Developing Intercultural Competence through Study Abroad, Telecollaboration, and On-campus Language Study

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Abstract

Although a number of studies have investigated study abroad or telecollaboration separately, none to date has included both methods with the aim of differentiating their impacts on the development of intercultural communicative competence (ICC). Using mixed methods, the current study compared foreign language learners’ perceived ICC development under three different conditions over 6 weeks: 1) a study-abroad program (n = 52) in Korea, China, Japan, France, and Spain designed for American undergraduates; 2) telecollaboration (n = 54) between Korean students of English and American students of Korean; and 3) on-campus language study (n = 44) among Korean students of English and American students of Chinese who were learning languages at their home institutions. Data from 150 students were collected from pre- and post-study questionnaires measuring cognitive, affective, and behavioral aspects of ICC; reflective writing; exit essays; and interviews. The results indicated that the study abroad and telecollaboration groups exhibited significant improvement in perceived cognitive, affective (engagement and confidence), and behavioral aspects of ICC over time, whereas the on-campus (control) group showed little change in any aspect of ICC. Although the study-abroad group displayed significantly higher levels of intercultural knowledge than the telecollaboration group, both groups showed similar degrees of improvement in the affective and behavioral aspects of ICC. We argue that online interactions with members of the target culture can be as beneficial as studying abroad and that it is at least more beneficial than traditional classroom language learning in the development of L2 learners’ perceived ICC.

Keywords: Telecollaboration, Study Abroad, On-campus Language Study, Intercultural Competence

Language(s) Learned in This Study: English, Korean, Chinese, Japanese, French, Spanish


Introduction

As awareness of globalization increases, one of the major objectives of higher education is to provide globally competitive students with internationally applicable skills and the ability to communicate effectively and appropriately with multicultural speakers of different languages (Root & Ngampornchai, 2013). The development of intercultural (communicative) competence (ICC) is essential not only for students who wish to pursue careers in international workplaces but also for those who need to work effectively in the contemporary world (Walinski, 2013). In response to these needs, there is a growing consensus among second or foreign language (L2) educators that the primary goal in L2 classrooms should be to facilitate intercultural communication (Kramsch, 1993). According to Byram, Gribkova, and Starkey (2002), the aims of intercultural language teaching are as follows: to foster learners’ intercultural competence as well as their linguistic competence, to prepare them to communicate with speakers of
different languages from other cultures, to facilitate their understanding of different perspectives and values, and to help them realize that such interaction can be an enlightening experience. Considering that ICC has been recognized as a necessary skill in the global era, facilitating ICC through study-abroad or telecollaboration programs has become mainstream in L2 curricula, as well as in higher education in many countries.

Study abroad, in the context of this study, refers to students’ extended visits to their target language countries, where they attend language classes, live with host families, pair with language partners, and participate in service learning or work as community volunteers. The benefits that study-abroad programs offer to students include intercultural knowledge development (Czerwionka, Artamonova, & Barbosa, 2015), global competence (Marx & Moss, 2011), and the development of less ethnocentric attitudes and greater open-mindedness as well as personal growth (Ngai & Janusch, 2015; Walters, Garii, & Walters, 2009). However, study-abroad opportunities are not available to all students due to financial constraints, university policies, and practical issues related to extended visits to foreign countries (Anderson & Lawton, 2011). Indeed, only a small percentage of the student population (1% in the US, 5% in Europe, and 7% in South Korea) have participated in study-abroad programs (Helm, 2015; Jon, 2013).

For the majority of students who remained on campus, telecollaboration has emerged as an affordable approach to gaining ICC. Telecollaboration refers to technology-mediated interaction with native speakers of the target language in distant locations for the purpose of developing L2 learners’ linguistic and intercultural competences (O’Dowd, 2015). Many researchers have advocated the use of telecollaboration to develop intercultural understanding and reduce stereotypes (Bohinski & Leventhal, 2015; Hertel, 2003; Itakura, 2004; Kirschner, 2015; Schenker, 2012; Tian & Wang, 2010). However, whether the effects of telecollaboration are comparable to those of study abroad or L2 courses in home institutions with regard to developing learners’ ICC remains unclear.

This study compared three higher-education learning experiences (i.e., study abroad, telecollaboration, and on-campus language study) and their effectiveness in intercultural development. Most previous studies have investigated study abroad, telecollaboration, and on-campus language study separately, which did not allow comparative evaluation. Thus, on-campus language study was included as a control group in this study, to examine whether L2 instruction alone was sufficient to develop ICC, and to corroborate whether intercultural development is attributable to study abroad or telecollaboration. Moreover, previous research has heavily relied on either surveys or non-empirical methods, such as anecdotal evidence, to measure intercultural growth (Engle & Engle, 2004; Williams, 2005). Following Deardorff’s (2006a) suggestion that no single method can accurately assess ICC, but rather that a combination of methods is required, qualitative and quantitative methods were incorporated in the present study. Furthermore, although intercultural competence is complex and multidimensional, previous research has tended to assess ICC broadly, as a whole. Considering that individuals may develop some aspects of intercultural competence, but not others, our investigation examined the impacts of the three learning conditions on the cognitive, affective, and behavioral aspects of ICC.

**Literature Review**

**Definition of Intercultural Communicative Competence**

Many scholars have attempted to specify the multidimensional aspects of ICC, but a clear consensus has yet to be reached (Deardorff, 2006a). Byram’s (1997) definition comprises five dimensions: knowledge, attitude, critical cultural awareness, interpretation and relational skills, and skills of discovery and interaction. O’Dowd (2006) describes ICC in terms of affect (attitude), cognition (knowledge), and skills (the ability to behave appropriately in cross-cultural situations) domains. Despite these variations, at least three components are common to these definitions: the cognitive, affective, and behavioral aspects (Bennett, 2009; Chen & Starosta, 1997; Deardorff, 2006b; Perry & Southwell, 2011). Incorporating these three domains, we operationalized ICC as described below.
The cognitive component refers to students’ knowledge of the target culture and their appreciation of the differences between their home culture and other cultures (Hill, 2006). The American Council on the Teaching of Foreign Languages outlined culture in terms of products, practices, and perspectives. Products are tangible and intangible creations, such as paintings, books, music, and education; practices include social behaviors, such as gestures, table manners, and holiday celebrations; and perspectives involve values, ideas, attitudes, and beliefs (Cutshall, 2012). Thus, culture-specific knowledge should include products, practices, and perspectives that facilitate understanding of intercultural differences (Stern, 1983) and appropriate behavior (Perry & Southwell, 2011).

The affective aspect refers to intercultural sensitivity. Chen and Starosta (1998) conceptualized intercultural sensitivity as an individual’s “active desire to motivate themselves to understand, appreciate, and accept differences among cultures” (p. 231). Chen and Starosta (2000) identified five elements of intercultural sensitivity: interaction engagement (the sense of participation in communication), interaction confidence (the degree of confidence that interlocutors feel during intercultural communication), respect for cultural differences (the extent to which participants understand, accept, and respect cultural differences), interaction enjoyment (the level of pleasure interlocutors obtain from the communication), and interactional attentiveness (the ability to respond observantly in communicative situations). In this study, we incorporated only engagement, confidence, and respect, as they account for the majority of the variance in affectivity.

The behavioral dimension has been the subject of fewer investigations than have the cognitive and affective domains, and some ambiguity remains regarding its features. Koester and Olebe (1988) characterized the behavioral domain as including respect, interaction management, and tolerance of ambiguity, whereas Kelley and Meyers (1995) considered behavioral competence to include cross-cultural adaptability. Portalla and Chen (2010) regarded the behavioral aspect as relevant to the communication skills required during interactions. These approaches, however, may not assess the proactive aspects of behavior. Therefore, we borrowed a concept from the field of psychology, conation, which Atman (1987) defined as “vectored energy: i.e., personal energy that has both direction and magnitude” (p. 15). The features of conation are connected to volition, will, and agency, which indicate potential behavior (Huitt & Cain, 2005). In the current study, the behavioral aspect is defined as students’ willingness to learn about the target culture or their directed efforts to engage in behavior aimed at intercultural understanding.

Effects of Study Abroad and Telecollaboration on Intercultural Competence

A synthesis of the studies on study abroad reveals that study-abroad participants developed their overall understanding of the target country through daily exposure to social interaction with native speakers from the host culture (Czerwionka et al., 2015; Root & Ngampornchai, 2013; Watson, Siska, & Wolfel, 2013). Study-abroad programs also have a positive influence on the affective domain. Specifically, study-abroad participants exhibited more openness to cultural diversity and higher levels of global-mindedness (Clarke, Flaherty, Wright, & McMillen, 2009), as well as patience toward, flexibility in, and acceptance of different perspectives (Root & Ngampornchai, 2013). The positive impact of study-abroad programs may be maximized when the participants form close social networks with native speakers from the host culture (Isabelli-Garcia, 2006). Regarding the behavioral aspects of ICC, the definitions offered vary significantly in several aspects, such as the inclusion of language and basic living skills (Root & Ngampornchai, 2013), adaptability and sensitivity (Williams, 2005), and intercultural adaptability and global/holistic developmental views (Anderson & Lawton, 2011). Despite these variations, studies have consistently reported the positive contribution of study-abroad programs to the behavioral dimension of ICC, not only with regard to single-group design (Root & Ngampornchai, 2013), but also when compared to traditional on-campus classes (Anderson & Lawton, 2011; Williams, 2005). Behrnd and Porzelt (2012), however, found that the study-abroad group did not exhibit significantly higher means than the on-campus group in terms of the cognitive, affective, and behavioral aspects. Nevertheless, a longer duration of the stay abroad was significantly correlated with the cognitive, affective, and behavioral aspects, indicating that students who participate in study-abroad programs of longer duration tend to acquire greater intercultural competence.
Similar to the positive effects of study abroad, previous studies have generally agreed that telecollaboration promotes intercultural knowledge, with regard to cultural products, practices, and perspectives, as well as perceived knowledge of the target culture (Bohinski & Leventhal, 2015; Lee & Markey, 2014; Schenker, 2012; Tian & Wang, 2010). Having learned more about the target culture, participants reported that they corrected any negative stereotypes that they held with regard to the target culture (Bohinski & Leventhal, 2015; Kirschner, 2015; Itakura, 2004). However, it should be noted that if cultural clashes occur between speakers of different cultures without the teachers’ guidance, telecollaboration could cause or consolidate negative stereotypes of the target culture (Belz, 2002). Furthermore, studies on the affective domain, another aspect of ICC, have yielded mixed findings. Some studies indicated that telecollaboration helped participants to enhance their affective states, including interest, curiosity, and intrinsic motivation (Chen & Yang, 2014, 2016). Other studies revealed negligible changes in the students’ interest in or respect for the target culture, possibly due to the students’ high affective states prior to the exchanges, or the lack of available research instruments sufficiently sensitive to miniscule changes (Hertel, 2003; Schenker, 2012). There is, to our knowledge, no literature that specifically examines the behavioral aspects of ICC. In the absence of research assessing the three key aspects of ICC using control or comparison groups, our study aims to bridge this gap.

Methods

The Research Context

As part of a 2-year project, this study included 150 university students (women = 97, men = 53) learning foreign languages in South Korea and the US (ages 18–27 years, $M = 20.43$, $SD = 1.71$). Data were drawn from the study-abroad ($n = 52$), telecollaboration ($n = 54$), and on-campus language study ($n = 44$) groups. See Table 1 for details.

The study-abroad group consisted of U.S. students enrolled in foreign language courses, pursuing degrees including international studies, economics, physics, and biology. During the summer of 2017, faculty-led, six-week study-abroad programs took place in South Korea, China, Japan, France, and Spain. All students participating in the study-abroad programs had completed introductory language courses in their U.S. home institutions. Despite the different geographical contexts of the five groups, the structures of the study-abroad programs were identical and included the following components: daily language instruction (a total of 84 contact hours over 6 weeks), one-on-one language partners, homestays, weekly service learning in community centers, and weekend excursions. Regarding one-on-one language partners, students were paired with native speakers of the target language (i.e., university students from partner institutions in each country) and met with them at least twice a week to practice speaking. To facilitate valid comparison between the study-abroad and telecollaboration methods, the Korean study-abroad group was selected as a focus group. As detailed in Table 2, this group completed the same tasks as the telecollaboration group.

The telecollaboration group consisted of 27 Korean students enrolled in English education courses as part of their minor or major requirements and 27 American students who were taking Korean as a supplementary subject while working toward degrees in different majors. The Korean students’ English proficiency ranged from intermediate to advanced, reflecting the fact that they were majoring in English education, whereas the American students’ Korean proficiency ranged from beginner to intermediate levels. In Spring 2016, the students communicated via mobile-based voice/video calls or text messages (KakaoTalk) in pairs for the first three weeks and then in groups of four (or six in one group due to an uneven number of participants) for the remaining three weeks. For six weeks, the students were required to make contact with their partners at least twice a week, committing to one hour of conversation in the target language per week. For example, if the students spoke in Korean for 30 minutes on Monday, their next exchange should last at least 30 minutes in English on Wednesday. Teachers in both institutions served as facilitators on the telecollaboration project, providing students with discussion topics, assessing their engagement in the project through weekly reflection papers and oral presentations, and constantly monitoring their interactions to ensure regular meetings across groups.
An on-campus study group that served as a control was drawn from the same two universities as the telecollaboration group: Koreans \((n = 29)\) majoring in English education with intermediate to advanced English proficiency and U.S. students \((n = 15)\) taking Chinese with beginner level Chinese proficiency. The Korean \((2\text{nd to 4th year})\) and U.S. \((1\text{st to 4th year})\) students were taking language courses as electives at their home institutions for six weeks in Spring 2016 and did not engage in telecollaboration or study abroad. Although the classes’ foci were aimed at developing the students’ linguistic skills, including listening, reading, speaking, and writing, cultural content was also introduced in class, in line with the design of the language curriculum. As the Korean students were simultaneously engaged in other English major-related courses, such as American literature, they were likely to have been more exposed to cultural issues than those who simply attended language classes. For the American students of Chinese, various cultural topics, including national holidays, customs, traditional clothing, and food, were presented at the end of each chapter in the textbook, and the teacher introduced them when appropriate.
Instruments

**Quantitative Measures: Questionnaires**

To evaluate the cognitive, affective, and behavioral aspects of ICC, we compiled a 26-item questionnaire (see Appendix A) using a six-point Likert scale (1 = strongly disagree, 6 = strongly agree). For the cognitive domain, we constructed four items that focused on specific knowledge of cultural products, practices, and perspectives, and the ability to understand cross-cultural differences (Cutshall, 2012; Hill, 2006). To evaluate the affective dimension, we adapted 16 items from Chen and Starosta’s (2000) intercultural sensitivity scale and added three customized items. To evaluate the behavioral aspects, we created three items based on previous psychological research that characterized the students’ intentions to act (Atman, 1987; Huit & Cain, 2005). The conative items measured the likelihood of individuals’ engagement in certain behaviors, such as seeking opportunities or resources with which to educate themselves about the target culture.

**Qualitative Measures: Reflective Writing, Interviews, and Exit Essays**

Over six weeks, the study-abroad and telecollaboration groups discussed three topics of their own choosing and completed three teacher-assigned tasks. After weekly interactions, all students submitted reflective essays in their target language or made oral presentations, which synthesized their reactions to the discussion topics and their newly acquired knowledge. For those who experienced difficulty writing in the target language, interchangeable use of both languages was permitted.

When the programs had ended, face-to-face, semi-structured individual interviews (of approximately 30 minutes’ duration) were conducted with 37 telecollaboration participants (27 Korean and 10 U.S. students) in their native language. The researchers asked about the students’ engagement in the project, overall evaluation of the exchanges, relationships with their language partners, and challenges regarding the interactions, allowing diverse responses to be offered by the interviewees. The interviews were audio-recorded and transcribed for analysis. As face-to-face interviews were not feasible for the study-abroad group due to logistical complications, an exit essay was administered to elicit information about the participants’ ideas and feelings about the study-abroad experience, their evaluation of the program, and their impressions of Korea. Additionally, we checked how frequently the students in the telecollaboration group contacted each other. The KakaoTalk program used in this study has a function that saves and exports chat scripts to email, which enabled the researchers to measure the quantitative aspects of the telecollaboration group’s interactions, including contact frequency, number of words in written chats, and voice/face talk time. We used these data solely for this purpose in this study.

**Procedure and Analyses**

All tasks, including ICC surveys, reflective writing, and exit essays, were completed as course components. However, data were collected only from those who voluntarily consented to allowing the researchers to use their class projects for dissemination purposes. Written informed consent was obtained from the participants after the study was explained in full, and the data was collected only from volunteer students. Any references that may have identified the participants were deleted or converted to pseudonyms.

We analyzed quantitative data using SPSS version 21 and Amos version 21 software. Preliminary statistical analyses were performed to verify whether a set of assumptions had been violated, including normal distribution, homogeneity of variances, sphericity, and multivariate normality. Having satisfied these assumptions, a confirmatory factor analysis (CFA) was conducted on the pre-questionnaire to check whether the items were representative of the hypothesized factors, cognition (i.e., knowledge), affect (i.e., engagement, confidence, and respect), and behavior. Appendix A presents significant factor loadings, with two non-significant items in the engagement factor excluded from the analyses. Appendix B presents the fit indices of the confirmatory factor analyses, all of which indicate a good model fit. The reliability of each factor ranged from .70 to .81, indicating reasonable internal consistency.

Using each CFA factor as a dependent variable, we conducted mixed between-within subjects ANOVA,
with group (i.e., study abroad, telecollaboration, and control) as the between-subjects factor and time (pre-study and post-study) as the within-subjects factor. For significant interaction effects, we examined the simple main effects by performing a paired sample $t$-test across time for each group separately, as well as a one-way ANOVA at each time point. For non-significant interactions, we reported only the main effects for each factor (time and group). Where either of the main effects was statistically significant, we presented the relevant statistical output from the pairwise comparisons table. For all pairwise comparisons, we used the Bonferroni adjusted alpha level of .0166 (.05/3), by dividing an alpha level of .05 by the number of tests.

For the qualitative data, we coded the reflective writings, exit essays, and interview transcripts to look for common themes using NVivo software. After the initial coding had been performed, another round of coding was conducted according to the coding scheme. In the second stage, the initial themes were categorized into cognitive, affective, and behavioral dimensions of ICC.

### Results and Discussion

#### The Impact of Study Abroad, Telecollaboration, and On-campus Study on the Cognitive Aspects of ICC

Table 3 presents the descriptive statistics of each group’s perceived intercultural competence at each time point. The results of the mixed ANOVA showed a main effect of time, $F(1, 147) = 92.93, p < .001$, partial $\eta^2 = .39$, as well as a main effect of group, $F(2, 147) = 6.70, p = .002$, partial $\eta^2 = .08$. There was also a Time $\times$ Group interaction effect, $F(2, 147) = 24.80, p < .001$, partial $\eta^2 = .25$, indicating that the improvement of the three groups in terms of the cognitive aspect of ICC differed statistically from one another and that the group differences over time were considerable, with large effect sizes. The significant interaction analysis was followed by post hoc analyses. The paired-samples $t$-tests revealed that both the study-abroad and telecollaboration groups significantly improved the perceived cognitive aspect of ICC over time, but that the control group did not (Figure 1).

<table>
<thead>
<tr>
<th>Group</th>
<th>Cognitive</th>
<th>Engagement</th>
<th>Affective</th>
<th>Respect</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre $M$</td>
<td>Post $SD$</td>
<td>Pre $M$</td>
<td>Post $SD$</td>
<td>Pre $M$</td>
</tr>
<tr>
<td>Study abroad ($n = 52$)</td>
<td>3.59</td>
<td>0.85</td>
<td>4.93</td>
<td>0.59</td>
<td>3.83</td>
</tr>
<tr>
<td>Telecollaboration ($n = 54$)</td>
<td>3.75</td>
<td>0.9</td>
<td>4.19</td>
<td>0.7</td>
<td>4.7</td>
</tr>
<tr>
<td>Control ($n = 44$)</td>
<td>3.67</td>
<td>0.71</td>
<td>3.8</td>
<td>0.81</td>
<td>4.57</td>
</tr>
</tbody>
</table>

In addition, the results of individual one-way ANOVAs and pairwise comparisons (using the Bonferroni adjusted alpha level of .0166) revealed that the three groups’ perceived cognitive aspect of ICC was similar at the outset of the study, $F(2, 147) = .54, p = .58$. After six weeks, however, the study-abroad group’s cognitive aspect of ICC ($M = 4.93$) was significantly higher than that of either the telecollaboration ($M = 4.19$) or control group ($M = 3.89$), $F(2, 147) = 28.52, p < .001$, with no significant difference between the telecollaboration and control groups. These results imply that, although both study abroad and telecollaboration significantly enhanced students’ perceived cultural knowledge within six weeks, the impact of study abroad was greater than that of telecollaboration. Moreover, although telecollaboration seemed to be
effective in expanding students’ perceived intercultural knowledge, its effect was insufficient to make a significant difference compared to the control group who attended L2 courses at their home campus.

Figure 1. Groups showing significant gains from pre- to post-study on the cognitive aspect (knowledge) of intercultural competence; *p < .05.

Qualitative data offered two themes related to the cognitive aspect, and these themes appear to provide possible explanations as to why the study-abroad group, but not the telecollaboration group, made a significant improvement in their cultural knowledge compared to the control group. The first theme was the different levels (multiple versus limited) of knowledge sources available to the study-abroad and telecollaboration groups. The study-abroad group had multi-layered opportunities to learn about the target culture, including one-on-one language partners, host families, service learning, and participation in extracurricular activities. Through their immersion in the host environment, students in the study-abroad group were easily able to expand their social networks and to encounter a wide variety of conversational topics through multiplex interactions. Therefore, the study-abroad group’s reflective writing discussed a wider range of topics and exhibited a greater profundity of knowledge, encompassing daily life as well as social, cultural, political, and even historical agendas. Lucy described this aspect as follows:

For 6 weeks, I learned a lot about Korean lifestyles and culture. From my language partner, I learned about actual Korean university students’ lifestyles. Every day, my host mother made different Korean food for me, and my host father read interesting news articles to me (. . . . ) The Korean children in service learning were so active and cute that I felt relaxed (. . . . ) Studying Korean in Korea was completely different from studying Korean in the US. In the US, I studied only the Korean language and knew little about Korean culture. But here in Korea, I learned a lot about Korean culture outside the classroom by interacting with many Koreans.

By contrast, the telecollaboration group’s cultural knowledge was mediated by one or two native speakers; this restricted access to the target culture was associated with a possible tendency to overgeneralize or incorrectly synthesize cultural information. For example, Hyunmin, a Korean student, wrote, “I told my partner that Korean university life in freshman year is all about drinking, drinking, and drinking alcohol.” Chang, a U.S. participant, recognized this risk of constructing overgeneralized or incorrect knowledge from the interaction and remarked, “The information I received was based on my partner’s observations and may have been a bit generalized.” While telecollaboration helps students to enhance their cultural knowledge (Bohinski & Leventhal, 2015; Schenker, 2012; Tian & Wang, 2010), the limited sources, such as being paired with a single partner, may lead to the formation of new and incorrect stereotypes concerning the target culture (Itakura, 2004). It should be noted that, although the study-abroad and telecollaboration groups discussed nearly identical topics with their language partners, the variety of sources to which the
study-abroad group had access enabled them to corroborate newly acquired information and deepen their cultural knowledge, which otherwise would have remained superficial or limited.

The second theme was also related to the different characteristics of the students’ knowledge acquisition sources: firsthand versus secondhand. The study-abroad group exhibited deeper and more specific cultural knowledge, which was often the result of direct exposure to the target culture, whereas the telecollaboration group exhibited indirect knowledge based on secondhand experience as relayed through their partners. The groups’ reflective writings on the same topics (e.g., Korean university festivals) clearly highlighted this difference between the groups. Aron, from the study-abroad group, was able to describe festivals in detail, based on his direct experience:

Korean university students eat chicken and drink beer during the festivals (……) Famous singers visit campuses and give performances. Last Friday, I went to the Korean university festival. There were lots of people there, and it was fun.

Whereas Aron’s description conveyed vivid images of the festival and his response to it, Kelly’s reflections, based on her experience of telecollaboration, sounded relatively impersonal and unengaged: “Each major makes a store together and sells things. This helps people within each major to become more connected and creates a sense of unity within the school as a whole.” Although both the study-abroad and telecollaboration methods are aimed at enhancing participants’ cultural knowledge by immersing students in the target culture, whether the experience was firsthand or secondhand (i.e., via someone else’s experience) appeared to make a difference in the students’ levels of cultural knowledge. Just as visually witnessing an event is superior to hearing about it, supplementing new cultural knowledge with direct exposure to that culture may help students to personalize their knowledge and commit it more firmly to memory than only listening to accounts and descriptions of the target culture.

A synthesis of the quantitative and qualitative findings from the current study indicated that, despite the rich environments for fostering cultural knowledge offered by both the study-abroad and telecollaboration methods, the study-abroad group was able to grasp more specific and deeper cultural knowledge. As Deardorff (2009) proposed, “Deep cultural knowledge entails a more holistic, contextual understanding of that culture, including historical, political, and social contexts” (p. 28); more immersive and multi-faceted exposure to the target culture enabled the study-abroad group to cultivate a deeper and broader level of cultural knowledge.

Notably, the impact of telecollaboration on perceived cultural knowledge was not as strong as that of the study-abroad method. However, online contact with the target culture from the student’s home institution did contribute to the development of cultural knowledge. This finding is particularly significant, because the control group who took the target language course at their home institution without any online contact made no significant improvements during the same period. This suggests that even indirect exposure to the target culture may enhance L2 learners’ intercultural knowledge (Göbel & Helmke, 2010). Improving L2 learners’ cultural knowledge is important, as an appreciation of culturally acceptable or inappropriate behavior is necessary in interactions with speakers of the target language. Additionally, Czerwionka et al. (2015) suggested a positive relationship between cultural knowledge and intercultural interactions, because an appreciation of cultural norms allows interlocutors to anticipate conversation topics and their counterparts’ behaviors. Therefore, to produce interculturally competent speakers, foreign language courses should consider including a telecollaboration component in their curricula.

The Impact of Study Abroad, Telecollaboration, and On-campus Study on the Affective Aspects of ICC

Mixed ANOVAs were conducted on each of the affective domains of ICC: engagement, confidence, and respect. The results of engagement showed a main effect of time, $F(1, 147) = 16.32, p < .001$, partial $\eta^2 = .10$, as well as a main effect of group, $F(2, 147) = 8.50, p < .001$, partial $\eta^2 = .10$. These results indicate that the students’ perceived engagement, averaged across the groups, significantly improved from pre-study to post-study and that the mean score, pooling data across time, was significantly higher for the study-
abroad group than for the other two groups. The Time × Group interaction effect, however, did not reach the significance level, $F(2, 147) = 2.96, p = .055$, partial $\eta^2 = .04$, suggesting that the three groups did not differ significantly from each other over time. Individual analyses indicated that whereas the three groups at the beginning of the study had similar levels of perceived engagement, only the study-abroad and telecollaboration methods (not the control group) enhanced students’ perceived engagement to a significant level within six weeks (Figure 2). Furthermore, the study-abroad group’s growth over time did not significantly differ from that of the telecollaboration group, although the study-abroad group’s perceived engagement at post-study was significantly higher than that of the telecollaboration group.

![Figure 2](image1)

*Figure 2.* Groups showing significant gains from pre- to post-study on the affective aspect (engagement) of intercultural competence; *$p < .05$.  

With regard to confidence, the mixed ANOVA revealed a significant effect for time, $F(1, 147) = 16.32, p < .001$, partial $\eta^2 = .19$, but not for group, $F(2, 147) = .48, p = .62$, partial $\eta^2 = .01$. In addition, the Time × Group interaction did not reach the significance level, $F(2, 147) = 3.02, p = .052$, partial $\eta^2 = .04$. These results indicate that perceived confidence in intercultural communication increased, averaged across the groups for six weeks. Although the three groups did not significantly differ from one another at the start of the study, the improvement in the study-abroad and telecollaboration groups, but not the control group, was significant over time (Figure 3). Despite the notable improvement, the three groups did not significantly differ from one another at post-study.

![Figure 3](image2)

*Figure 3.* Groups showing significant gains from pre- to post-study on the affective aspect (confidence) of intercultural competence; *$p < .05$.  

![Study-abroad*](image3)

![Telecollaboration*](image4)

![Control](image5)
The mixed ANOVA on respect showed that there was no main effect of time, $F(1, 147) = .01$, $p = .94$, partial $\eta^2 = .00$, but there was a significant main effect of group, $F(2, 147) = 8.50$, $p < .001$, partial $\eta^2 = .10$. Furthermore, there was no Time $\times$ Group interaction, $F(2, 147) = .82$, $p = .44$, partial $\eta^2 = .01$. These results indicated that none of the three groups exhibited a significant change in their perceived respectful attitudes over time (Figure 4). The study-abroad group’s mean score for respectful attitude at the start of the study was significantly higher than that of either the telecollaboration or control group and remained consistently higher than the other two groups over time.

![Figure 4](image)

*Figure 4.* Groups showing changes from pre- to post-study on the affective aspect (respect) of intercultural competence.

In summary, the study-abroad and telecollaboration methods significantly promoted L2 learners’ perceived engagement and confidence at similar levels, whereas on-campus language study (i.e., the control method) did not. However, none of the three groups improved significantly in terms of their level of respect for the target culture during the six weeks.

Through an iterative process of coding reflection papers, interview transcripts, and exit essays, we categorized the qualitative data related to the affective domain into several themes. The main themes included (a) interactional engagement (friendship and self-disclosure); (b) interactional confidence (repeated contact and recognition of similarities between groups); and (c) respect for other cultures (dealing with prejudice and empathy/perspective adoption).

First, both the study-abroad and telecollaboration methods promoted frequent interactions with language partners, which resulted in friendships and self-disclosure. Lee (2007) reported that some students in her study perceived telecollaborative exchanges via desktop videoconferencing as less engaging than in-person interactions. In this regard, it is particularly noteworthy that telecollaboration, in our study, helped the participants to actively communicate with their partners even without face-to-face meetings.

One possible reason for this outcome may be explained by Allport’s (1954) intergroup contact theory. Allport (1954) hypothesized four conditions for optimal intergroup contact: equal status, common goals, intergroup cooperation without competition, and the support of authorities for the contact. It seems that both the study-abroad and telecollaboration methods in the present study satisfied these conditions. All participants in both groups were paired with peer-age partners from the target culture (equal status), exchanged information with regard to their own languages and cultures (shared common goals), collaborated with partners to complete mutual tasks (intergroup cooperation), and were encouraged by their instructors to contact their partners (authorities’ support). Considering that the participants in the telecollaboration studies by Lee (2007) and Darhower (2008) reported feelings of intimidation and avoided interacting with their professors as language partners, the equal status between interlocutors in our study
was key in promoting frequent contact.

According to the reflective writings and mobile phone chat information, the study-abroad group met with their partners in person at least three times per week, and the telecollaboration group interacted at least five times per week through voice calls or text messages. It appears that the use of mobile phones as a communication tool in our study may have enabled the telecollaboration group to interact with their partners as frequently and intimately as did the study-abroad group with face-to-face meetings. Such regular and high-quality personal interactions may promote conditions that are favorable to the establishment of friendships and self-disclosure between partners. The following excerpts reflect this aspect:

We met each other whenever we had time, much more frequently than required (……) Since we had the same hobbies, we became close friends. We went to Myungdong on the weekend and shopped for cosmetics. I had a great time with her. Thanks to her, I learned a lot about Korean culture and lifestyles (Serena, study abroad).

We talked really actively and had two-hour-long conversations on the phone (……) I felt like we were close friends who spent time talking about little things like favorite drinks and new cafés to visit (Yumi, telecollaboration).

The frequent contact and the intimate nature of the interactions naturally provided the students with opportunities to disclose information about themselves to their language partners. Both groups’ reflective writings exhibited signs of self-disclosure, and the disclosed information included not only their daily schedules, likes and dislikes, leisure activities, ideal romantic partners, and thoughts on marriage, but also more private aspects of their lives, as illustrated by Jihyun’s experience with the telecollaboration group: “My partner hasn’t had a boyfriend yet, so she asked me several questions, such as what me and my boyfriend usually do or where we go on dates. She said she will go ice skating with her future boyfriend.”

The second theme involved interactional confidence. Both the study-abroad and telecollaboration groups experienced some anxiety and difficulties in conversing with partners from a different culture during the early stages of the interaction. Nevertheless, the more they contacted each other, the more comfortable with the target culture they became, with reduced anxiety and enhanced interactional confidence. Their reflective writing captured this phenomenon in detail:

I was a little nervous at the prospect of talking for over an hour in Korean with a still-not-very-familiar person. I improved during the second half and began to speak more. In general, I made progress as the conversation went on, and felt more relaxed and comfortable while talking to my language partner (Lucy, study abroad).

At first, talking on the phone with someone that I didn’t know well was somewhat awkward, but now I’m already used to it and feel much more comfortable (Yeji, telecollaboration).

Not only the frequent interactions but also the recognition of the similarities between Korean and U.S. students promoted students’ interactional confidence. In particular, a total of 30 students from the telecollaboration group (n = 54) mentioned that they recognized similarities between people from Korea and the US with respect to many aspects, including their daily routines, university life, interests, and worries. The discovery that they had many things in common enabled the students to identify with one another and narrowed their psychological distance. Misu’s reflective writing echoed this:

I had a fear of Americans. From this project, however, I learned that their behavior and thoughts are very similar to ours (……) I’m overcoming my long-lasting fear of speaking English after learning that we are all the same.

The above-mentioned friendships may have stemmed from the students’ realizations that they were very similar as people, despite their cultural differences. In brief, the frequent interactions fostered the students’ awareness of the similarities between people from Korea and the US, toward the realization that all human beings are alike in many respects. This awareness promoted both groups’ interactional confidence,
supporting previous findings that repeated contact reduces negative feelings, such as anxiety and fear, and generates positive feelings, including comfort and empathy (Pettigrew, 1998; Pettigrew & Tropp, 2006, 2008).

The last theme was related to coping with prejudice and empathy or perspective adoption. The Korean students reported that they had stereotyped views or prejudices toward U.S. culture, typically influenced by a mixture of media and the Internet. Several students mentioned this:

Because of American dramas such as Gossip Girl, I have always thought that their lives would be somewhat different from mine: a lot of parties, queen-like students, handsome guys who are good at everything (especially football). However, we were almost the same; they care about their jobs, study hard to get grades, join college clubs, and make friends there (Minhee, telecollaboration).

Before the conversations with my partner, I thought that Americans had very open and free attitudes to love. But, I was surprised to learn that my partner was very shy about dating (Jihyun, telecollaboration).

Our findings are consistent with those of some previous studies in that telecollaboration offers students the opportunity to correct any negative stereotypes that they hold regarding the target culture (Bohinski & Leventhal, 2015; Kirschner, 2015; Itakura, 2004). As Pettigrew (1998) observed, intergroup contact provides individuals with the opportunity to reappraise a group’s norms and customs; in turn, learning about an outgroup helps to correct negative views or stereotypes. Moreover, students in both the study-abroad and telecollaboration groups showed signs of empathy and acceptance of the other culture’s perspectives. For example, Emily, from the study-abroad group, expressed empathetic attitudes toward the elderly Koreans whom she met at a nursing home, saying that they were really like her grandmothers. Similarly, Yuha, from the telecollaboration group, adopted her U.S. partner’s perspectives on freedom and decided not to sacrifice her hobbies (i.e., ballet) in response to the pressures of studying and preparing for the job market. Affective aspects, such as empathy and perspective adoption, are particularly important in reducing prejudice. Although knowledge plays a mediating role in diminishing prejudice, simply learning about an outgroup does not necessarily lessen prejudice; this emphasizes the significance of the affective domain (Pettigrew & Tropp, 2008).

It should be noted, however, that although the qualitative data from both the study-abroad and telecollaboration groups revealed their empathy and acceptance of others’ values, the quantitative results regarding their respectful attitudes showed no gains between the pre- and post-study surveys. Because open-minded and unprejudiced people tend to seek out opportunities for intercultural contact (Pettigrew & Tropp, 2006), it is possible that the participants already had high pre-survey scores that left little room for improvement. Indeed, previous studies on telecollaboration (Hertel, 2003; Schenker, 2012) or study-abroad methods (Williams, 2005) have shown that the participants’ interest in or respect for other cultures did not significantly change after the exchanges, due to their already high levels of the affective state. Furthermore, the fact that students in the on-campus language study group had registered for foreign language classes indicates an existing high level of interest in different cultures, offering an explanation as to why the control group did not significantly differ from the telecollaboration or study-abroad group in this aspect.

The Impact of Study Abroad, Telecollaboration, and On-campus Study on the Behavioral Aspects of ICC

Main effects were observed for time, \( F(1, 147) = 41.02, p < .001 \), partial \( \eta^2 = .22 \), and for group, \( F(2, 147) = 19.02, p < .001 \), partial \( \eta^2 = .21 \). The Time \( \times \) Group interaction effect was significant with a small effect size, \( F(2, 147) = 3.64, p = .029 \), partial \( \eta^2 = .05 \), meaning that the growth in behavioral intention to learn about the target culture differed significantly among the three groups. To understand this interaction, post hoc analyses were performed. Separate paired \( t \)-tests for each group revealed that both the study-abroad and telecollaboration groups significantly improved over time, whereas the control group did not (Figure 5). In addition, separate ANOVAs at each time point (i.e., pre- and post-study) showed that the study-abroad group’s behavioral intention was significantly higher than that of the telecollaboration or control group at both time points. It should be noted, however, that the degrees of improvement in behavioral
intention did not differ significantly between the study-abroad and telecollaboration groups. Moreover, the telecollaboration group’s post-study behavioral intention was significantly greater than that of the control group ($p = .006$), although the pre-study levels of behavioral aspects were similar in both the telecollaboration and control groups ($p = 1.00$).

**Figure 5.** Groups showing significant gains from pre- to post-study on the conative aspect (behavior) of intercultural competence; $^* p < .05$.

The themes that emerged from the qualitative data were (a) immediate actions and (b) forthcoming actions with plans, and these contained specific examples of the behavioral intentions of the study-abroad and telecollaboration groups. First, both the study-abroad and telecollaboration groups took immediate action associated with their interaction with the target culture. Pamela, from the study-abroad group, researched Korean history and Gojong, the first Emperor of Korea, immediately after having taken part in guided tours at historical sites. Yumi, from the telecollaboration group, had never tried avocado before but, having heard about avocado juice for the first time from her U.S. partner, said “After the class, I will go to a café and try avocado juice and give her my review.” These examples indicate that interactions with the target culture, via either study abroad or telecollaboration, actually led students to take immediate actions.

Second, both groups expressed their anticipation of forthcoming opportunities to experience more of the target culture and expressed wishes to maintain relationships with their partners. It is particularly noteworthy that both the study-abroad and telecollaboration groups reported specific plans that were indicative of future behavior. Students in the study-abroad group revealed plans such as returning to Korea in three years to teach English, revisiting their host family the following summer, or practicing Korean with their language partners after their return to the US. Students in the telecollaboration group made similar plans, including visiting one another’s countries, going to restaurants that their partners had recommended, or applying make-up in the style of Princess Fiona on St. Patrick’s Day. The students’ anticipated actions or plans are strong indicators of their future behavior. After the telecollaboration project had ended, interviews with the telecollaboration group revealed that two of the U.S. students and two of the Korean students had actually visited one another’s countries and met their partners in person during the summer vacation.

To summarize, the telecollaboration group exhibited a similar level of behavioral intention to learn about the target culture to that of the study-abroad group, and a higher level than that of the control group. The qualitative data also imply that students in both the telecollaboration and study-abroad groups showed signs associated with immediate or future actions after the intercultural exchanges. Considering that conation, measured as a behavioral dimension in the current study, has been recognized as a precursor to potential behavior (Huitt & Cain, 2005), both the telecollaboration and study-abroad methods can be deemed effective in activating students’ interest and willingness to experience other cultures.
Summary of Findings and Implications

Table 4 shows a summary of the quantitative results. The study-abroad and telecollaboration methods significantly improved L2 learners’ perceived cognitive, affective (engagement and confidence), and behavioral ICC abilities over 6 weeks, whereas the on-campus language study (control) group did not show any significant gains during the same period. In particular, the study-abroad learners developed more specific and deeper levels of cognitive aspect of ICC than did those who learned via the telecollaboration approach, probably due to different levels (multiple vs. limited) and characteristics of (firsthand vs. secondhand) the knowledge sources. However, the positive effects of telecollaboration and study abroad appear to be similar in terms of the affective aspects of ICC. It seems that both telecollaboration and study-abroad methods offered students opportunities to enhance their engagement in interactions with native speakers through the development of friendships and self-disclosure, as well as opportunities to boost their confidence through repeated contact and the recognition of similarities. Although neither the study-abroad nor the telecollaboration group showed any quantifiable gains in respectful attitudes, the qualitative data revealed that both groups increased their respectful mindsets, for example, in dealing with stereotypes and empathy or perspective adoption. Finally, the study-abroad and telecollaboration groups (but not the control group) showed significant gains in the behavioral dimension of ICC, with no statistical difference of the degrees of improvement between the two groups. The qualitative data also showed that both groups improved their behavioral intention to learn about the target culture through immediate action or future plans.

Table 4. Summary of the Quantitative Results

<table>
<thead>
<tr>
<th>Groups showing significant gains from pre-to post-study</th>
<th>Cognitive</th>
<th>Affective</th>
<th>Behavioral</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time × Group interaction</td>
<td>Engagement</td>
<td>Confidence</td>
<td>Respect</td>
</tr>
<tr>
<td>Sig.</td>
<td>Not sig.</td>
<td>Not sig.</td>
<td>Sig.</td>
</tr>
<tr>
<td>Groups showing significant gains from pre-to post-study</td>
<td>Abroad</td>
<td>Abroad</td>
<td>Abroad</td>
</tr>
<tr>
<td>Tele</td>
<td>Tele</td>
<td>Tele</td>
<td>Tele</td>
</tr>
<tr>
<td>Group differences at the pre-study</td>
<td>Abroad</td>
<td>Abroad</td>
<td>Abroad</td>
</tr>
<tr>
<td>= Tele</td>
<td>= Tele</td>
<td>= Tele</td>
<td>&gt; Tele</td>
</tr>
<tr>
<td>= Control</td>
<td>= Control</td>
<td>= Control</td>
<td>= Control</td>
</tr>
<tr>
<td>Group differences at the post-study</td>
<td>Abroad</td>
<td>Abroad</td>
<td>Abroad</td>
</tr>
<tr>
<td>&gt; Tele</td>
<td>&gt; Tele</td>
<td>= Tele</td>
<td>&gt; Tele</td>
</tr>
<tr>
<td>= Control</td>
<td>= Control</td>
<td>= Control</td>
<td>&gt; Control,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Tele</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>= Control</td>
</tr>
</tbody>
</table>

Note. Abroad = study abroad, Tele = telecollaboration, Control = on-campus L2 study, Sig = Significant.

*aThe results of the paired samples t-tests; bThe results of the one-way ANOVA; An inequality sign indicates a significant difference between groups, whereas an equality sign shows a non-significant difference between groups.

These findings have several implications. First, we suggest that telecollaboration can serve as an educational and cost-effective alternative to the study-abroad method for developing affective and behavioral aspects of ICC. Considering that it is more difficult to change attitudes and behavior via intercultural training than it is to change knowledge (Mendenhall et al., 2004), our finding that telecollaboration effectively facilitated the affective and behavioral aspects of ICC shows the pedagogical and practical value of telecollaboration compared to study abroad. Although the study-abroad method
offered richer contexts for improving cultural knowledge, affective factors may play a stronger role than
knowledge in prejudice reduction (Pettigrew & Tropp, 2008). Moreover, given that the behavioral
dimension of ICC includes willingness to directly experience the target culture, telecollaboration can
achieve the desired objectives as effectively as the study-abroad approach.

Second, this study offers important considerations for different learning scenarios (i.e., study abroad,
telecollaboration, and on-campus language study). Although both the on-campus and telecollaboration
groups stayed at their home institutions for the same period, only the telecollaboration group exhibited
significant improvements across all three main dimensions of ICC. Our findings add important empirical
evidence to the theoretical claim that cultural learning must be experiential and involve the exchange of
cultural differences, rather than being confined within a classroom (Byram & Feng, 2004). Therefore,
teaching cultural content in foreign language classes, supplemented by physical or online intercultural
interactions, should be considered to develop L2 learners’ ICC.

Limitations and Future Directions for Research

This study has some limitations. Due to convenience sampling as well as the students’ diverse target
languages and varied proficiency, the findings of this study may not be generalizable to other populations
or different foreign languages. In addition, although pre- and post-study surveys have been used to measure
intercultural competence previously, we acknowledge that self-reported data must be interpreted with a
degree of caution.

Future directions for research acknowledge the limitations of the current study. This study had a narrow
scope in terms of the selection of participants and the time period. As the current study involved Korean
students majoring in English, it is possible that the effects of telecollaboration or on-campus language study
on intercultural competence may have been limited because of their pre-existing high levels of intercultural
competence. Studies that investigate students with low intercultural competence may offer new insights
into the use of telecollaboration. Moreover, as the impact of the telecollaboration and study-abroad methods
on the cognitive dimension of ICC differed in the current study, further research on this issue may offer a
better understanding and add to the existing literature.

Acknowledgements

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on the study-abroad program.

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**Appendix A. Descriptive Statistics of Intercultural Competence Factors (N = 150)**

<table>
<thead>
<tr>
<th>Statements</th>
<th>Loadings</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F1: Cognitive-knowledge ($\alpha = .79$)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I know a lot about the cultural products of the target culture (tangible &amp; intangible products), such as literature, architecture, art, paintings, song, dance, a system of education, etc.</td>
<td>.58</td>
<td>3.29</td>
<td>1.16</td>
</tr>
<tr>
<td>2. I know a lot about the cultural perspectives (ideas and attitudes) of the target culture, such as values and beliefs.</td>
<td>.83</td>
<td>3.75</td>
<td>1.04</td>
</tr>
<tr>
<td>3. I am well aware of the differences between my own culture and the target culture.</td>
<td>.71</td>
<td>4.13</td>
<td>.96</td>
</tr>
</tbody>
</table>
6. I know a lot about the cultural practices of the target culture (patterns of behavior accepted by a society), such as turn-taking in conversation, the use of gestures, table-manners, and socially appropriate behaviors for dating or weddings.

**F2: Affective-engagement** ($\alpha = .70$)

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1. I enjoy interacting with people from the target culture.</td>
<td>.57</td>
<td>4.76</td>
</tr>
<tr>
<td>17. I often show my understanding through verbal or nonverbal cues when I interact with people from the target culture.</td>
<td>.56</td>
<td>4.61</td>
</tr>
<tr>
<td>18. I enjoy talking about and getting to know about cultural differences between my own and the target culture.</td>
<td>.82</td>
<td>4.90</td>
</tr>
<tr>
<td>20. If I go to the target country, I am confident that I can adapt to the differences between my own culture and the target culture more easily.</td>
<td>.41</td>
<td>4.56</td>
</tr>
<tr>
<td>23. I am open-minded to people from the target culture.</td>
<td>.36</td>
<td>5.17</td>
</tr>
<tr>
<td>*11. I tend to wait until judging people from the target culture before I get to know them.</td>
<td>.16</td>
<td>4.31</td>
</tr>
<tr>
<td>*24. I avoid those situations where I will have to deal with culturally-distinct people (reverse-coded).</td>
<td>-.03</td>
<td>3.93</td>
</tr>
</tbody>
</table>

**F3: Affective-confidence** ($\alpha = .72$)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3. I feel confident that I will interact well with people from the target culture.</td>
<td>.71</td>
<td>4.23</td>
</tr>
<tr>
<td>4. I find it very hard to talk in front of people from the target culture. (reverse-coded)</td>
<td>.23</td>
<td>3.37</td>
</tr>
<tr>
<td>5. I always know what to say when interacting with people from the target culture.</td>
<td>.70</td>
<td>3.01</td>
</tr>
<tr>
<td>6. I can be sociable when interacting with people from the target culture.</td>
<td>.82</td>
<td>4.11</td>
</tr>
<tr>
<td>10. I feel confident when interacting with people from the target culture.</td>
<td>.82</td>
<td>3.76</td>
</tr>
<tr>
<td>16. I actively engage in conversation when I interact with people from the target culture.</td>
<td>.71</td>
<td>4.19</td>
</tr>
</tbody>
</table>

**F4: Affective-respect** ($\alpha = .74$)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2. I think people from the target culture are narrow-minded. (reverse-coded)</td>
<td>.57</td>
<td>4.72</td>
</tr>
<tr>
<td>7. I don’t like to be with people from the target culture. (reverse-coded)</td>
<td>.71</td>
<td>5.15</td>
</tr>
<tr>
<td>8. I respect the values of people from the target culture.</td>
<td>.56</td>
<td>5.20</td>
</tr>
<tr>
<td>13. I respect the ways people from the target culture behave.</td>
<td>.46</td>
<td>5.03</td>
</tr>
<tr>
<td>21. I would not accept the opinions of people from the target culture. (reverse-coded)</td>
<td>.48</td>
<td>5.19</td>
</tr>
<tr>
<td>22. I think my culture is better than the target culture. (reverse-coded)</td>
<td>.62</td>
<td>4.61</td>
</tr>
</tbody>
</table>

**F5: Conative-Behavior** ($\alpha = .81$)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4. I try to find time to be familiar with the target culture.</td>
<td>.80</td>
<td>4.06</td>
</tr>
</tbody>
</table>
5. I try to seek an opportunity to improve my understanding of the target culture.

7. I use various sources to learn about the target culture.

Note. Factor loadings from confirmatory factor analysis; M = Mean; SD = Standard deviation; *Two items were excluded from the engagement factor due to their non-significant factor loadings, and the reliability of the factor was calculated without the two items.

**Appendix B. Fit Indices of Confirmatory Factor Analysis**

<table>
<thead>
<tr>
<th>Models</th>
<th>(No. of items)</th>
<th>X²</th>
<th>df</th>
<th>p</th>
<th>CFI</th>
<th>TLI</th>
<th>GFI</th>
<th>SRMR</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Knowledge (4)</td>
<td>2.75</td>
<td>2</td>
<td>&gt; .05</td>
<td>1.00</td>
<td>.99</td>
<td>.99</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>Engagement (5)</td>
<td>6.87</td>
<td>4</td>
<td>&gt; .05</td>
<td>.98</td>
<td>.94</td>
<td>.98</td>
<td>.04</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>Confidence (6)</td>
<td>16.04</td>
<td>9</td>
<td>&gt; .05</td>
<td>.98</td>
<td>.97</td>
<td>.96</td>
<td>.03</td>
<td>.07</td>
</tr>
<tr>
<td></td>
<td>Respect (6)</td>
<td>10.83</td>
<td>2</td>
<td>&gt; .05</td>
<td>.98</td>
<td>.97</td>
<td>.98</td>
<td>.03</td>
<td>.05</td>
</tr>
<tr>
<td>Conative</td>
<td>Behavior (3)</td>
<td>.00</td>
<td>0</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

Note. As the behavioral domain contained only three items and just-identified, the model fit was not calculated; CFI = Comparative fit index; TLI = Tucker-Lewis index; GFI = Goodness of fit; SRMR = Standardized root mean square residual; RMSEA = Root mean square error of approximation; and Good model fit indices should be nonsignificant chi-square values, as well as CFI ≥ .95, TLI ≥ .95, GFI ≥ .95, SRMR ≤ .08, and RMSEA ≤ .07 (Hooper, Coughlan, & Mullen, 2008).

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