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| **RESEARCH ARTICLE**

Relationship between English Speaking Performance and Foreign Language Anxiety in Online Peer Learning

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| **ABSTRACT**

This study investigated the relationship between English speaking performance and foreign language anxiety before and after an online peer learning program at the college level. A total of 59 students enrolled in a one-semester English Speaking Communication course at a university in central Taiwan participated in the study. The course entailed a 7-week online peer learning program. The participants took a computer-based speaking proficiency test and completed the Foreign Language Classroom Anxiety Scale questionnaire before and after the program. The collected quantitative data were analyzed using descriptive statistics and the Pearson product-moment correlation coefficient. The results revealed that the participants experienced a moderate level of anxiety when taking the computer-based speaking test before and after attending the online peer learning program. A negative correlation was observed between foreign language anxiety and computer-based speaking performance before the online peer learning program. However, after the online peer learning program, a positive correlation was noted between anxiety and speaking performance. On the basis of these findings, this study provides pedagogical suggestions for second-language practitioners.

1. Introduction
1.1 Online learning

The use of technology profoundly influences language learning (Aydin, 2018). The COVID-19 pandemic has resulted in online learning replacing traditional classroom lecturing worldwide (Russell, 2020; Kusuma et al., 2022). When language instructors struggle to apply technology in language teaching, learners may lose the motivation to learn online; they may even lose their self-discipline, thus taking no additional responsibility to self-learn (Russell & Murphy-Judy, 2020; Aydin, 2018). Bárkányi and Melchor-Couto (2017) conducted a study on foreign language anxiety among learners in a massive open online language course. They reported that the learners felt insecure when recording themselves but were not particularly anxious when using audio materials; moreover, the learners felt more comfortable when shielded by their computer during speaking activities, and most of them preferred computer-mediated communication interactions.

Scholars are increasingly focusing on the effect of technology-enhanced instruction on L2 achievement. Martin and Valdivia (2017) indicated that e-learning and e-teaching are aimed at influencing the construction of knowledge with respect to learners' individual experiences or knowledge. Yu et al. (2010, as cited in Martin & Valdivia, 2017) revealed that low achievers could benefit from web-based instructional learning. Kusuma et al. (2022) noted that although the literature demonstrates that e-portfolios can successfully

improve the speaking performance of students pursuing English as a foreign language, it does not provide evidence of the effectiveness of e-portfolios in reducing foreign language anxiety, especially in an online speaking course. They thus investigated the effect of e-portfolios on students' foreign language anxiety and found that students' anxiety decreased significantly when using e-portfolios as a collection of video clips in online speaking courses.

White (2014) hypothesized that language anxiety could be reduced using information communication technology and computer-assisted language learning (CALL) and concluded that a CALL program does reduce anxiety. For example, students tend to feel less anxious when asked to speak English without preparation.

1.2 Anxiety and online peer learning
Learners with high anxiety may prefer taking online courses to seek security because they consider such courses as a chance to avoid engaging in speaking activities or interacting with others (Pitchette, 2009, as cited in Russell, 2020). However, the use of online learning as a tool requires learners to interact with peers or instructors. Learners are then forced to use English to respond online; hence, the anxiety increases because of the lack of sufficient time to prepare or seek help when necessary (Russell & Murphy-Judy, 2020; Alla et al., 2020). Therefore, whether e-learning can help reduce language anxiety is a critical issue worth exploring. The use of technology fosters autonomous learning and reduces students' anxiety toward the use of technology because students consider technology as a tool helping their learning process (Huang, 2002, as cited in Martin & Valdivia, 2017). Distance language learning may not be regarded as a natural means of communication, leading to an increase in students' cognitive effort as well as communication ambiguity. Moreover, distance learning may negatively influence learners' affective domain (Alla et al., 2020). Therefore, distance learning may induce high levels of anxiety (Jegede & Kirkwood, 1994; Ajmal & Ahmad, 2019, as cited in Alla et al., 2020). By contrast, studies on online language anxiety conducted among adult learners have indicated that the use of e-learning and multimedia tools helps reduce anxiety (Huang & Hwang, 2013; Aydin, 2018; Majid et al., 2012, as cited in Alla et al., 2020).

1.3 Speaking and anxiety
Anxiety influences the psychological learning process of both low- and high-proficiency students. Speaking anxiety tends to influence language learning, particularly performance ability. Studies using the Foreign Language Classroom Anxiety Scale (FLCAS) have revealed a moderately negative correlation between foreign language classroom anxiety and achievement among second-language learners. This implies that with increasing anxiety, students tend to avoid learning the target language and focus on learning a second language instead (Hasibuan & Irzawati, 2019). Several studies have demonstrated that language anxiety in speaking courses may negatively affect learning aspects such as language acquisition; however, others have suggested that anxiety can help increase learners' ability to master a foreign language (Julianingsih, 2018) as well as increase learners' motivation to perform well in their language learning process (Pamungkas, 2018). Research on the relationship between foreign language anxiety and speaking performance before and after an online peer learning program is limited. Accordingly, to fill this research gap, the present study investigated the relationship between students' language anxiety and speaking performance in the context of online peer learning. The study was conducted to address the following research questions: 1) What are students' anxiety levels when attempting a computer-based speaking exam before and after attending an online peer learning program? 2) Is there any relationship between students' foreign language speaking ability and speaking exam anxiety before and after attending an online peer learning program?

2. Methodology
2.1 Participants
As senior English majors, a total of 59 Taiwanese students who enrolled in English Communication Skills at a university in central Taiwan participated in this study. Among them, there were more female students (44) than male ones (15). They had learned English for more than 12 years prior to the study. In accordance with the Common European Framework of Reference for Languages (CEFR), their English proficiency levels were situated between A1 and B2: 4 students at A1, 22 at A2, 31 at B1, and 2 at B2. Moreover, the course above was compulsory and lasted 36 hours 18 weeks, i.e., two hours per week.

2.2 Instrument
The 33-item FLCAS, a self-report questionnaire that measures learners' anxiety in the foreign language classroom, was used. The FLCAS items are rated on a 5-point Likert scale with anchors ranging from *strongly disagree* (1) to *strongly agree* (5). According to Horwtiz (1986), the FLCAS was determined to have high internal consistency (Cronbach's alpha = .93) and high test-retest test reliability (.83; p = .001). To prevent misunderstandings, a Chinese version of the FLCAS was used in the present study.

2.3 Procedure
English Communication Skills, a one-semester required course, entailed a 7-week online peer learning program aimed at enhancing students' speaking skills. The participants first completed the FLCAS questionnaire and took a mock TOEIC Bridge Speaking Test

at the beginning of the course. Subsequently, they participated in the 7-week online peer learning program. Upon completing the program, the FLCAS questionnaire and a mock TOEIC Bridge Speaking Test were again conducted in the lab, and the students' audio files were uploaded on the learning platform called ee-class. Two native-English speakers then scored these files on the basis of the criteria for the TOEIC Bridge Speaking Test.

2.4 Data analysis
This study applied SPSS software to analyze the collected data regarding the participants' speaking scores and their FLCAS scores before and after the program. The Pearson product-moment correlation coefficient was used to explain the linearity of variables in the relationship between language anxiety and speaking performance.

3. Results and Discussion
Descriptive statistics were used to describe the FLCAS data. The mean score of all participants was 3.08 (standard deviation [SD] = .53) before the online peer learning program, indicating that the participants had a moderate level of anxiety when dealing with the speaking test. According to Horwitz (2013), a mean FLCAS score of approximately 3 indicates that respondents are slightly anxious, and a mean score of <3 indicates that respondents are not very anxious, and a mean score of ≥4 indicates that respondents are highly anxious (Pamungkas, 2018). To examine the students' speaking proficiency, this study implemented a computer-based mock TOEIC Bridge Speaking Test; on the basis of scores provided by two raters, the participants' mean speaking score was determined to be 84.73 (SD = 3.85), indicating that the participants had a high-intermediate level of speaking proficiency (Table 1).

Table 1 Descriptive Statistics Before Online Peer Learning Program

	Means	Std Deviation	N
Speaking performance	84.7288	3.84990	59
Foreign Language Anxiety	3.0763	.52689	59

To examine the relationship between foreign language anxiety and speaking performance before the online peer learning program, the Pearson product-moment correlation coefficient was used. The results revealed a negative correlation ($r = -.057$) between speaking anxiety and speaking performance. This implies that higher speaking scores were associated with lower levels of foreign language anxiety (and vice versa). However, the correlation coefficient between these two variables was not significant ($p > .05$; Table 2). These findings are similar to those of previous studies assessing the relationship between these two variables (Hasibuan & Irzawati, 2019; Huang, 2018; Liu, 2006; Rofida, 2021; Tien, 2018).

Table 2 Pearson Product–Moment Correlation Between Speaking Performance and Speaking Anxiety Before Online Peer Learning Program

		Speaking Performance	Speaking anxiety
Speaking performance	Pearson Correlation	1	-.057
	Sig. (2-tailed)		.669
	N	59	59
Foreign Language Anxiety	Pearson Correlation	-.057	1
	Sig. (2-tailed)	.669	
	N	59	59

The results revealed that the students' speaking performance was enhanced after the online peer learning program (M = 84.97, SD = 5.61), and the mean score of speaking anxiety was slightly lower than that observed before the program (M = 3.05, SD = .61). This indicates that online peer learning can facilitate students' speaking performance and reduce their language learning anxiety. This finding is consistent with those of previous studies (Chang, 2020; Yeh & Lai, 2019).

Table 3 Descriptive Statistics After Online Peer Learning Program

	Means	Std Deviation	N
Speaking performance	84.9661	5.60777	59
Foreign Language Anxiety	3.0456	.60979	59

The study demonstrated a significant positive correlation between foreign language anxiety and speaking performance after the program (r = .330, *p* < .05). This implies that higher speaking scores were associated with a higher level of foreign language anxiety (and vice versa; Table 4). These findings are not consistent with those of previous studies (Hasibuan & Irzawati, 2019; Huang, 2018; Liu, 2006; Rofida, 2021; Tien, 2018). Howitz et al. (1986) indicated that anxiety could be classified into two categories: facilitating and debilitating anxiety. Facilitating anxiety, representing a certain level of anxiety, can actually help improve learners' language performance. Debilitating anxiety, representing excessive levels of anxiety or no anxiety at all, may diminish language performance. The results of this study suggested that after attending the online peer learning program, some students exhibited higher performance when they experienced facilitating anxiety.

Table 4 Pearson Product–Moment Correlation Between Speaking Performance and Speaking Anxiety After Online Peer Learning Program

		Speaking Performance	Speaking anxiety
Speaking performance	Pearson Correlation	1	.330*
	Sig. (2-tailed)		.011
	N	59	59
Speaking anxiety	Pearson Correlation	.330*	1
	Sig. (2-tailed)	.011	
	N	59	59

*p<.05

4. Conclusion
This study investigated the relationship between language anxiety and English speaking performance before and after an online peer learning program at the college level. The study compared the students' performance and anxiety levels before and after attending the online peer learning program, revealing that the students had moderate levels of language anxiety at both times. After attending the online peer learning program, the students exhibited enhanced speaking performance, and their mean anxiety score was slightly lower than that before the program. In line with existing research (Hasibuan & Irzawati, 2019; Huang, 2018; Liu, 2006; Pamungkas, 2018; Rofida, 2021; Tien, 2018), the present study revealed a negative correlation between foreign language anxiety and speaking performance before the online peer learning. However, the negative coefficient value between these two variables was not significant.

After the online peer learning program, the participants' speaking performance was enhanced, and their anxiety was slightly reduced. Foreign language anxiety and speaking performance showed a significant positive correlation, indicating that facilitating anxiety could be a minor factor positively influencing the students' speaking performance.

Although this study has shown a negative correlation between speaking performance and foreign language anxiety before the online peer learning program but a positive correlation after the online peer learning program, some limitations should be addressed by future research. Firstly, the participants only included college students, and the study scope in the present study only focused on the relationship between language anxiety and speaking performance using an online peer learning program. The authors suggest that future studies explore the relationship between language anxiety and speaking performance in different learning environments, among different kinds of learners, and using different online learning tools. Furthermore, the present study did not examine the effect of online peer learning programs on students' foreign language anxiety as well as speaking performance. In order to comprehensively examine the relationship between anxiety and foreign language speaking performance, qualitative methods such as open-ended questionnaires, interviews, and learning logs or quasi-experimental design of the study should be employed as participant responses can give the researcher an insight into the issue above.

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