TEACHING CRITICAL, ETHICAL AND SAFE USE OF ICT IN PRE-SERVICE TEACHER EDUCATION

Sang-Keun Shin, Ewha Womans University

This paper describes two studies that examined the awareness of pre-service English teachers regarding issues of digital literacy, fair use of digital materials, and e-safety. The participants in Study One designed reading and listening lessons utilizing online materials and then evaluated their lessons in terms of digital literacy and fair use. The participants in Study Two designed writing lessons based on social network services or online environments and evaluated the resulting lessons in terms of e-safety. This article reports on how these activities influenced selection criteria for online materials, methods for gathering instructional materials, and lesson plans. The results indicated that, initially, the pre-service teachers rarely considered these issues when selecting materials or designing class activities. The findings also showed that the participants' awareness of critical, ethical, and safe use of information and communication technologies was raised through activities for evaluating and discussing the selection of instructional materials and the lesson activities associated with them. Implications for teacher education in computer-assisted language learning are discussed.

INTRODUCTION

The potential of information and communication technology (ICT) in language instruction has opened up a new chapter in the field, and the ability to use ICT in the classroom is increasingly considered an important qualification for language teachers. According to Teaching English to Speakers of Other Languages (TESOL) standards for P-12 Teacher Education Programs, teaching professionals are expected to be knowledgeable about the selection and use of technology, such as computer software and Internet resources, to enhance language and content instruction (TESOL, 2010). The TESOL Technology Standards (TESOL, 2008) have also been established, and stipulate how English language teachers and teacher educators should be using technology inside and outside of the classroom.

An increasing number of teacher education programs are recognizing the importance of ICT skills for teachers and are now offering such courses (Hubbard & Levy, 2006). In this regard, Korea is no exception, with most English language teacher education programs including courses in computer-assisted language learning (CALL) (Shin, 2010). Although the specific details of such courses may vary according to the program or the learners' needs, they generally address such issues as theory and benefits of CALL and how to integrate technology into language teaching. They also aim to help teachers develop competence in computer applications and lesson planning that incorporates technology. One area that has been overlooked in many such courses is the issue of ethical and safe use of ICT. One of the standards presented in the TESOL Technology Standards (TESOL, 2008) stipulates that "language teachers use technology in socially and culturally appropriate, legal, and ethical ways" (p. 23).

When using online materials, it is crucial to evaluate their quality (Shetzer & Warschauer, 2000). Unlike

conventionally published materials, many online materials do not undergo a review process before their release. If online materials are used without critical review of their suitability, there is a risk that teachers will present inaccurate, inappropriate, or even dangerous content to learners. In ICT-assisted instruction, the issue of fair use is another area that requires much more attention (Ludlow, 2003). When teachers use images or audiovisual materials in class, they run the risk of copyright infringement. In addition, instruction that uses social network services (SNS) may raise issues of privacy violation or e-safety (Katz, 2012). When selecting online teaching materials or planning learning tasks that integrate ICT, it is important for teachers to consider these issues to ensure that they select appropriate classroom materials and design activities that do not expose students to danger. In addition, teachers have a responsibility not only to set a good example for proper ICT use, but also to teach their students safe and fair ICT use (Bitter & Legacy, 2008; Crawford, 2013).

Although these issues are important factors that must be considered in any type of instruction, they are especially relevant to ICT-assisted instruction (Hafernik, Messerschmitt, & Vandrick, 2002). While previous studies on CALL have tended to focus on the potential benefits of CALL, teacher education, and barriers to its use, little attention has been paid to safe and fair use of ICT. Courses on CALL reported in prior studies often do not address these issues, and, with a few exceptions (de Szendeffy, 2005; DuBravac, 2012), this area is rarely mentioned, or is handled in a very perfunctory way in the available literature. As a result, it is not clear how teachers view safe and fair use, or how much they consider these factors in their lesson planning. Is it also not clear how teacher training programs should prepare teachers to handle issues of safe and fair use that may arise during ICT-assisted instruction.

To address these gaps, this study examined the effects of classroom activities that analyze CALL lessons and materials on pre-service teachers' awareness of digital literacy, e-safety, and fair use of ICT. Specifically, with a view towards digital literacy and fair use, this study analyzed how pre-service teachers selected and obtained instructional materials for reading and listening lessons created in a course on CALL. In addition, with a view towards e-safety, this study analyzed writing instruction activities based on online and SNS developed by pre-service teachers in a methods course on teaching second language writing. The results of this study are expected to provide useful information on teaching strategies that can guide teachers and their students into safe and responsible use of ICT.

LITERATURE REVIEW

Digital Literacy

Digital literacy generally refers to the ability to use digital media to find needed information and evaluate its quality, as well as the ability to create new information through the use of various digital media. Although definitions of digital literacy vary slightly, it generally includes the following abilities: to search for and find needed information; to select suitable materials by critically reviewing the found information; to use various digital media ethically and safely; and to collaborate with others (Coiro & Dobler, 2007; Gilster, 1997; Kress, 2003; Lemke, 1998; Leu, Kinzer, Coiro, & Cammack, 2004; Shetzer & Warschauer, 2000).

Among the many elements of digital literacy, the ability to find and critically evaluate information is especially important in ICT-enhanced education. Digital literacy needs to be particularly emphasized in the field of language teaching because teachers often use online materials and ICT tools to enhance the authenticity of teaching materials and language learning tasks (Brandl, 2002; Kramsch, A'Ness & Lam, 2000; Rüschoff, 2004). It is indisputable that the determination of the accuracy, morality, appropriacy, or harmfulness of materials is relative rather than absolute, and may differ according to circumstances or cultures. However, compared with offline materials, which typically have clearly identifiable authors and publishers and undergo reviews and editing, online materials can be uploaded by anyone and often have unclear authorship, and these factors clearly give them a greater likelihood of containing potentially risky

or unreliable content (Burbules & Callister, 2000).

Despite the multitude of problems associated with online materials, many students believe that, like books and encyclopedias, online materials are also accurate. In a study by Livingstone and Bober (2005), 49% of the children surveyed in the United Kingdom thought that information on the Internet could be trusted, and 38% trusted most of it. Serious problems may arise if young learners are exposed to materials that are immoral, commercial, or dangerous. With language proficiency too low to evaluate writers' linguistic choices, second language learners may have even greater difficulty perceiving the underlying bias, values, and ideologies present in such materials (Clark, 1993; Hedge, 2000; Wallace, 1992).

When a teacher selects materials to use in class, the materials should undergo a critical review process. Such review skills should also be fostered in students (Warschauer, Shetzer, & Meloni, 2000). Although it is important for students to be equipped with critical reading skills for conventional printed texts (Graff, 1989; Wallace, 1992, 2003), these skills become even more important when reading content on websites or SNSs (Jonassen, 2000; Kamil & Chou, 2009; Luke, 2002). A study on Internet searching conducted by Kafai and Bates (1997) that targeted children from grades 1–6 found that students tended to use only the titles of web pages when selecting which hits to visit, making it difficult for them to find the best sites among their search results. Furthermore, Large and Beheshti (2000) reported that Canadian elementary school students tended to simply browse because they had difficulty determining appropriate keywords. They also experienced difficulty in determining which sites among their search results contained the information they were looking for.

To allow students to effectively search and then evaluate the material they found and select relevant information, they must be taught digital literacy (Eagleton & Dobler, 2007; Kuiper, Volman, & Terwel, 2005). Models currently in use to evaluate websites include the following: the five W's of website evaluation (Who? What? When? Where? Why?), proposed by Schrock (2013); the RAVEN (Reputation, Ability to see, Vested interest, Expertise, Neutrality) model (Crawford, 2013), which is widely used to build critical literacy skills; and the five criteria of Accuracy, Authority, Currency, Coverage, and Objectivity (Kapoun, 2013). To get a firsthand understanding of the importance of evaluating the quality of online materials, students should be given opportunities to directly experience it for themselves (Warschauer, Shetzer, & Meloni, 2000) for example, by supplying a checklist of assessment criteria for online materials and having them try to assess the level of quality. It goes without saying that second language (L2) teachers themselves should first possess such abilities in order to cultivate them in their students.

Fair Use

Even without knowledge of the exact provisions of copyright law, it is unlikely that any ESL/EFL teacher is ignorant of the concept of copyright protection. However, it appears that few language teachers have precise knowledge of copyright regulations or give serious consideration to copyright in the classroom setting. Most tend to think that using copyrighted materials for educational purposes inside the classroom is not a big problem, as long as it is not for commercial purposes (Averill, 2003; Bitter & Legacy, 2008).

In the United States, even though there is a doctrine of fair use, its application is vague in many circumstances (Bruwelheide, 1995; Gasaway, 2002). The fair use doctrine, codified by the Copyright Act of 1976, permits some copying and distributing without requiring permission from the copyright holder. The statute does not clearly define fair use, but rather sets forth four factors to consider when judging fair use: 1) the purpose and character of the use; 2) the nature of the copyrighted work; 3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and 4) the effect of the use upon the potential market for or value of the copyrighted work. Similar acts addressing digital copyright are the Digital Millennium Copyright Act (DMCA) of 1998 and the Technology, Education, and Copyright Harmonization Act (TEACH) of 2002. However, except in very few cases (DuBravac, 2012), it is difficult for laypersons such as teachers to obtain easily understandable materials that clearly

explain what is and is not allowed.

It can be argued that there is inadequate concern about the copyright of online materials, compared with print publications. In some cases, credit for online content is not given because it is often unclear who holds the copyright. Users may even believe that some online materials are not protected by copyright simply because they are open and accessible to all. Even more concerning is the fact that online materials can easily be sent to others or posted online, either reproducing them in their exact original form or editing them according to one's needs (De Szendeffy, 2005). For example, when gathering materials for listening instruction, teachers may obtain audio or video files from illegal file-sharing websites or illegally record or capture material without permission. Materials can also be altered to meet the learning objective and the learners' level, such as adjusting the speed or inserting captions.

The computer skills required for such tasks are often taught in CALL courses. While these skills are useful for increasing instructional effectiveness, they carry a high risk of unfair use if improperly applied. In general, the issue of plagiarism in student writing is dealt with extensively, but there is relatively little concern for the copyrights of instructional materials used by teachers. Moreover, as pointed out earlier, most teachers have limited knowledge about copyright regulations (Averill, 2003; Bruwelheide, 1995; Park, 2012).

Using illegally obtained materials in the classroom is problematic, and teacher-training programs should routinely teach what is and is not allowed, how to obtain permission from copyright holders, and how to effectively instruct students on copyright issues. Rather than simply advising teachers to protect copyright and be careful not to violate it, a more proactive approach is needed, such as providing reference materials like the Fair Use Checklist (Cornell University, 2009), classroom copyright chart (Davidson, 2002), and specific guidelines for educators (DuBravac, 2012).

E-safety

In addition to the easy availability of a wide range of online materials, another benefit introduced by ICT is the capacity for synchronous or asynchronous communication, including blogs, online chat, Twitter, Skype, text messages, e-mail, and wikis. Because these media offer a variety of real-world communication opportunities (Blake, 2000; Herring, 1996; Levy & Stockwell, 2006), they open up many new teaching possibilities in language education. Students can engage in writing activities for a real purpose with a real audience, have videoconferences with individuals at remote locations, and work collaboratively with students elsewhere. Postings can be made to SNS sites without much difficulty, and real-time feedback on posted material can be exchanged as comments or postings. With the increasing prevalence of digital media-based communication in today's world, students need to master these digital literacy skills if they want to participate fully (Warschauer, 2000).

Although the use of these media opens new possibilities in language teaching, it also presents a new challenge, namely e-safety. First, as pointed out above, there is the constant possibility that students will be exposed to harmful information (Miller, 2001). According to Livingstone and Bober (2005), 38% of children surveyed had seen pornographic pop-up advertisements and 36% reported stumbling upon pornography sites while looking for other information.

Another problem is the possibility of violations of privacy when personal information is posted to bulletin boards, e-mails, text messages, or blogs. When instructional activities require registering at a website or posting information to an SNS, students' personal information may be exposed, and there is a constant risk of information being disclosed to unwanted third parties. In addition, teachers of young learners should be especially vigilant because their students could be approached by strangers or encounter dangerous situations like online 'grooming' by pedophiles or cyber-bullying may arise. In a survey conducted by Sharples, Graber, Harrison, and Logan (2009) in the United Kingdom that targeted 2,611 8th–10th graders aged 11–16, 27% responded that they had been contacted by strangers through instant

messaging and 14% reported receiving such contact frequently. Similar findings were found for e-mail. Regarding online bullying, 13% of the youngsters reported that others had occasionally posted photographs of them that they wished hadn't been posted, and 10% reported that others had occasionally written unacceptable things about them. These findings indicate an urgent need for e-safety education.

When planning lessons, teachers need to be mindful not to put students at risk, and should teach children concrete strategies to protect themselves. Teachers are in a prime position to teach them about the kinds of risks that exist, the dangers of corresponding with or meeting strangers, and coping strategies for incidents of cyber-bullying or invasion of privacy. In order to prevent this danger, some schools prohibit the use of SNSs altogether (Department for Children, Schools and Families, 2008). However, rather than resorting to such a measure, it may be more desirable to empower students to protect themselves, considering the wealth of educational value that SNSs can provide. For example, teachers may advise students to make their accounts or posts private, visible only to designated viewers. Educators can also emphasize that students themselves should strive to become responsible users. That is, students should not only be protected from becoming the victims of cyber-bullying, but they should also be steered away from becoming perpetrators.

This section has described three key aspects among the potential problems associated with ICT-assisted instruction. Unfortunately, these issues do not receive significant attention in teacher training programs, and few studies have been conducted on the specific problems that teachers face, how they handle such problems, and how education programs should prepare them. This paper reports on two studies designed to address these issues.

STUDY ONE

In Study One, pre-service teachers were asked to use online materials to design listening and reading lessons. The objective of the study was to determine their awareness of digital literacy and fair use by analyzing the kinds of criteria they used in selecting materials and how they obtained those materials. Analyzing reflective journal entries the participants had posted, the study also examined whether any changes in the pre-service teachers' awareness regarding those two issues occurred as a result of subsequent activities to evaluate the lessons from the perspective of digital literacy and fair use.

METHODS

Participants

Study One was conducted with the participation of 25 university students enrolled in a required course on CALL entitled "Information Society and English Education," taught by the author of this study. The university students were majoring in English education with the goal of becoming secondary-level English teachers in Korea. The intensive between-semesters course consisted of 16 sessions in total, held from Monday to Thursday for three hours a day over a period of four weeks. For each session, theory was addressed for about one hour, and the remaining two hours were spent in the computer lab. This intensive course was offered between semesters for those students who were unable to take it during the regular school year, mostly juniors and seniors who had been studying abroad or who were pursuing a double major.

During the course, the pre-service teachers completed a variety of individual and team assignments. Study One focused on two team tasks involving the design of reading and listening lessons. For these team activities, the pre-service teachers were divided into seven teams of three or four members. The task objectives were to use the theories and computer skills covered in the course to design actual lessons. After the assignments were submitted, the teams performed activities to evaluate each team's teaching materials in terms of digital literacy and fair use. The trainees were provided with checklists and relevant materials to serve as evaluation criteria. In order to identify the pre-service teachers' ordinary, unschooled

practices in utilizing online materials, the issues of digital literacy or fair use were not addressed until the evaluation activity. Brief descriptions of the resulting reading and listening lessons and associated classroom activities are provided below.

Reading Assignment

Before teams were assigned to design reading lessons using online materials, the class examined possible online materials and instructional activities for reading instruction. After going online to find reading materials about body language, a topic covered by many textbooks, the teams planned lessons that included at least one pre-reading activity, three while-reading activities, and one post-reading activity. The teams were allowed to select the target levels themselves. In addition to submitting the lesson plans and class handouts, the teams were also asked to report on the criteria used to select reading materials. When the assignment was submitted, each team was asked to evaluate the reading lesson of another team in terms of digital literacy. An evaluation checklist was given to each team (see Appendix A). Whole-class discussions followed. The teams were allowed to revise their assignments if they found it necessary, and were given a week to submit the final version of their assignment.

Listening Assignment

As in the reading assignment, the class covered the definition of listening, models of listening, and principles of listening instruction. This was followed by a look at examples of websites that offer listening materials able to be utilized in the classroom and sample classroom activities. The pre-service teachers also practiced techniques for editing audio and video files. Following this, teams were assigned to use online materials to design listening lessons set in a shopping mall or office. Each team planned both audio- and video-assisted lessons based on an instructional model of their choice, selecting from among Presentation Practice Production (PPP), Task-Based Language Teaching (TBLT), or pre-, while-, and post-listening activities models. Teams consisted of the same members as in the reading assignment task. As with the reading lessons, teams were allowed to select the target levels themselves and were asked to report the materials' selection criteria. They were instructed to edit the audio materials by altering their speed and adding repetition, while for video files they were instructed to work with captions, transitions, and altering the speed. The teams were required to submit the audio and video materials they had worked on, together with the lesson plans and class handouts. After the assignments were submitted, the pre-service teachers were given time to evaluate their own teams' listening lessons in terms of copyright issues. A checklist was given to each team (see Appendix B). After each team had evaluated its own lesson according to the checklist, a whole-class discussion was held. The teams were then allowed to revise their assignments if deemed necessary and were given a week to submit the final version.

Daily Reflective Journal

Before the end of each class, a 5-minute period was allocated for the trainees to reflect on the content of that day's lesson and post their thoughts on web-based threaded discussions. Specifically, they briefly summarized that day's activities in an online journal, wrote comments on what they had learned, and noted the content they wanted to know more about. These entries, originally written in Korean, have been translated into English for this report.

Results

Changes in awareness related to digital literacy

In this study, pre-service teachers planned lessons around materials found online for reading and listening (audio and video), and had to present their selection criteria. Table 1 shows an analysis of the criteria for selection of instructional materials reported by the participants, both before and after taking part in evaluation and discussion activities related to digital literacy. The criteria are listed in descending order of priority based on the number of teams mentioning each criterion.

As Table 1 shows, prior to the activity, the pre-service teachers used criteria similar to those they typically apply when selecting offline materials. The most important criteria were the level of relevance to the topic, level of difficulty, and amount of material. For listening materials, importance was also placed on factors affecting intelligibility, including accent, clarity, and speech rate. All of those criteria are important pedagogical factors that certainly need to be considered when selecting materials for reading or listening. However, the problem is that no consideration whatsoever was given to certain additional factors that ought to be considered when selecting online materials. However, after taking part in classroom activities related to digital literacy, the teams added new criteria, namely the accuracy and propriety of content and the credibility of websites. The correctness of the English language was also considered by two of the teams. Three of the teams changed the actual passages they used.

When the pre-service teachers' daily reflective journal entries were analyzed, six out of the 25 students mentioned having learned about digital literacy in other classes. However, not a single student wrote that they normally review online materials critically:

> In the past, I didn't usually do much checking of the content itself; rather, I would mainly check whether the texts had the right level of difficulty. But I've come to realize that I need to thoroughly consider the content, too. I used to think that, as long as the content was not obscene or violent, there was no problem. But I've learned an important lesson that the content itself may not be accurate, or intentionally wrong information may even appear.

> In my tutoring work, I sometimes find texts online to use as reading materials. In the past, I would select them without much thought, as long as the readability and the length were appropriate. But it never occurred to me that some websites' content could be wrong.

Analysis of the selection criteria showed that before the activity the trainees did not check the accuracy and credibility of the sources, whereas after participating in the activity, their awareness of digital literacy issues was increased and they began to review the appropriateness of materials from various angles.

Table 1. *Selection Criteria for Materials*

Reading Assignment				Listening Assignment			
Original version		Final Version		Original version		Final version	
Criteria	No. of teams	Criteria	No. of teams	Criteria	No. of teams	Criteria	No. of teams
Level of relevance to topic	7	Level of relevance to topic	7	Level of relevance to topic	7	Level of relevance to topic	7
Level of difficulty (vocabulary, grammar)	7	Level of difficulty	7	Level of difficulty of vocabulary	7	Level of difficulty of vocabulary	7
Amount of material	7	Amount of material	7	Pronunciation (accent, clarity)	5	Amount	7
Interest	5	Accuracy, values of materials (biased or misleading information)	7	Rate of speech	5	Rate of speech	7
Genre of text	3	Credibility of website	5	Amount of material	5	Propriety of content	5
		Correctness of English	2			Credibility of website	3

Changes in Awareness Regarding Fair Use

To confirm the materials' sources and any consideration given to copyright, as well as whether copyright issues had been resolved, the selection criteria and sources of their original assignments were analyzed, and the class handouts prepared by the teams were checked for source citations. These analyses revealed that, in the class handouts, most teams did not mention the sources for the materials. Not a single team disclosed the source of the reading materials, and only one team provided the source of its listening materials, which was a movie. With respect to permission to use the sources, none of the teams had sought permission from the copyright holders. With the exception of a dialogue recorded by the members of one team themselves and a video file provided by the instructor that was used by another team, all of the materials had been collected using illegal means. The participants even shared information about how to obtain materials illegally. One team explained on a bulletin board how to download streaming video clips for which downloading is not permitted. Another team posted information on how to save images from web pages where the right-click menu options had been disabled.

The sources of audio materials included material from a textbook audio CD copied to a computer drive for two teams, material copied from the Internet for one team, and files downloaded from the Internet for three teams. In addition, one team recorded its own material. In the case of video materials, three teams illegally obtained sitcom video files from the Internet, two teams illegally obtained movie files from file-sharing sites, one team illegally downloaded Internet material, and one team used a file provided by the instructor.

After completing copyright-related activities, all the teams had changed their lessons to abide by copyright laws. They produced final versions in which the sources were cited on the class handouts and the materials were either purchased or permission had been granted by the copyright holders. In the case of audio files, the files were either purchased or self-produced. In the case of video files, the teams used either video files they had purchased or free files from public agencies. The purchased files had been tagged with conditions for their usage and were permitted to be used for educational purposes in the classroom. One team obtained a file from a copyright holder in a foreign country by sending an e-mail requesting permission to use the copyrighted material, after which they received the audio file by e-mail, along with permission to use it.

A change of awareness towards violation of copyright was also noted in the daily reflective journal entries. Almost all the pre-service teachers acknowledged having infringed upon copyright law by illegally downloading online materials for personal use, while 15 trainees noted that they had believed that downloading materials for educational purposes, such as classroom presentations, fell into the category of fair use.

> Actually, I had the impression that it was okay if the materials were being used for educational purposes. But now I understand how absurd it is to use illegally obtained materials in the classroom.

> In the past, I usually got files online, even though I felt uneasy. I didn't give it much serious thought. But I came to realize that, when I become a teacher, I shouldn't do it because it may lead to trouble and set a bad precedent. When even I don't do it, how can I tell the kids to credit their sources?

Although the pre-service teachers realized the importance of obtaining instructional materials legally, as in the following excerpts, nine trainees reported feeling frustrated because they remained uncertain of the exact rules even after the activity.

> It seems like, in practice, it would be nearly impossible to obtain materials this legal way. It takes too long, and it's not always guaranteed you'll get good materials. It'd be nice to edit the materials

before using them, but it was dispiriting to hear that this may lead to trouble. I wonder, though, isn't it all right to edit textbook materials?

Of course, I know it makes no sense to obtain materials illegally, but to me, even if you've got the materials, the extent to which you can use them seems unclear. And, it seems like I heard that it's okay to use them for educational purposes in the classroom, as long as it's not for commercial purposes.

In summary, the results of Study One showed that digital literacy and copyrights were not taken into consideration when the pre-service teachers designed their lessons. Subsequently, an analysis of their daily reflection journal entries and final revised materials demonstrated that, after taking part in class activities to evaluate the instructional materials in terms of digital literacy and fair use, their awareness of these two issues was raised. Meanwhile, some pre-service teachers indicated that they felt a sense of frustration because they lacked an understanding of the exact copyright regulations. Others commented that it seemed as if they would never be able to use audio or video materials at all during class because it was prohibitively difficult to obtain materials legally.

STUDY TWO

The objective of Study Two was to find out the degree to which pre-service teachers considered e-safety when designing writing lessons based on online or SNS platforms. The study also investigated whether in-class activities for learning about e-safety and evaluating the lessons from an e-safety perspective resulted in changes in the pre-service teachers' awareness of e-safety.

METHODS

Participants

The participants in Study Two were 35 undergraduate students enrolled in an elective course entitled "Teaching Second Language Reading and Writing" that, like the course in Study One, is offered in an undergraduate English education program at the same research university in Korea. The 16-week course was offered to junior-level college students in the fall semester and met twice a week. In line with the emphasis on ICT integration in the national curriculum of Korea (Ministry of Education, Science and Technology, 2012), which adopts a similar approach to the teacher education model described in Hegelheimer (2006), the department requires pre-service teachers to incorporate ICT into lesson plans produced in methodology courses. The participants in Study Two were required to design technology-integrated writing lessons for their microteaching sessions.

Procedures

The trainees completed a variety of individual and team assignments during the course involving lesson planning, microteaching, and textbook evaluation. Study Two focused on a team task to design lesson plans for writing. The goal of this project was to give pre-service teachers an opportunity to design lessons for writing instruction using ICT. In groups of three or four, the pre-service teachers created lesson plans for secondary-level English classes based on a textbook chapter of their choice. After the project was submitted, the trainees were given time to evaluate their lessons in terms of e-safety. For this study, the writing activities proposed by each team, both before and after the e-safety-related class activities, were analyzed from an e-safety perspective. The reflective journal entries posted by students on an e-class bulletin board were also analyzed. The following gives a brief description of the lesson planning task and class activities.

Writing Assignment

The trainees were divided into eight teams and instructed to design a writing lesson at the target level of their choice, using either an SNS-based or online platform. They were asked to submit lesson plans and class handouts, together with the basis for the selection of activities. Because it is not common in the Korean education environment to spend an entire class session on writing instruction, trainees could design any of a variety of lesson formats feasible in secondary school classrooms. These included projects, homework, and individual or team tasks. After the assignments were submitted, the course instructor presented examples of the various serious social problems that are emerging online, including cyber-violence, cyber-bullying, and invasion of privacy. Afterwards, trainees engaged in an activity to evaluate whether the lessons they had produced had the potential to expose students to such risks, followed by whole-class discussions. The teams were allowed to revise their assignments if they found it necessary and were given two weeks to submit the final version.

Daily Reflective Journal

The pre-service teachers were asked to reflect on the topics the class dealt with during every class and post their thoughts, responses, and questions on web-based threaded discussions at home.

Results

Among the eight teams, two teams planned lessons utilizing SNSs, and six teams designed online writing activities. Specifically, one team designed an activity in which students registered at an SNS site and then shared their own special recipes. Another team proposed a writing lesson that entailed sending out an e-mail invitation to a birthday party for a native English teacher, followed by text messages notifying guests of a change in the location and suggesting what to bring.

The teams that designed online writing activities proposed the following assignments: registering at an e-pals site and writing a self-introduction; answering questions about Korea on Yahoo! Answers; registering as a member of an online bookseller and posting a book review; commenting on articles in an English newspaper; producing a blog introducing native English teachers to neighborhood locations such as good restaurants, hospitals, hair salons, and theaters; and registering at a teen counseling site and sharing problems or advice.

When the SNS-based and online writing activities were analyzed, it was found that although the trainees had successfully devised a range of authentic rather than display writing activities, there was virtually no sign of concern for e-safety-related issues during the processes of instructional design or selection of activities. The most serious problem was that many activities required students to join online sites, and no serious consideration had been given to the registration procedures for the sites, or how much personal information must be revealed in a given online activity. Moreover, no review had been performed to determine the degree to which the sites protect their members' personal information. In addition, there had been no effort to find out whether sites' bulletin boards allow users to restrict access to their postings to a certain audience.

Although the lessons planned by the pre-service teachers may have been at the appropriate level for the targeted students, no review was performed to determine whether the content of the suggested sites was suitable for their age group. For example, in the case of the teen-counseling site, many of the postings by young people concerned problems that were sexual in nature or otherwise morally challenging. In addition, not a single team proposed educating students on e-safety. None of the plans included guidance on how to handle matters like being contacted by a stranger, having an undesirable amount of personal information revealed, or being bullied, either in person or online, in response to their postings.

Therefore, although they produced activities at a suitable level, the trainees did not show much concern for other matters such as e-safety. The following excerpts from the daily journal entries indicate that most

of the trainees felt that there would be no exposure to risk because it was a once-only event and students were unlikely to continue the activity. In the online journal, one pre-service teacher explains why she gave little thought to e-safety: "I guess I didn't feel much concern, because it was just a one-time activity. I mean seriously, who would contact them?" This finding suggests that some teachers have no expectation that students will continue their involvement in such online activities for the purpose of learning English.

After the teaching point had been presented, though, the trainees started to give serious consideration to various factors, including cyber-bullying and protection of students' personal information. All of the teams reported subsequently giving fundamental consideration to e-safety when designing their lesson plans. First, in cases where the proposed activities involved posting comments on the web, the teams reported that they would check the credibility of the relevant sites and their security and privacy policies. When e-mail use was involved, the teams explained that they would instruct their students not to use their primary e-mail accounts, but to start a secondary account not intended for frequent use. Meanwhile, two teams gave up on using online communication activities, and revised their lesson plans by simply finding an authentic writing topic online and then providing it to the students offline.

The team that had proposed a foreign e-pal activity first pointed out the unacceptable risk of not knowing who would contact their students, unless the teacher could arrange e-pal exchange activities with trustworthy teachers abroad. That team submitted a revised activity in which the teachers would visit the websites of public organizations like the City of Seoul or the Korea Tourism Organization and find questions posted by foreigners about such topics as where to buy furniture, which dental clinics offer treatment in English, or which bus routes to use to reach certain tourist destinations. These authentic questions would then be presented offline, and students would be asked to write answers as a group task, and then post the responses to the English e-class bulletin board.

Meanwhile, the team that had proposed an activity involving giving advice on personal problems at a teen counseling site revised their lesson plan as follows. The team selected and printed out postings submitted by young people on personal problems that included hair loss and insomnia, along with the associated online comments. The students would then be asked to write responses giving advice as a group task. In their journal entries, many of the pre-service teachers noted that they were troubled by how difficult it was to develop a variety of lessons that took e-safety into consideration. To illustrate, seven pre-service teachers observed that, when considering e-safety, it is very difficult to design a lesson that completely eliminates risks.

> I don't think it's an easy issue. Am I supposed to tell the students to just put in bogus information? A teacher cannot tell the students to enter false data, and if they do, it could even be detrimental to the sites, don't you think?

> There's always some degree of risk, isn't there? Maybe it's best if the activities are done only among classmates. Even then, there might be problems. So, I guess a lot of education is needed.

Going even further, three trainees responded that it might be best not to engage in online activities with strangers at all, as in the following excerpt.

> Maybe the best way to avoid risky problems is to just print out some online materials as a writing prompt, and then have the students compose their responses offline. That way, at least the situation is still authentic.

If concerns for e-safety lead to having students use false information or create fake accounts, or to taking authentic online materials and using them in a narrower offline or intranet setting, the activity does not take full advantage of a key merit of online and SNS-based activities: their potential to provide real-world

communication opportunities. It is a trade-off in which the authenticity of the task is diminished. Therefore, educators must explore measures to maximize the authenticity of the task while still protecting students from risk.

To summarize Study Two, the analysis of lesson plans for writing designed by pre-service teachers showed that their main considerations addressed whether the writing activities were consistent with teaching principles for writing instruction and that consideration of e-safety was not part of the process. The analysis also showed that when pre-service teachers took part in activities to evaluate the lessons in terms of e-safety, they found out what kinds of problems may occur and learned to design lessons that steer clear of such problems. Indeed, in a couple of cases, the pre-service teachers decided to steer completely clear of assigning online activities because it was impossible to completely remove all e-safety-related risks.

CONCLUSION AND IMPLICATIONS

Studies One and Two targeted pre-service teachers enrolled in CALL and methodology courses and evaluated the effectiveness of activities aimed at raising awareness of ICT issues, namely digital literacy and copyright in Study One and e-safety in Study Two. The results indicate that, when designing ICT-assisted instruction, the pre-service teachers initially showed limited concern about the quality of online materials, copyright, or e-safety. However, after participating in the activities, they displayed heightened awareness, and the revised final versions of technology-integrated lessons that they produced indicated that the courses had a positive influence.

These findings have important implications for teacher education. First, one of the most important findings of this study is that, when planning lessons, the pre-service teachers may not give serious consideration to the qualitative level of the materials or to copyright and e-safety-related issues. Therefore, teacher-training programs are obligated to address these issues, which teachers will inevitably face in the classroom. One important caveat is that it would be counterproductive if this kind of preparation served to intimidate pre-service teachers to the point that they ultimately gave up on employing ICT-based lessons or held back from making full use of the many benefits of ICT in their instructional design. The potential for this kind of unwanted outcome is clearly demonstrated by the choice of several teams to modify their activities to become safer, but less authentic or more restrictive of learner autonomy, after having participated in the fair-use-related class activities.

Second, research is needed on how to address these topics at a level that students can relate to. Although it is the duty of teachers to first set a good example, students should also be actively taught how to use technology in safe and ethical ways. It is the role of the teacher to help students recognize the seriousness of the issues and to provide useful measures, such as website evaluation checklists. As with teaching students how to avoid plagiarism in writing (Block, 2007; Levy & Stockwell, 2006), research is urgently needed to develop specific materials and activities that teach students what is and is not permitted in terms of Internet copyright, in addition to learning how to protect themselves in terms of e-safety, and how to respond if problematic situations occur. Even if students are taught to recognize the seriousness of the issues, their behavior cannot be expected to change if they are not armed with concrete action plans or strategies.

Third, although the participants in this study gained awareness of the importance of copyright protection, they were still confused because they did not precisely understand the rules. They may recognize that copyright should be protected, but are uneasy because it is unclear exactly what is and is not permitted (Averill, 2003; Gasaway, 2002; Halme & Somervuori, 2012). In order to teach students which practices are permitted and which are not, it is advisable that teachers not be vague on the exact regulations, and not use illegal materials themselves in class. Since it is often difficult to understand the rules precisely, it may be safer to check with those who are more knowledgeable, such as library staff responsible for

copyright issues or personnel at the local education authority, rather than attempting to make the judgment oneself.

At the same time, in light of the response of those participants in this study who reported that the difficulty of obtaining materials through legal means posed a seemingly insurmountable challenge to actually using ICT-based lessons after they entered service as teachers, it is important not to convey a sense of hopelessness to pre-service teachers. To better illuminate the process, teacher educators can provide samples of request letters for permission to use copyrighted materials, and can also introduce sources for copyright-free reading materials, images, or multimedia materials.

Because this study targeted only a small population of pre-service teachers from two courses in an undergraduate program in English education, the results should not be too hastily generalized. Another limitation is that there was no objective verification of the effect of the in-class activities done in this study. For one thing, the study targeted only the pre-service teachers enrolled in courses taught by the researcher, with no control group. In addition, the analysis was based on reflective journal entries written after the in-class evaluation activities, along with the revised teaching materials and lesson plans that had been modified to reflect the outcomes of that evaluation activity. For those reasons, there is a strong likelihood that the content covered in class was overtly reflected in the findings. Finally, this study targeted only pre-service teachers, and did not examine the ICT practices and awareness of in-service English teachers. It is critical to conduct studies that identify the actual practices and awareness of in-service English teachers regarding digital literacy, copyright, and e-safety.

Throughout this paper, it has been emphasized that teachers ought to promote responsible use of technology by modeling and enforcing ethical and critical practices. It has also been pointed out that pre- and in-service teachers do not receive sufficient training in this area. Being teachers ourselves, those of us in the field of teacher training should be aware that the same principle applies in our own classrooms. Critical, responsible, and ethical practice related to technology use should be modeled in teacher education courses. As one pre-service trainee pointed out in her reflective journal, how can we expect our students to credit their sources when we do not do it ourselves?

APPENDIX A. Web Page Evaluation Checklist

 Because anyone can publish anything on the Web without restriction, there are no standards for accuracy on the Internet. Therefore, it is very important to evaluate websites to insure their quality and accuracy when you're selecting teaching materials for your class. Please use the following checklist to evaluate the Web page where your team retrieved its reading materials.

Accuracy and Credibility

1. Who wrote the page?
2. Does the author or organization provide contact information?
3. Is this author qualified to write about the topic? Is she/he an expert?
4. Is this information reliable?
5. What authorship clues did the URL (web address) provide? (e.g., .com, .edu, or .gov)
6. Are there any grammatical and spelling errors?

Purpose and Content

7. What is the purpose of the Web site?

8. Does the site provide balanced, objective or factual information? Or is the information one-sided and biased?

9. Does the author have a hidden agenda? Does the author have any reason to be less than 100% accurate and truthful? Is there any apparent conflict of interest?

10. Is anything omitted that you think should have been included?

11. Where does the information come from and is it well supported?

Currency

12. When was the site created?

13. When was the Web site last revised, modified, or updated?

14. Is the site well maintained? Are the links (if any) current and working?

15. Is the information current?

APPENDIX B. Copyright Checklist

When you are using copyrighted materials in your class, keep in mind the four factors of the fair use test. If deemed necessary, get permission from the owner. The following questions are designed to help you determine whether your proposed use of the copyrighted work is appropriate within the scope of fair use.

1. What type of copyrighted materials did you use?

2. Who is the author?

3. Did you check for a copyright notice?

4. Did you seek permission from the copyright holders?

5. Did you download files (for example, from a file-sharing website) and use them without permission?

6. Did you make copies of DVDs or CDs without permission?

7. What amount of the copyrighted work did you use (e.g., how many minutes or how many copies)? Does the amount taken fall within the limits of fair use? Please refer to Hall Davidson's Copyright and Fair Use Guidelines for Teachers.

8. Is access to the material restricted to students in your class?

ABOUT THE AUTHOR

Sang-Keun Shin received his Ph.D. in Applied Linguistics from UCLA. His areas of research interests are second language teacher education, CALL, and language assessment

E-mail: sangshin@ewha.ac.kr

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