



Affordances and Challenges of Telecollaboration for Pre-service Teachers

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Abstract

Telecollaboration has received growing interest in second language teacher education, due to the link between knowledge and practice in telecollaboration. The current research examined affordances and challenges of telecollaboration in teacher education by connecting American pre-service teachers to Korean pre-service teachers. The data for this paper focused on pre-and post-questionnaires, reflective journals, blog posts, and interviews from nineteen American pre-service teachers. This study provides an empirical account of how pre-service teachers benefit from interacting with international partners for improving ICC, teaching skills, and digital literacy skills. The study also presents some challenges of implementing telecollaboration. By presenting the affordances and challenges of telecollaboration in a teacher training program, the study provides implications for educators about how to better assist preservice teachers while using telecollaboration.

Keywords: *Telecollaboration, Digital Literacy Skills, Teacher Education*

Language(s) Learned in This Study: *English*

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Introduction

As the value of telecollaboration has been increasingly recognized in education, there has been a call for a need to implement telecollaboration in teacher education (Fuchs, 2016; Müller-Hartmann, 2006). Telecollaboration as “the application of global computer networks to foreign (and second) language learning and teaching in institutionalized settings” (Belz, 2003, p.2) can provide pre-and in-service teachers with opportunities for putting their pedagogical knowledge into practice with people from different cultural backgrounds. Considering the importance of intercultural communicative competence (ICC) (Byram, 1997) in education, teachers need to prepare themselves as intercultural speakers (Müller-Hartmann, 2006). Indeed, some studies implemented telecollaboration in teacher education (Dooly & Sadler, 2013; O’Dowd, 2013) and showed its potential for improving teachers’ “langua-technocultural competence” in which teachers’ competences are mediated by digital spaces where diverse linguistic and cultural interactions occur (Sauro & Chapelle, 2017). However, more studies are needed, enabling educators to achieve a comprehensive view of the use of telecollaboration in teacher education. Especially, more diverse populations would be valuable in the telecollaboration literature. Thus, the current research focused on American and Korean pre-service teachers who have not been extensively researched in teacher education in the context of telecollaboration research. By providing the portrait of online interactions between these two groups, the study aims to add value to the existing literature to build a more comprehensive view. The

following research question guided this research: “What are the affordances and challenges of telecollaboration for pre-service teachers?” By exploring affordances—“a relationship between an organism (a learner, in our case) and the environment, that signals an opportunity for or inhibition of action” (van Lier, 2004, p. 4)—and challenges of telecollaboration for pre-service teachers, this study can provide an analytical tool for teacher educators.

Telecollaboration in Teacher Education for Developing ICC

ICC in this paper is defined as an ability of people to “socially position themselves in interactions..., to their awareness of such positioning, and to their willingness and ability to recognize and negotiate the others’ multiple identities as much as their own” (Borghetti, 2017, p. 2). Following one of the most widely accepted ICC models in second and foreign language (L2) education, the current study analyzed the data using Byram’s (1997) model which features five *saviours*: attitudes, knowledge, skills of interpreting and relating, skills of discovery and interaction, and critical cultural awareness.

Since there has been a growing interest in ICC in the field of education (NCSSFL & ACTFL, 2017; Council of Europe, 2018), telecollaboration as one of the cost-effective ways of promoting ICC has gained popularity in teacher education (Fuchs, 2016). For example, in Sauro (2016), Swedish pre-service teachers in a five-country online partnership project had multiple opportunities to engage in intercultural learning, including online discussions with peers, analysis of interactional styles in the online discussions for the sociolinguistics study, and in-class discussions about telecollaboration that they experienced. This study concluded that pre-service teachers can enhance their ICC through a telecollaborative partnership but online interactions may not necessarily prompt the development of ICC automatically. Instead, guidance to reflect and discuss based on online interactions can yield a better intercultural learning. Bueno-Alastuey and Kleban (2016) also exemplified the development of ICC by the pre-service teachers but not by all the participants to the same extent. Although some pre-service teachers felt that they developed ICC, other participants felt it less useful. The research explained different aims that the participants pursued affected the perception of usefulness of the telecollaboration project and their overall participation in the project.

Telecollaboration in Teacher Education for Developing Teaching Skills

Teaching skills in this paper are defined as pedagogical knowledge and skills that are needed to instruct students (Richards, 2012). As telecollaboration includes social interactions between people with different cultural and linguistic backgrounds, teaching and learning from one another are fundamental features in telecollaborative contexts. Based on these features, telecollaboration can provide pre- and in-service teachers with an opportunity for teaching practice, leading to the development of their teaching skills (Vinagre, 2017). In Dooly and Sadler’s (2013) study, the pre-service teachers in Spain and in the US practiced scaffolding by sharing their teaching sequences and creating podcasts. During these activities, the pre-service teachers shifted between expert and novice identities and ultimately were able to increase their sense of confidence in using technology and teaching in general. A similar result was found in Müller-Hartmann’s (2006) study in which the participants expressed that they learned better ways of teaching by observing a model teaching and reflecting on their own teaching practices.

A more recent study by Waldman et al. (2019) showed that the pre-service teachers of English in Israel and Germany developed their teaching skills by interacting with one another using video-conferencing tools. Through interacting with other pre-service teachers and reflecting on their discussions, the participants had opportunities to think deeply about teaching for their future pupils.

Telecollaboration in Teacher Education for Developing Digital Literacy Skills

Considering that future students will be equipped with more sophisticated technical skills (Hubbard, 2008; Kessler & Hubbard, 2017), it is critical to develop digital literacy skills for teachers. As Hauck (2019) points out, digital literacy skills featuring both functional and critical dimensions are defined as a set of abilities “to understand and use the power of images and sounds, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms” (New Media Consortium, 2005, p. 8). Technological experiences such as researching resources online and navigating a new online space in telecollaboration can create a sense of achievement and make pre-service teachers feel confident in their use of technology, leading to the development of digital literacy skills (Guichon & Hauck, 2011; Jauregi et al., 2012). In Fuchs et al. (2012), the pre-service teachers were able to recognize the importance and usefulness of online technologies in their classroom and developed digital literacy skills through the telecollaborative project, which can ultimately lead to “multimodal communicative competence” (Royce, 2002, p. 92). Similarly, in-service teachers in Vinagre (2017) displayed their competences of digital literacy skills through completing collaborative tasks with other teachers. In accordance with these studies, Hauck (2019) reported on findings from a large-scale study called EVALUATE, which included over one thousand pre-service teachers in Europe. Through this exchange experience, the pre-service teachers were not only able to recognize the benefit of technology use but were also able to develop their digital literacy skills.

Unlike the studies with positive results of telecollaboration project, there are some studies which showed contradictory results. Antoniadou (2011), for example, presented the challenges that the pre-service teachers faced including institutional differences, technological difficulties, and extra work. Although there were some pedagogical values of the project for pre-service teachers, many of the participants viewed this experience as a “weak link” toward their teaching career because of challenges including technological difficulties and “lack of solidarity” that they had to deal with (p. 246).

As such, while many studies have shown benefits of telecollaboration, there are other studies that have reported dysfunction in telecollaborative exchanges and suggested more cautious approaches to implementing telecollaboration (Helm, 2015). Based on the results of previous studies, the author initiated a telecollaborative study between American and Korean pre-service teachers in order to examine affordances and challenges of telecollaboration for American and Korean pre-service teachers.

Methodology

Context & Participants

The current study was carried out in one of the required teacher preparation courses which focuses on teaching methodologies for English language learners (ELLs) in a midwestern private university in the US. This course is designed to provide undergraduate pre-service teachers with the knowledge and skills to teach ELLs. The instructor of this course was the lead researcher of this study with the goal of providing American pre-service teachers the experience of different cultures via online networks by pairing them to Korean pre-service teachers.

Nineteen American pre-service teachers participated in this study as a course requirement in the fall of 2018 (refer to [Table 1](#) for details). Most participants had no or minimal exposure to other cultures, especially to Korean culture. Their Korean counterparts, either undergraduate or graduate

students, were from a private university in South Korea, majoring in English education. The American and Korean participants communicated with one another in English. The current paper focuses on the American participants' data since the researcher, as the instructor of the American participants, collected more comprehensive data from them.

Table 1. *Demographic Information of the American Pre-service Teacher Participants*

Category	Descriptions and Numbers of Participants
Gender	Female: 18, Male: 1
Year in college	Sophomore: 14, Junior: 4, Senior: 1
First Language	English: 15, Spanish: 3, Vietnamese: 1
Major	Elementary Ed: 11, Special Ed: 2, Secondary Ed: 1, Early Child Ed: 5

Data Collection and Procedures

At first, the American participants completed a pre-questionnaire concerning their personal, educational, and cultural backgrounds. Based on this information, an individual face-to-face interview was administered with the researcher in order to draw a rich description about each participant's life experience. Based on the pre-questionnaire and interview data, each American participant was partnered with a Korean participant. Due to the unequal number of the participants, six Korean participants had two American partners, having a separate interaction with each American partner. For the first task, both parties introduced themselves to their partners via email. Then, for the remainder of the semester, the American and Korean participants wrote about a cultural topic and shared it with their partners in their Blogger, followed by exchanging feedback. In total, there were six exchanges. After exchanging feedback, the American participants were asked to write a reflective journal (see [Table 2](#) for details). After all of the exchanges were complete, the American participants were asked to complete the post-questionnaire regarding their telecollaboration experience along with a final reflection paper. In addition, follow-up interviews were conducted in order to elicit the participants' attitudes and perceptions toward the telecollaborative experience.

Table 2. *Tasks and Procedures*

Timeline	Procedure	Task Description	Tool	
1st Week	E-mail Exchange	Introduce yourself to your partner and ask your partner questions.	Gmail	
2 nd to 7 th Weeks	Three Tasks Each Week	1. Blog Post	Write your thoughts and experience about the weekly topic.	Blogger
		2. Feedback Exchange	Leave a comment on your partner's post in the blog.	Blogger
		3. Reflective Journal	Write about your online exchange experience, including learning points, your feelings, and other notes.	Sakai Course Management System

Data Analysis

To identify the affordances and challenges of telecollaboration for pre-service teachers, data were drawn from the American participants' reflective journals, pre-and post-questionnaires, and interviews. Data were analyzed using content analysis, which "uses a set of procedures to make valid inferences from text" (Weber, 1990, p. 9). Data analysis started with reading all of the data repeatedly once the research was complete. Then, the researcher highlighted some words that seem to capture key thoughts. Next, while rereading the data, the researcher made notes of the initial analysis. In this process of visiting and revisiting the data, some codes emerged (Miles & Huberman, 1994). The initial coding scheme set the foundation for categories. Through organizing these categories, some categories were combined or deleted. Finally, the themes were sorted into four major categories: intercultural communicative competence, teaching skills, digital literacy skills, and challenges of telecollaboration.

Results & Discussion

In order to answer the research question, the results are organized to discuss the affordances and challenges in the following four categories: ICC, teaching skills, digital literacy skills, and challenges.

Developing ICC

The most common topic that the participants wrote in their reflective journal was culture. The participants'¹ data revealed that most participants were excited about online intercultural interaction, which was different from traditional classroom learning. They often expressed their curiosity about Korean culture, which was well captured in their reflective journals as described in Nasla's² statement, "I look forward to hearing back from my partner to get to know more about how their school experience was or how it is in Korea" (11/11/18).

The curiosity about other cultures seemed to allow them to develop their cultural knowledge. At the beginning of the study, many participants pointed out that they had limited knowledge about Korea. Many of them commented that they did not know about Korean culture except for kimchi and/or Kpop, which seem to symbolize South Korea to them. Most of their knowledge and perceptions were accrued from having been exposed to the media. Through the course of interactions with their partners, the participants filled their reflective journals with new knowledge about Korea that they learned from their partners. Their partners seemed to assumed the role of cultural informant, as seen in Sue's reflective journal:

During the morning of Seollal, Joo goes to her uncle's house with her parents. Her family then performs ancestral rites. Following this, they bow to the elder members of the family. These elder members then give Joo and her family good pieces of advice...[omitted] Also, they eat a rice cake soup. I learned that rice cake soup in Korean is tteokguk...[omitted] Eating this dish also makes them one year older according to Joo (11/18/2018).

As the above description demonstrates, the participants were able to develop their cultural knowledge, which was often informed by their partners. The participants seemed to effectively learn cultural knowledge because it was from interactions with people from the target culture as mentioned in Uno's statement "this project allowed me to study cultures further in depth, and

actually be able to interact with a member from said culture” (reflective journal, 12/12/18). Many participants acknowledged the importance of firsthand cultural experience. Victoria realized that the reality of other cultures may be different from media that people watch:

I feel that although movies and tv shows are fun and interesting to watch, the viewers must learn about the culture they are watching as well and do more research to find accurate facts about the culture. The country's culture should not be perceived by watching movies. The viewers should visit the country as well and experience it firsthand (reflective journal, 10/26/18).

In this study, exchanging ideas in Blogger allowed the participants to revise their preconception of other cultures, developing their ICC, which coincides with Ducate and Lomicka’s (2005) findings. The German and French learners in their study were able to co-construct new meanings about other cultures by exchanging blog entries.

Further, the online discussions sometimes dismantled their language and cultural ideologies. For the 6th topic, the participants discussed English education around the world. Victoria was able to reframe her thought on this topic after interacting with her partner, “Knowing English in the United States, it necessary to navigate through everyday setting but as my pen pal from South Korea *opened my eyes*, I do not think that everyone from around the world needs to learn English³” [emphasis added] (reflective journal, 12/10/18). This statement indicates the recognition of her previous perception of the necessity of having English speaking skills and the acknowledgement of her partner’s insights into this issue. Based on her experience residing in an English-speaking country, she had believed that English is inevitable because English is a survival tool to “navigate through everyday setting.” As a native English speaker, she may have naively applied her situation to other contexts where English may not be necessary to survive. However, Victoria’s partner enlightened her to recognize her privilege as a native speaker from a country where English is a main medium to communicate with others. Through her interaction with her partner, Victoria was able to alter her preconception and break away from her taken-for-granted views of her culture, exploring various cultural frames of reference, which seems to demonstrate her skills of discovery and interaction (Byram, 1997). The positive gain in ICC is in line with previous telecollaborative studies (Fuchs, 2016; Sauro, 2016). However, as Sauro (2016) points out, intercultural learning may not be automatically prompted by online interactions but may be gradually led by further reflections based on what students experienced and by guided instruction.

Developing Teaching Skills

The interaction with the Korean partners allowed the American participants to have a teaching experience, which can possibly lead to the development of teaching skills. Uno expressed how this experience helped him practice his teaching skills and allowed him to learn about how to approach diverse learners, “I also learned how I can apply learning about different cultures towards my teaching, and how I can teach students of different cultures” (reflective journal, 12/11/18). This is in line with the findings of Waldman et al. (2019), in which telecollaboration helped pre-service teachers prepare for their future teaching.

Considering that the Korean participants were ELLs and the American participants were preservice teachers, the experience of guiding Korean partners’ English writings in blog entries seemed to be advantageous for the American participants’ teaching practice. A firsthand experience of reading

real L2 writing examples helped them understand ELLs' struggles in writing, which the American participants may have not necessarily experienced themselves. Gina mentioned that "[my partner] seems to struggle a bit with knowing what prepositions are appropriate for certain phrases...[omitted] I like getting to see his English skills and I think that it sort of shows how it will be with our future students" (reflective journal, 11/25/18).

The data also revealed that the interaction with their partners allowed the American participants to reshape their perceptions toward ELLs. Many American participants pointed out that they were surprised at the English proficiency level of their Korean partners. Sue shared her impression of her partner's writing in her reflective journal:

Before we started, I was worried about how the communicating would go. I did not know the proficiency of my partner. I was really glad after reading her first post. Joo is quite proficient, and I had no trouble understanding what she was trying to say (12/6/18).

This implies that their direct experience with ELLs helped the American participants alter their preconceived notions of ELLs' English proficiency. Direct interactions with ELLs and reading L2 learners' writings seemed to help the American participants rebuild their perspectives about ELLs. Indeed, the American participants were able to construct a broader perspective about ELLs who can have distinctive language and cultural profiles. These newly constructed but inclusive views toward ELLs can ultimately help pre-service teachers better guide ELLs in their future classes. This is supported by Angelova and Zhao's (2016) telecollaborative research where American pre-service teachers benefitted from guiding their Chinese partners since the American participants were able to have teaching experience with ELLs and learn how to better guide them.

Developing Digital Literacy Skills

The participants became familiar with the online platform, Blogger, and found the usefulness of it for teaching. However, at the beginning of the study, the researcher received a lot of complaints and innumerable requests for help. Many participants reported that they have never used Blogger. They contacted the researcher frequently, asking how to navigate Blogger. Once they were accustomed to use this new platform, they were excited about creating their own online space. Once they felt confident at how to use it, they even took the role of teacher to help their partner use Blogger.

By the end of the study, the participants seemed quite proficient at using Blogger. Many participants inserted pictures, videos, or other links in their blog entries. In the final reflection, one participant stated, "I was proud of my blog. I made it look visually appealing and added my own personality to it" (Galis, reflective journal, 12/11/18). By making her blog "appealing," Galis seemed to develop her digital literacy skills. Further, some participants addressed their plans to use online technologies for telecollaborative projects in their future classroom. In this study, blogging seemed to help the participants become skillful in technology use and ultimately to lead them to promote their digital literacy skills. This result aligns with Hauck (2019) where the pre-service teachers in European countries were able to develop their digital literacy skills and became confident to conduct telecollaboration in their future classrooms.

Challenges

Despite the aforementioned benefits, some challenges arose. The time difference between the two countries was the most-identified challenge by the American pre-service teachers. While the participants were able to work individually in their preferred time, the time differences seemed to significantly affect frequency in their communication. Mostly, the American participants posted their blog during the daytime in the US, which is the nighttime in Korea. Usually, it took three to seven days for the American participants to receive feedback. Then, the American participants replied to their partners within another day or so. This was well captured in Judy's reflection below:

For this project, there are certain assignments due at certain times and I usually forget that Hyung is in a different time zone than I am. Whenever I would negotiate with him in regards to our project, it would be his bedtime while it's broad daylight on my end. I took note of this and when I try to chat with him, I will remind myself to send my messages at night so he can receive the messages at broad daylight (10/25/18).

In addition to the time difference, different levels of engagement between partners made some American participants feel it was unfair. Many American participants narrated their frustration when their partners did not respond in a timely manner. This is consistent with Bueno-Alastuey and Kleban's study (2016) where some Polish students did not enjoy the telecollaborative study with Spanish students because of Spanish students' lack of engagement. The Spanish students had their own aims which were unreachable in the study, resulting in their low engagement. Like Bueno-Alastuey and Kleban's study, the Korean participants in this study might have had aims that the current telecollaboration could not help them meet, resulting in disengagement (Ware & Kessler, 2016). It was impossible for me to get the data from the Korean partners who were disengaged from the study. Therefore, no further explanation of non-participation is provided. Reciprocity is significantly important in this style of learning because both partners are dependent upon one another and must mutually support one another (Hauck & Youngs, 2008). Thus, similar levels of motivation and participation as well as continued guidance should be promoted before and during the study (O'Dowd et al., 2020).

Conclusion

The current study examined some affordances and challenges of telecollaboration in teacher education. Telecollaboration helps pre-service teachers develop ICC, teaching skills, and digital literacy skills (Fuchs et al., 2012). At the same time, there are some challenges due to different time zones and different degree of engagement.

This study contributes to the area of telecollaboration research in the following ways. First, this study offers an empirical account of telecollaboration implemented in teacher education, including its benefits and challenges, which provides implications for educators with how to better assist pre-service teachers in the context of telecollaboration. Second, this study focusing on American and Korean pre-service teacher interactions contributes to advancing the existing telecollaborative studies in teacher education toward a more inclusive understanding of telecollaborative partnership, including varied language groups that have not been discussed thoroughly.

Despite the promising results of telecollaboration, there is a limitation in this study. As a specific course assignment, the data from the current research was from a small number of participants. The results cannot be generalized. Further studies might consider telecollaboration across multiple school settings.

Nonetheless, with the beneficial values of telecollaboration in teacher education which the current research presents, I would suggest the following pedagogical implications. In order to provide rich cultural experiences for pre-service teachers, educators should consider providing telecollaboration experience. Through technology-based cultural experience, pre-service teachers can be more aware of other cultures and have teaching and technology practice. Second, researchers should identify both partners' goals and purposes of participating in telecollaboration and check the accomplishments of them during the course of the research. It is hoped that the current study has provided insights into the implementation of telecollaboration in teacher education programs.

Notes

1. In this section, the term “participants” refers to the American participants given that the data analysis in this paper focuses on the American participants.
2. The participants' names are pseudonyms.
3. Any spelling or grammatical errors were not corrected to preserve the original data.

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