Effects Of Online Peer Learning On Speaking Performance And Language Learning Anxiety

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ABSTRACT: This study investigated the effects of an online peer learning program on undergraduate student English speaking proficiency, language anxiety, and perceptions of online peer learning. The study adopted a case study design and recruited 32 undergraduate students from the Department of Applied Foreign Languages at a university in central Taiwan. The online peer learning program improved students' English communication skills and reduced students' learning anxiety by facilitating interactions with online foreign peers. Quantitative data from oral proficiency tests and the Foreign Language Classroom Anxiety Scale were collected before and after the online peer learning program. Qualitative data were analyzed and coded to determine students' perceptions of the online peer learning program. A significant improvement in the students' oral proficiency was observed in the pretest and posttest scores. However, no significant reduction in overall speaking anxiety levels was noted, although the students reported a noticeable decrease in anxiety levels following the intervention, particularly when they talked about general or familiar topics. The results of this study demonstrate that the online peer learning program effectively enhanced the speaking proficiency of students of English as a foreign language and moderately alleviated their learning anxiety. On the basis of these findings, this study provides suggestions for foreign language teachers.

KEYWORDS: language learning anxiety, peer learning

I. INTRODUCTION

With the advent of globalization and the rise of English as the global lingua franca, English proficiency has become vital for teachers and learners. Nevertheless, Taiwanese English as a foreign language (EFL) learners often struggle with improving their speaking proficiency because of obstacles such as the fear of making mistakes or embarrassing themselves in speaking in public, low confidence, and limited body language skills. Speaking proficiency is thus a formidable challenge for English learners (Abdulla, 2019). In language education, speaking is pivotal means of assessing learners' ability to use language, with conversation skills often used as indicators of success. Scholars reported that strong listening and speaking skills are necessary in professional settings, urging educators to prioritize improvement of these skills (Rachayon & Soontornwipas, 2019). Consequently, teaching and research endeavors have targeted oral proficiency through innovative curricula, methods, materials, and assessments.

Although many researchers have reported a significant negative relationship between foreign language anxiety (FLA) and oral communication (Horwitz et al., 1986; Woodrow, 2006, as cited in Shazly, 2021), other researchers have argued that FLA can facilitate foreign language learning by helping learners develop coping strategies (Alpert & Haber, 1960; Chastain, 1975; Gkonou et al., 2017; Kleinmann, 1977; Scovel, 1978 as cited in Shazly, 2021). However, low anxiety may distract learners from learning tasks (Williams, 1991, as cited in Shazly, 2021) and impair language performance (He, 2018, as cited in Shazly, 2021). Whether anxiety is beneficial to foreign language learning remains a topic of debate.

Computer-assisted language learning (CALL) has been widely implemented in language education (Zawacki-Richter et al., 2019; Zhang & Zou, 2020, as cited in Shazly, 2021). CALL provides diverse, nonthreatening opportunities for meaningful foreign language use by offering students with targeted, nonjudgmental feedback in oral communication practice (Bao, 2019, as cited in Shazly, 2021). Accordingly, some scholars investigated using CALL to mitigate FLA in speaking tasks (Teimouri et al, 2019, as cited in Shazly, 2021).

Computer-mediated communication (CMC) and CALL have become widespread as computer and network technologies have advanced. CMC and CALL have led many language learners to form social networks and virtual communities, which has integrated these technologies into society more broadly. For example, Wu et al. (2013) highlighted the studies in EFL teaching concerning Internet and technology applications (Liu & Chen, 2007; Payne & Ross, 2005; Tudini, 2003; Wu & Marek, 2009). Online instruction offers students genuine interactive experiences (Bax, 2003; Sengupta, 2001), freeing them from classroom constraints and bolstering

their learning motivation (Dornyei, 2005; Lamb, 2004). Mahdi (2014) observed that CALL can enhance students' language learning abilities and foster effective language skill development (Peterson, 2009; Mahfouz & Ihmeideh, 2009). Studies have revealed that considerable progress has been made in developing AI programs that can engage in text or speech-based conversations with users (Nordrum, 2017). Speech-enhanced systems, such as Siri, Alexa, and Mondly, offer automatic speech recognition and computer-assisted pronunciation, whereas writing-enhanced systems, such as ELIZA, Lucy, and web chatbots, focus on error detection and provide immediate feedback (Bibauw et al., 2019).

The present study investigated the influence of CALL and CMC on students' speaking proficiency and language learning anxiety, focusing on online oral learning, peer learning, and learning anxiety in a cross-cultural communication course that encouraged students to gradually improve their oral communication ability and language use in diverse contexts. The study addressed the following research questions: (1) Is there an observable difference in students' speaking proficiency before and after they participate in an international language partner speaking course? (2) Is there an observable difference in language learning anxiety before and after students participate in an international language partner speaking course? (3) What are students' perceptions regarding speaking anxiety before and after they participate in international language partner speaking practice?

II. METHODS

1. Participants

The study recruited 32 students from a technology university in central Taiwan. These students participated in an online international buddy program that integrated English communication skills. None of the participants had prior experience with such courses. Of the local Taiwanese students, 24 were women, and 8 were men; they had varying levels of English proficiency, ranging from European Language Framework A1 (3 students) to A2 (10 students), B1 (18 students), and B2 (1 student). Most students had intermediate English proficiency, with only a few beginners or intermediate/advanced learners. The course involved small group discussions with eight foreign partners as a form of speaking practice. The foreign partners were from six countries and comprised two women and four men: Mandy and Johnny from the USA, Andrew from Australia, Felix from Guatemala, Jan from Switzerland, Mathilda from Indonesia, James from Australia, and Brian from Brunei.

2. Instrument

The authors used quantitative and qualitative methods to analyze speaking performance and student anxiety levels before and after the online peer learning. The quantitative tool that was employed was the Foreign Language Classroom Anxiety Scale (FLCAS) developed by Horwitz et al. (1986), with students' anxiety levels measured on a Likert scale of 1–5 (strongly disagree–strongly agree). To ensure that the Taiwanese students—whose native language was Chinese—understood the statements on the instrument, the Chinese version of the FLCAS developed by Chu (2008), which has a reliability level of .92, was used in this study. The qualitative data used to evaluate the student learning and outcomes were obtained through analysis of the students' learning journals and interviews.

3. Procedures

The researchers explained the purpose of the study to the students and informed them that their participation in the study would not influence their grades. Students who were willing to participate signed a consent form. The study lasted for 1 academic year, that is, over 9 weeks in each of the two semesters. In the first 9 weeks, the students were provided with regular instruction. They completed a pretest and a learning anxiety questionnaire in the first week and a midterm test in the ninth week. The international peer platform was introduced in the 10th week, and 7 international peer sessions were integrated into the course from the 11th to the 17th weeks. The participants completed a posttest and a learning anxiety questionnaire in the 18th week. The course content encompassed English oral expression and communication skills.

4. Data Analysis

Data were analyzed using SPSS software and thematic analysis. Participants' speaking performance and FLCAS scores were analyzed to investigate the association between speaking performance and language anxiety. Paired sample t tests were performed to evaluate differences in the students' speaking ability and language learning anxiety before and after participation in the English communication skills course. Text analysis was used to code and synthesize the content of the learning journals and face-to-face interviews to determine participants' feelings regarding speaking anxiety.

III. RESULTS AND DISCUSSION

Table 1 presents the means and standard deviations for the students' oral pretest and posttest scores. The results indicate that the average score on the speaking pretest for English communication skills before the peer online intervention was 84.88 (standard deviation: 4.90), and the average score on the speaking posttest was 87.22 (standard deviation: 3.70). The paired sample t test (Table 2) revealed a significant improvement in the posttest scores relative to the pretest scores ($p < .05$). This finding is consistent with

the improvement in speaking scores reported by Yeh and Lai (2019), who reported that online learning may improve students' speaking performance.

Table 1: Descriptive Statistics for Pretest and Posttest Speaking Scores

Speaking Scores	Means	Number	Standard Deviation	Standard Error of the Mean
Pre-test	84.8750	32	4.90392	.86690
Post-test	87.2188	32	3.69598	.65336

Table 2: Paired Sample t Test for Pretest and Posttest Speaking Scores

	t-value	Degrees of Freedom	Mean Difference	Standard Deviation	Standard Error of the Mean	95% Confidence Interval Upper Limit	Significance (Two-tailed)
Pre-test Scores - Post-test Scores	-2.34375	31	4.19377	.74136	-3.85577	-.83173	.003

In the final semester of the course, the authors introduced the language learning anxiety scale and an online international peer speaking program for peer learning. At the end of the semester, the same scale was administered again, and quantitative data analysis revealed that the online peer learning program reduced the language learning anxiety of the Taiwanese students (see Table 3). The average score for language learning anxiety before the peer learning program was 3.08 (standard deviation: 0.70); after the program, the score decreased to 3.05 (standard deviation: 0.60). The results of a paired sample t-test analysis (Table 4), revealed that although language learning anxiety was lower after the online peer speaking program, the decrease in anxiety was nonsignificant. This result is consistent with the findings of Pichette (2009) and Satar and Özdener (2008). Pichette compared students in traditional classrooms with students in online distance learning and identified no difference in anxiety levels among learners. Similarly, Satar and Özdener reported no significant difference in anxiety levels before and after voice chat learning.

Table 3: Descriptive Statistics for the Language Learning Anxiety Scale

Anxiety		Mean	N	Standard Deviation	Standard Error of the Mean
Pre-test Questionnaire	Anxiety	3.0763	32	0.70181	0.12406
Post-test Questionnaire	Anxiety	3.0547	32	0.59503	0.10519

Table 4: Paired Sample t Test for Differences With 95% Confidence Interval Upper Limits

	t-value	Degrees of Freedom	Mean Difference	Standard Deviation	Standard Error of the Mean	95% Confidence Interval Upper Limit	Significance (Two-tailed)
Pre-test Questionnaire - Post-test Questionnaire	.158	31	.02156	.77418	.13686	-.25756	.876

Although the present study observed no significant differences in anxiety levels before and after online peer learning, the descriptive statistics for each item and analysis of variance provided context for the lack of improvement in anxiety. Regarding Item 2, "I am

not worried about making mistakes in English class," the average score on the pretest was 3.47 (standard deviation: 0.95), and the average score for the posttest was 2.72 (standard deviation: 1.02). This difference was significant (p < .05). Regarding Item 3, "I get very nervous when I know I'm about to be called on in English class," the average score for the pretest was 3.81 (standard deviation: 0.90), and the average score for the posttest was 3.06 (standard deviation: 0.95). This difference was also significant (p < .05). Regarding Item 5, "I don't mind taking more English classes," the average score for the pretest was 2.16 (standard deviation: 0.77), and the average score for the posttest was 2.34 (standard deviation: 0.83). The difference in scores for this item was significant (p < .05).

Regarding Item 6, "When I'm in English class, I find myself thinking about things that have nothing to do with the class," the average score for the pretest was 2.41 (standard deviation: 0.84), and the average score for the posttest was 3.00 (standard deviation: 0.80). The difference in scores for this item was significant (p < .05). Regarding Item 14, "I am not nervous when speaking English with native speakers," the average score for the pretest was 3.59 (standard deviation: 0.87), and the average score for the posttest was 2.91 (standard deviation: 0.73). The difference in scores for this item was significant (p < .05). Regarding Item 17, "I often feel like skipping English class," the average score for the pretest was 1.59 (standard deviation: 0.84), and the average score for the posttest was 2.75 (standard deviation: 1.08). The difference in scores for this item was significant (p < .001). Regarding Item 18, "I am confident when speaking English in class," the average score for the pretest was 3.44 (standard deviation: 0.91), and the average score for the posttest was 2.75 (standard deviation: 0.84). The difference in scores was significant (p < .05). Regarding Item 26, "I feel more nervous and anxious in English class than in other classes," the average score for the pretest was 2.22 (standard deviation: 1.01), and the average score for the posttest was 2.97 (standard deviation: 0.93). The difference in scores for this item was significant (p < .05). Regarding Item 31, "I worry that other classmates will laugh at me when I speak English," the average score before the pretest was 2.28 (standard deviation: 1.05), the average score on the pretest at the beginning of the second semester was 2.72 (standard deviation: 1.42), and the average score on the posttest increased to 3.00 (standard deviation: 0.98). This difference was significant (p < .05).

These results demonstrate a significant reduction in student anxiety levels after they conversed with online international learning partners. Additionally, these results indicate that not every student adapted well to the anxiety of speaking, even after receiving the guidance of online international learning partners. However, the significant difference between the pretest and posttest scores indicates that the course fulfilled its objective of improving students' speaking abilities. Moreover, although the anxiety index for speaking English was lower after the learning partner program was implemented than before it was, the difference did not reach significance, indicating that not all students immediately adapted to the requirement of communicating in English. This finding is consistent with that of Pichette (2009), who reported that remote learning requires peer conversations and that classroom anxiety can occur in online environments.

Learning journals and structured interviews were used to further explore the participants' thoughts regarding online peer learning. The participants exhibited significant improvement in their speaking ability before and after joining the online international learning partner program (Excerpt 1). According to the current study's qualitative analysis, the students provided positive feedback on their experiences interacting with international peers (Excerpt 2) because they were given the opportunity to engage in real conversations with foreign students. The qualitative research data indicate that creating real-life scenarios for practicing speaking and for interaction considerably aids in the development of EFL learners' speaking and listening abilities. The students of the current study reported appreciating the course (Excerpt 2), their teacher (foreign partner; Excerpt 3), and their ability to gain knowledge during the course (Excerpt 4). This positive feedback is consistent with the findings of Jauregi (2012) and others, who discovered that online video interactions between native and nonnative speakers enabled students to understand and communicate with each other more effectively. Several studies have supported the argument that students benefit from online English speaking courses involving learning partners (Hodgson et al., 2015; Altinay, 2017; Saidalvi & Samad, 2019).

> Excerpt 1: "I think this class helped me gain listening skills. Interacting with foreigners helped me improve my speaking skills."

> Excerpt 2: "I think it's interesting to be able to learn English online. I think that learning in groups is also effective. I like to speak with foreign teachers. I did not feel anxious in today's English class because it was easier for me to communicate with others. I found it interesting to I speak in English with everyone. I enjoyed this class very much. I hope I can learn even more in my next English class."

> Excerpt 3: "My teacher is really great. Usually, when I can't answer the teacher's question, I feel uncomfortable. However, my teacher is nice, so I don't feel as nervous. Even if I don't know how to answer the question, the teacher patiently guides me."

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> Excerpt 4: "I learned a lot from my teacher. I feel good because I learned a lot about culture and a lot of information from my teacher, including information about his country and hobbies. I also learned about different customs, and my teacher and I compared our countries' customs. We exchanged experiences."

The online international learning partner program reduced the students' speaking anxiety. Although the program did not reveal a significant decrease in speaking anxiety in the quantitative analysis after the course ended, the students provided positive qualitative feedback, expressing how certain learning situations helped decrease their anxiety or boost their confidence. Those situations comprised practical course content (Excerpt 5) and provided a friendlier learning environment (Excerpt 6). These qualitative research results are similar to those of the study by Tseng et al. (2020) regarding the effectiveness of online tutoring in improving English speaking skills. Students in lively, enjoyable, and relaxed learning environments who were buoyed by learning partners' support, encouragement, and positive feedback gained a sense of achievement and confidence in their learning. The literature indicates that most students' English speaking abilities improve substantially when they engage in online language partner courses, and speaking anxiety considerably decreases (Chuang, 2020; Jauregi et al., 2012).

> Excerpt 5: "Conversation in English is easy for me, so I don't think it makes me anxious. It's good. It's just basic talking."
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> Excerpt 6: "I didn't feel uncomfortable interacting with the foreign teachers today because my teacher was very friendly. However, I felt a little nervous because I couldn't answer my teacher's question. Fortunately, the teacher gave me some advice."

For some students, speaking anxiety persisted throughout the program. Qualitative analysis revealed that an increase in speaking anxiety typically accompanied students being unable to understand the ideas expressed by their foreign partners (Excerpt 7) or being unable to express themselves fluently in English (Excerpt 8), resulting in frustration, fear of making mistakes (Excerpt 9), feelings of unpreparedness (Excerpt 10), and the belief that their English proficiency was low (Excerpt 11). Moreover, when course topics were more complex or involved cross-cultural issues, students were more likely to experience learning anxiety (Excerpt 12). These qualitative findings explain why learning anxiety did not decrease significantly before and after the study and are consistent with the findings of other studies that observed an increase in speaking anxiety with difficulty with comprehending, self-perceived inability to express ideas fluently in English, frustration due to difficulty with communicating, fear of making mistakes, feelings of unpreparedness, or self-perceived low English proficiency (Tseng et al., 2020; Jauregi et al., 2012; Hurd & Xiao, 2010; Chuang, 2020; Timina, 2015; Akbar et al., 2018; Tien, 2018). An additional source of anxiety mentioned by Garcia and Appel (2020) is lack of familiarity with speaking activities or topics, a finding consistent with the content of the interviews and journals in the present study.

> Excerpt 7: "I still didn't understand something, even after the foreign teacher said it twice, which made me feel embarrassed and nervous."
>
> Excerpt 8: "When foreigners say words I don't understand, I get nervous because I don't know how to respond."
>
> Excerpt 9: "I'm very nervous and can't understand things, and I'm afraid of making mistakes."
>
> Excerpt 10: "If I don't prepare notes, I feel nervous because I'm afraid I won't be able to think of new ideas on the fly."
>
> Excerpt 11: "I'm afraid that I'll use incorrect grammar or phrasing and that it will cause them to misunderstand me because I don't speak English every day, so when I speak, I feel really anxious and nervous."
>
> Excerpt 12: "I am anxious about speaking English because I am not comfortable with using it every day. When I don't prepare, I have no idea what I should say. I feel nervous when we talk about serious issues."

This study confirmed that experiences with international online learning partners can improve university students' listening and speaking skills, and the students of this study provided positive feedback regarding the course and guidance they received from their international partners. Crucially, the students clearly expressed what they had learned in a learning diary entry after each class. Although having international speaking partners did not significantly reduce the students' speaking anxiety, qualitative analysis revealed that the students' self-confidence improved with each class, and their anxiety decreased. Additionally, the students' learning anxiety decreased when the course focused on practical topics or general problems or when the international partners established a friendly learning environment. Although learning anxiety persisted, it generally arose naturally, just as it would in real-world conversations with native English speakers. The students' responses in the interviews and personal learning reflections

revealed that learning anxiety increased whenever the students could not express themselves fluently, were afraid of making mistakes, felt unprepared, or found the course topics challenging.

VI. CONCLUSION

This study incorporated international learning partners into a formal oral English communication course, providing real conversations as speaking practice. This interactive international peer learning program was implemented in the post-COVID era and aligns with Taiwan's national initiative to become a bilingual nation by 2030. In the integrated virtual and in-person course, teachers acted as providers of speaking skills and knowledge and subsequently assumed the role of guides and assistants to help the students communicate with their foreign partners. Moreover, the friendly learning environment established by the international partners gradually increased the students' confidence and reduced their anxiety. This one-to-many grouping for the speaking exercises enabled the Taiwanese students to establish cooperative and mutually supportive relationships. Although cultural topics were more difficult for the students to confidently speak about and therefore increased their anxiety, the students' journal entries regarding what they had learned after each class indicated they experienced considerable satisfaction and feelings of achievement. Near the conclusion of the study, before the administration of the oral posttest, the authors asked for volunteers to take the Test of English for International Communication (TOEIC) Speaking test and collected qualitative data from the students before the official scores were released. The results revealed that the students had high confidence in their ability to score well on the official speaking test, but after receiving their official scores, most students discovered that they had overestimated their speaking ability. This result indicates that although the students had considerable confidence in the effectiveness of the online partner program in improving their speaking abilities, the extent to which such courses lead to lasting improvements warrants investigation in future studies.

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