on-line materials and use them together with textbooks to meet the levels and needs of students. Teachers' lack of computer skills and knowledge, in particular, make them uncomfortable in front of a class and add extra time for preparing teaching materials and resources. This indicates that teaching with computers requires more time and effort from teachers. A lack of computer facilities in school also prevents teachers from using computers actively in the classroom. Technical difficulties such as outdated computer hardware and software and Internet connection problems also discourage teachers to use computers.

This means that teachers need better technical support and more advanced computer facilities to use CALL effectively for teaching purposes.

Another obstacle to CALL implementation perceived by the teachers in the study is the difficulty of using on-line resources within the existing curricula. The teachers assert that they must follow strict teaching plans and class schedules given by the MOE. Teachers' instruction, class activities and evaluation plans have to be suitable for the standard of the national curriculum. Several teachers also point out that a lack of administrative support influences their use of CALL. They state that there never seems to have enough time to prepare Internet-based materials and to incorporate CALL activities with the contents of textbooks since they are confronted by an overwhelming amount of administrative work.

The results of the study also indicate that social pressure can have a negative or positive impact on teachers' decision about the use of CALL, material preparation, activity design, class management and lesson planning. While four teachers have negative feelings about social pressure and expectations from others, three teachers assert that they should do their best to meet the demands from the school and society as an innovative teacher. They add that the pressure makes teachers be frustrated and discouraged at first, but eventually it is a driving force or a facilitating factor to improve their teaching skills and knowledge. They emphasize that teachers should participate in teacher training actively to improve their computer skills and build up self-confidence. At this point, it seems certain that teachers' positive attitudes toward social demands and enthusiasm for professional development significantly influence their willingness to utilize CALL in the classroom.

These findings suggest that the difficulties and obstacles teachers encounter in their teaching situations affect the implementation of CALL. Therefore, teachers should look for possible ways to overcome those external and internal barriers that influence their decisions on the use of CALL. They need to accept and respond to the changes to educational environments. To do so, they should participate in teacher development programs actively and make personal efforts to apply what they have learned to their own teaching contexts.

Suggestions for improving CALL practice

For the implementation of CALL in the classroom, the teachers in the study suggest that well-equipped computer facilities, language labs and appropriate technical and administrative support should be provided. The teachers also urge the need for reconsidering current textbooks and national curriculum for CALL practice. They also emphasize the importance of the improvement of the CD-ROMs they use frequently in the classroom. They insist that their CD-ROMs need to be upgraded and adjusted to meet the demands of teachers and students. This implies that teachers' decision to use CALL in the classroom can be influenced by the availability of resources, convenience of tools and their personal experiences.

The results of the study support the view that teacher training is especially important for the successful implementation of CALL. Training can be based on one-to-one or small group tutoring so that teachers can practice computer literacy skills and can be competent in CALL in their own contexts. It should allow teachers to connect their knowledge and skills for CALL with textbooks they use for their actual teaching. Another advantage that school-based teacher training can offer is that language teachers can learn how to use computers effectively by observing and talking to fellow teachers in the same school. As a result, supportive and collaborative relationships between fellow teachers with the same needs are formed in familiar and friendly learning environments and teachers support each other for team teaching, planning lessons and solving technical problems.

The teachers agree that useful Websites developed by ESL/EFL teachers can be used to share hands-on materials and activities with other teachers without much time-consuming preparation. They also agree that joining communities of ESL/EFL teachers can be helpful for discussing teaching ideas and CALL resources with other professionals. Through face-to-face group meetings or on-line discussions, they can talk about issues of CALL pedagogy with other teachers. It is clear that teachers' personal efforts are required to integrate CALL into the classroom. Even though CALL allows teachers to employ a variety of resources and materials for enhancing their teaching, it is up to teachers to maximize the potential of CALL.

Conclusions and Implications

As computer technology plays a more and more significant role in education, it is necessary for language teachers to examine how to integrate CALL into the classroom. The findings of the study reported in this article indicate that the Korean teachers of EFL have positive attitudes toward the use of computers in general and recognize the benefits of using CALL in the language classroom. They think that the future of CALL is bright since the computer has become a basic tool for learning and teaching. While agreeing that CALL can provide students with highly motivated learning environments and opportunities to engage in meaningful and authentic learning, they point out that the Internet serves as a useful educational tool for motivating students, providing a large amount of information, teaching resources and materials and a place for experiencing different cultures and communicating with other people in the target language.

While the teachers are convinced of the usefulness of CALL, they encounter a number of factors that affect the implementation of CALL in the classroom. Those factors can be categorized into internal factors and external factors. Internal factors include teacher-related factors such as teachers' attitudes toward CALL and their knowledge of and skills for CALL, whereas external factors include context-related factors such as computer facilities and technical support. It is suggested that teachers should consider the inhibiting and facilitating factors carefully and overcome barriers that make them feel reluctant to use CALL in the classroom. For example, teachers should look for ways to deal with internal barriers associated with their insufficient computer skills and negative views of the use of CALL. It is evident that teachers' positive perspectives of and attitudes toward computers influence the use of CALL significantly and improve their overall understanding about language education, the quality of teaching and CALL practice. On-going teacher training should be organized and conducted to improve teachers' confidence and competence in the use of CALL with positive views of CALL.

Although the findings of the study cannot be generalized due to the small sample size and limited reflection of a particular teaching context, they offer several theoretical and practical implications for effective CALL implementation in EFL contexts. First, it is suggested that teachers should be provided with well-equipped computer facilities and technical and administrative support. Even though teachers have positive attitudes toward CALL, limited availability of computer facilities can make them feel discouraged to use CALL. If sufficient computer facilities assisted by technical support are available at schools, teachers would be inspired to use CALL actively in their classrooms. Second, in order to reduce the discrepancy between teaching with technology and existing curricula, educators who develop educational software and language programs should make links between textbooks and curricula in line with CALL pedagogy. Third, educators should develop level-differentiated CALL software programs to respond to students' needs, interests, backgrounds and learning styles. The programs must be upgraded regularly to reflect feedback from teachers and students. Fourth, school-based small group teacher training is recommended because it can provide individual teachers with sound pedagogy and practical skills for CALL. It can be based

on one-to-one or small group tutoring in order to give teachers enough opportunities to practice necessary computer skills and teaching methods applicable to their classrooms. Through this kind of training, teachers can acquire computer literacy and integration skills, develop positive attitudes toward CALL and build up supportive and collaborative relationships with colleagues at their schools. Fifth, CALL-related organizations, communities or ESL/EFL Websites for local teachers can be helpful for sharing valuable teaching experiences with CALL, creative ideas, useful information and resources with others. Through on-line discussions or off-line meetings, teachers can discuss practical issues of CALL with other teachers. Finally, teachers need to have positive attitudes toward the changes of society and technology use. Teachers' personal beliefs of the advantages of CALL are helpful for improving their self-confidence and practical teaching skills. Therefore, it is important for teachers to make personal efforts to set up learning goals, prepare authentic materials suitable for the level of students and integrate them into the classroom.

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