

<https://doi.org/10.17323/jle.2024.16241>

The Effects of Asynchronous Cross-cultural Communication on EFL University Students' Writing Performance and Motivation

Wei-Yu Chang ¹, Ming-Chang Wu ², Shu-Wen Lin ^{3,4}

¹ National Kaohsiung Normal University, Taiwan

² National Yunlin University of Science and Technology, Taiwan

³ Sojo University, Japan

⁴ Fu Jen Catholic University, Taiwan

ABSTRACT

Background: Researchers have integrated cross-cultural communication (CCC) with writing to examine students' writing performance, motivation, and perceptions in EFL classrooms. However, the exploration of how authentic CCC with students from different cultural backgrounds benefits lower-proficiency students' English writing competence and motivation remains underexplored.

Purpose: This mixed-methods study, employing pre-test and post-test designs, examined the effects of asynchronous CCC on EFL university lower-proficiency students' writing performance, motivation, and perceptions to determine whether asynchronous CCC facilitated EFL lower-proficiency students' writing competence and motivation and to elucidate its impact on their writing performance.

Method: Twenty-nine freshmen, who were non-English majors, were divided into lower-proficiency (N=15) and higher-proficiency (N=14) groups. Data were collected from the writing tests and Writing Motivation Questionnaires (WMQ) completed in the pre-test and post-test. The questions in the writing tests were identical in both tests, while the WMQ comprised 33 five-point Likert-scale questions and an open-ended question aimed at exploring the students' motivation and perceptions regarding writing in this study.

Results: The results indicate that the features of social interaction and cross-cultural engagement within asynchronous CCC significantly developed lower-proficiency students' writing performance and mitigated their negative writing motivation. Utilising asynchronous CCC, which facilitated feedback exchange and collaborative writing with higher-proficiency peers, notably bolstered lower-proficiency students' writing proficiency. Additionally, the integration of meaningful, intriguing, and authentic asynchronous CCC activities contributed to reducing negative writing motivations among lower-proficiency students. However, delayed responses from online peers and a sense of demotivation while collaborating with lower-proficiency peers may have contributed to the insignificant development observed among higher-proficiency students.

Conclusion: Engaging EFL university lower-proficiency students in asynchronous CCC to exchange cultural and linguistic knowledge could enhance their writing performance and reduce their negative writing motivation. This is because the features inherent in asynchronous CCC render English writing meaningful, intriguing, and authentic.

KEYWORDS

asynchronous cross-cultural communication, writing performance, writing motivation, writing perceptions

Citation: Chang W.-Y., Wu M.-C., & Lin S.-W. (2024). The effects of asynchronous cross-cultural communication on EFL university students' writing performance and motivation. *Journal of Language and Education*, 10(1), 35-48. <https://doi.org/10.17323/jle.2024.16241>

Correspondence:
Ming-Chang Wu,
e-mail: wumc@yuntech.edu.tw

Received: November 01, 2022

Accepted: March 15, 2024

Published: March 30, 2024

INTRODUCTION

Cross-cultural communication (CCC), which refers to the interaction among in-

dividuals from diverse cultures through spoken or written language, as well as body language (Chen & Yang, 2014b), has found extensive application in en-



hancing English as a Foreign Language (EFL) students' writing proficiency (e.g., Alsamadani, 2021; Guerrero Moya et al., 2016; Wu, 2020; Xu, 2017). According to Vygotsky's sociocultural theory (SCT), learning "take[s] place through participation in cultural, linguistic, and historically formed settings" (Lantolf et al., 2015, p.207) in which language learning is a socially interactive process rather than an individual activity (Vygotsky, 1978). CCC facilitates the interactive and authentic exchange of cultures and languages among individuals from different cultural backgrounds (Shadiev et al., 2015), aligning closely with SCT principles. Students engage in negotiating meanings, sharing ideas, resolving misunderstandings, and refining communicative skills (Yanguas, 2010) to enhance their writing abilities within the zone of proximal development (ZPD). ZPD explains that individuals can reach higher levels of proficiency with guidance from more proficient peers or experts (Fani & Ghaemi, 2011; Lee, 2008; Vygotsky, 1978). In other words, CCC facilitates the development of students' writing skills by enabling interactions with more competent individuals within a socially and culturally diverse context.

To examine the effectiveness of CCC on EFL students' writing performance, Chen and Yang (2014a) engaged Taiwanese students in interactions with native English speakers using diverse platforms such as online forums, emails, and blogs. Their findings revealed significant enhancements in the students' English vocabulary, grammatical proficiency, and writing skills. Furthermore, Rafieyan et al. (2015) utilized WhatsApp as a tool to bolster Iranian English learners' writing competence through communicating with native English speakers, yielding improvements in pragmatic writing abilities. Similarly, Özdemir (2017) facilitated Turkish university students' communication with individuals from various countries via Facebook to foster English writing proficiency, leading to positive attitudes towards English writing among students. These studies underscore the impacts of CCC in fostering EFL students' writing proficiency. However, scant attention has been devoted to scrutinizing the English writing performance of lower-proficiency students. Lower-proficiency students often require heightened support and guidance due to their inadequate writing skills, frequently stemming from diminished levels of writing motivation.

Motivation plays a pivotal role in determining one's ability to master writing in a foreign language (Ahmetovic et al., 2023; Dörnyei, 1994). In most cases, EFL students' unsatisfactory writing performance is due to their low levels of writing motivation (Guo & Bai, 2022; Wu et al., 2020). Motivation in language learning refers to students' attitudes and affections that influence their effort and desire to learn foreign languages (Ellis, 1997). Motivation dictates the duration of persistence in writing practice, the level of effort invested, the degree of proficiency attained, and the extent of achievement derived from writing endeavors (Hartnett, 2016). Given the importance of motivation in the field of writing, researchers have examined EFL students' writing

motivation across diverse learning contexts. For example, Challob (2021) applied a flipped approach to investigate 15 Iraqi university students' writing performance, autonomy, and motivation, indicating that feedback from teachers and peers alongside online sources helped develop students' writing motivation. Similarly, Azis and Husnawadi (2020) employed a collaborative digital storytelling (DST) approach to enhance Indonesian university students' writing motivation, affirming that collaborative DST was an intriguing manner to motivate students' writing interests. These studies underscore the potential of technology in increasing EFL students' writing motivation, but authentic communication, like CCC, is less explored in the context of nurturing EFL writing motivation.

Apart from writing motivation, exploring the students' writing perceptions is also crucial because it helps instructors prepare for what students want in their writing classes (Leki & Carson, 1994). To understand students' needs, researchers have undertaken studies to explore EFL students' writing perceptions. For example, Azis and Husnawadi (2020) employed DST to investigate 28 Indonesian university students' English writing perceptions. The findings of this study showed that DST developed students' writing competence by refining their grammatical ability and stimulating their writing ideas. Additionally, students exhibited higher levels of engagement, motivation, and confidence while collaborating with their peers, thereby improving their social skills and interpersonal relationships. In a similar vein, Sun and Asmawi (2023) conducted a study to comprehend Chinese EFL students' perceptions of using WeChat, an instant messaging software, in developing their business English writing ability. The findings of this study revealed that students demonstrated better writing competence through discussing with peers and teachers on WeChat. This improvement was attributed to learning various business writing models, understanding diverse writing approaches, and acquiring a richer vocabulary along with enhanced grammatical knowledge. These studies present how EFL university students perceived the effects of technology on developing their writing performance. However, further research exploring students' perceptions of asynchronous CCC in developing EFL university students' writing performance is needed.

To the best of the researchers' knowledge, only a limited number of studies have examined the effects of CCC on the writing performance, motivation, and perceptions of lower-proficiency EFL university students. Therefore, the primary purpose of this study was to address this research gap. To fulfill this research aim, three research questions (RQ) were proposed:

- (1) How did asynchronous CCC improve EFL university writing performance?
- (2) How did asynchronous CCC develop EFL university students' writing motivation?

- (3) What perceptions did the EFL university students show about the advantages and disadvantages of participating in this study?

METHOD

Research Design

This mixed-methods study was conducted in a compulsory course, Practical English, for all first-year students at a private university in northern Taiwan. The study employed the concurrent embedded strategy of mixed methods, as outlined by Creswell (2009), to collect both quantitative and qualitative data. Quantitative data were gathered from a writing test and the Writing Motivation Questionnaire (WMQ) completed in the pre-test and post-test respectively. Additionally, qualitative insights into participants' perceptions were obtained from the open-ended question in the WMQ administered during the post-test.

Then, Collabpad, a cloud-based notebook allowing multiple users to edit the same documents (asynchronously) was applied in this study. Collabpad is user-friendly, and users only need to click on unique URLs for online communication. Prior to participants engaging in their asynchronous CCC, the instructor demonstrated how to use Collabpad effectively.

In this study, the asynchronous communication mode was adopted due to the participants' limited English writing ability and their lack of experience in CCC. The application of asynchronous communication might be a better choice for the participants because it affords them ample time to organise their writing samples, peruse other's written work, think about how to provide feedback to their partners, and respond to their partners' feedback (Alsamadani, 2021; Angelova & Zhao, 2016; Shadiev et al., 2015; Vonderwell, 2003). Consequently, participants might feel more comfortable and be more willing to participate in this study.

Participants

In this study, the convenience sampling technique was applied to recruit participants from the Department of Nursing at a university in northern Taiwan. All participants received identical instruction provided by the same instructor within a singular class setting. However, for the purpose of data analysis, they were divided into three groups based on their writing scores obtained during the pre-test. The top and bottom 33% of participants were selected for further analysis and labeled as the higher-proficiency group (HP) (N=14) and the lower-proficiency group (LP) (N=15). Although the participants have been learning English for over ten years, their English proficiency was still very limited, as evidenced by their English test results in the college entrance examination. None of them had prior experience studying abroad in English-speaking countries or engaging in asynchronous

CCC with either native or non-native English speakers. Their participation in this study was based on their willingness, and they were fully informed of their right to withdraw from participation at any time without incurring any adverse repercussions. Their privacy was also secured before the commencement of the research implementation.

Procedures

Regarding the research procedures, the researchers explained the purposes and procedures of this study to the participants and had students sign the consent form in Week 1. In Week 2, participants completed the writing test and the WMQ, constituting the pre-test phase. Then, participants were instructed to assemble into groups of three to four individuals to conduct asynchronous CCC with their Japanese counterparts. This group format was considered more helpful for effective communication compared to pairs or individual interactions (Fernández Dobao, 2012). Over a span of four weeks, participants engaged in asynchronous CCC with Japanese university students to complete a three-paragraph narrative essay. Consequently, participants spent eight weeks conducting asynchronous CCC for two narrative essays. They finished the first essay, My Life Schedule, between Week 3 and Week 6, and the second essay, My Travel Experience, from Week 7 to Week 10. In Week 11, participants underwent a re-administration of the writing test and the WMQ utilised in the pre-test in the post-test. Table 1 below outlines the weekly arrangement in this study.

Table 1
Weekly Arrangement in This Study

Week(s)	Tasks
1	Introducing this study
2	Conducting the pre-test
3-6	Conducting asynchronous CCC for the first essay
7-10	Conducting asynchronous CCC for the second essay
11	Conducting the post-test

The asynchronous CCC writing process for the two essays was structured into four stages over four separate weeks. In stage one, both Taiwanese and Japanese students wrote an introductory paragraph on Collabpad to introduce their cultures pertinent to the writing topic. Subsequently, instructors on both sides provided a peer review form and guided students on how to evaluate each other's writing samples, aligning with the rubric adopted from the ESL Composition Profile (ESLCP) developed by Hughey et al. (1983). Following this, both Taiwanese and Japanese students provided feedback on each other's introductory paragraphs and engaged in cultural inquiries related to the writing topic. In stage two, students revised their introductory paragraph based on the feedback received from their Japanese counterparts. Also, they wrote a body paragraph expressing their perspec-

tives on the writing topic. Again, Taiwanese and Japanese students exchanged feedback and responded to each other's questions posed in week one. In stage three, students incorporated feedback from their Japanese peers to revise their body paragraphs and proceeded to compose a conclusion paragraph to finish their writing samples. Again, students on both sides offered feedback on the conclusion paragraphs and summarised the similarities and differences between the two cultures. In stage four, students refined the conclusion paragraph and reviewed each other's complete essays on Collabpad. Figure 1 below summarises the instructional procedures implemented in this study.

Research Instruments and Data Collection

To examine whether there was any significant difference in the participants' writing performance to answer RQ 1, two writing tests were employed in the pre-test and post-test. Two experienced EFL teachers, each possessing a Master's degree in Teaching English to Speakers of Other Languages (TESOL), were invited to assess the participants' writing samples utilising the ESLCP (Hughey et al., 1983). The ESLCP offers a comprehensive set of criteria to evaluate EFL students' writing performance, including content (30%), organisation (20%), vocabulary (20%), language use (25%), and mechanics (5%), with a maximum attainable score of 100. To confirm the reliability of the assessment process, the Pearson correlation coefficient was computed to ascertain the inter-rater reliabilities, with coefficients of .72 observed in the pre-test and .74 in the post-test (Cohen et al., 2011).

Subsequently, to gauge differences in the participants' levels of writing motivation between the pre-test and post-test to address RQ 2, thirty-three five-point Likert-scale ques-

tions in the WMQ were utilised. Adapted from Yeşilyurt's (2008) Writing Motivation Scale, the WMQ underwent modifications to accommodate the research context of this study, replacing the term Wiki with Collabpad to reflect the platform employed. The response scale in the WMQ, ranging from 1, representing strongly disagree, to 5, representing strongly agree, consisted of three core dimensions of amotivation, intrinsic motivation, and extrinsic motivation. Considering the participants' limited English ability, the WMQ was translated into traditional Chinese, the participants' native language, by the first author. Subsequently, the other two authors confirmed the translation. To ensure the precision of the translation, the finalised translated WMQ was approved by an experienced English instructor who is proficient in both Chinese and English and has been teaching English at a Taiwanese university for more than a decade.

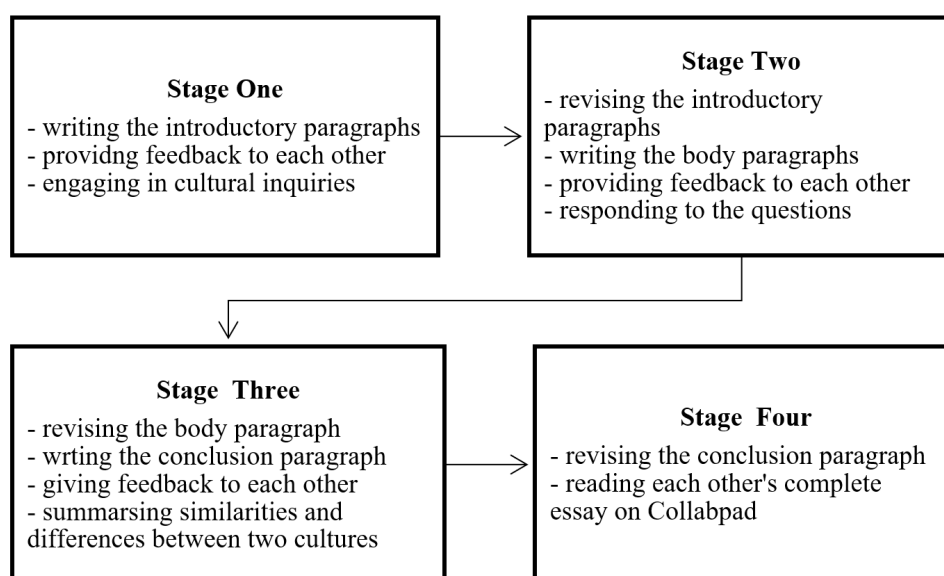
Finally, the concluding item in the WMQ was an open-ended question to solicit the participants' reflections and perceptions about the advantages and disadvantages of their engagement in this study to answer RQ 3.

Data Analysis

The data in this study was derived from the writing tests and the WMQ collected in the pre-test and post-test. The data obtained from the writing tests underwent analysis utilising the Wilcoxon signed-rank test to examine whether there were any significant differences in the participants' writing performance within groups between the pre-test and post-test. Furthermore, the Mann-Whitney *U*-test was then administered to examine statistical differences between groups in the pre-test and post-test respectively. In addition, S2 from the LP and S26 from the HP were selected as repre-

Figure 1

The Instructional Procedures in This Study



sentative cases to compare their changes in English writing because their scores were the closest to the mean scores in their groups.

To compute the quantitative data collected in the WMQ, the Wilcoxon signed-rank test was applied to examine statistical differences in each group between the pre-test and post-test. The responses collected in the open-ended question were analysed by utilising the thematic analysis, enabling the researchers to identify, analyse, and report patterns/themes in the data by identifying the categories (Braun & Clarke, 2006; Johnson & Christensen, 2014). Following the analytical procedures of familiarising, coding, generating themes, reviewing themes, defining themes, and writing up, two major themes emerged from the data, and two or three codes supported each theme. The quantitative and qualitative results are reported subsequently.

RESULTS

English Writing Performance

The results of the descriptive statistics, as presented in Table 2, reveal that the differences in the post-test in students' English writing performance in content, organisation, vo-

cabulary, language use, mechanics, and total score were smaller than those in the pre-test between the LP and HP. In addition, the mean scores for each component in the post-test exhibited an upward trend in the LP in contrast to the pre-test scores. Conversely, there were slight declines evident in the areas of content, organisation, and total score in the HP in the post-test.

A Wilcoxon signed-rank test was applied to compare the participants' English writing scores gained in both the pre-test and post-test. The results, as presented in Table 3, demonstrate significant differences across all components (content: $Z = -2.77$, organisation: $Z = -2.84$, vocabulary: $Z = -3.42$, language use: $Z = -3.31$, mechanics: $Z = -2.64$, and total score: $Z = -3.35$) within the LP. However, no significant difference was observed in the HP. These results indicate that students in the LP exhibited significant improvement in English writing proficiency after participating in this study, whereas no discernible enhancement was noted among students in the HP.

In addition, a Mann-Whitney U -test was applied to examine whether significant differences existed among the writing components between the LP and HP. The results, as presented in Table 4, demonstrate significant differences in all dimensions, (content: $Z = -4.51$, organisation: $Z = -4.22$,

Table 2

Descriptive Statistics on English Writing Performance

	Pre-test				Post-test			
	LP		HP		LP		HP	
	M	SD	M	SD	M	SD	M	SD
Content	18.40	1.82	22.86	2.11	20.80	2.09	21.54	2.13
Organisation	13.67	1.18	16.00	1.11	15.13	1.23	15.68	1.28
Vocabulary	12.63	1.37	15.36	1.41	14.97	1.39	15.54	1.35
Language use	14.13	1.76	17.43	2.20	16.47	1.48	18.14	1.92
Mechanics	3.43	0.42	4.00	0.55	3.80	0.41	4.00	0.59
Total score	62.27	5.58	75.64	6.41	71.17	6.01	74.89	6.61

Note. LP: lower-proficiency group; HP: higher-proficiency group

Table 3

Wilcoxon Signed-Rank Test on English Writing Performance (Within Groups)

	Content	Organisation	Vocabulary	Language use	Mechanics	Total score
LP						
Z	-2.77	-2.84	-3.42	-3.31	-2.64	-3.35
Asymp. Sig. (2-tailed)	.006*	.004*	.001*	.001*	.008*	.001*
HP						
Z	-1.65	-.71	-.81	-1.43	.00	-.16
Asymp. Sig. (2-tailed)	.098	.478	.416	.154	1.000	.875

Note. LP: lower-proficiency group; HP: higher-proficiency group * $p < .01$

vocabulary: $Z = -4.16$, language use: $Z = -3.90$, mechanics: $Z = -2.68$, and total score: $Z = -4.59$) in the pre-test, indicating that students in the HP had better English writing proficiency than those in the LP. However, no significant differences were observed across all dimensions in the post-test, indicating that students from both groups exhibited comparable English writing proficiency after having social and cross-cultural communication in this study.

Two representative cases, selected respectively from the LP and HP, are presented in Tables 5 and 6 to explain students' evolution in English writing between the pre-test and post-test. The annotations provided by the two raters, denoted by strikethroughs and words in brackets, offer insights into areas of improvement and suggestions for refinement. In Table 5, S2 from the LP exhibited notable improvement in the post-test. The content of her writing was enriched by introducing the disadvantages and advantages, which were logically presented in separate paragraphs. The use of vocabulary contributed to clarity of expression. Grammatical mistakes were the major problems in the post-test, but the sentence structures demonstrated increased complexity and diversity compared to those observed in the pre-test. For example, she erroneously used the past tense of 'stopped' instead of 'stops' and omitted the plural marker 's' for countable nouns such as 'oyster' and 'squid.' In terms of mechanics, there was no spelling, punctuation, or capitalisation mistake in the post-test. In response to the open-ended question, S2 commented:

The interaction and discussion with the Japanese partner gave us more writing ideas. Our Japanese partner asked a lot of questions about Taiwan, so we had to look for more information to respond to his questions. By searching for online information, we had a deeper understanding of Taiwan and had better writing ability because we needed to translate the information into English or search for English information to share with our Japanese partner.

According to S2, asynchronous CCC effectively improved EFL university students' English writing performance since students had to engage in discussions with their counterparts, translate relevant information into English, and search for related English information. Through these activities, stu-

dents not only developed their writing skills by exchanging feedback but also gained a meaningful and interactive understanding of two cultures in the collaborative writing process.

In Table 6, S26 from the HP completed her essays in similar ways in both tests. For example, her supporting ideas were shopping, meals, and snacks in the pre-test and a historic site and Christmas event in the post-test. Although she provided various ideas in her writing samples, she failed to connect these supporting ideas logically. Although the vocabulary delivered her writing ideas effectively, she displayed several spelling errors in both tests (e.g., 'experient' for experience and 'attract' for attract). Additionally, there were some grammatical inaccuracies in the pre-test (e.g., 'you can shopping' instead of you can go shopping) and in the post-test (e.g., 'I was living here since I was little.' instead of I have been living here since I was little.). Finally, she omitted or misused punctuation in both tests. In the open-ended question, she commented:

Sometimes, I did not know how to cooperate with my peers because it seemed that their English writing ability was not good. I needed to guide them while we were working together. However, sometimes, I was not sure whether my guidance was correct or not. I prefer to work alone, which might make me feel more comfortable.

Based on S26's writing samples from both tests and her reflection on the open-ended question, collaborating with lower-proficiency peers to enhance higher-proficiency students' writing ability seemed limited. Higher-proficiency students might find it difficult to obtain support from lower-proficiency peers when seeking guidance. In addition, collaborating with lower-proficiency peers might impose an additional burden on higher-proficiency students, potentially decreasing their willingness to engage in collaborative writing activities.

English Writing Motivation

A Wilcoxon signed-rank test was conducted to examine if there were any significant differences in the participants' English writing motivation between the pre-test and post-

Table 4

Mann-Whitney U-Test on English Writing Performance (Between Groups)

	Content	Organisation	Vocabulary	Language use	Mechanics	Total score
Pre-test						
Z	-4.51	-4.22	-4.16	-3.90	-2.68	-4.59
Asymp. Sig. (2-tailed)	.000*	.000*	.000*	.000*	.007*	.000*
Post-test						
Z	-.73	-1.08	-1.28	-1.31	-1.41	-1.60
Asymp. Sig. (2-tailed)	.47	.28	.20	.12	.16	.11

Note. * $p < .01$

Table 5

S2's Writing Samples (LP Group)

Pre-test	Post-test	Analyses
My hometown, Keelung, is famous of (for its) seafood and night market. Because of the ocean, various of sea creatures will come to Keelung harbor.	My hometown "Keelung" is a place, where rains a whole year. Everyday (Every day) when I get up, dark clouds cover the entire sky. It rains like waterfall and never stopped (stops). Nevertheless, Keelung has its unique advantages. Because of the location, Keelung is surrounding (surrounded) by (the) sea. Marine resources are plentiful. The most famous is seafood (It is especially famous for its seafood), like oyster(s), clams, squid(s) and so on. No matter how you cook (them), all these seafood always tasted (tastes) great. (A concluding sentence is needed.)	<p>Content</p> <p>The topic was well-developed in the post-test by describing its disadvantages (e.g., weather) in the first paragraph, followed by a transitional sentence segueing into the discussion of its advantages (e.g., food) in the second paragraph. Compared with the pre-test, a more comprehensive exploration of the topic was presented in the post-test.</p> <p>Organisation</p> <p>The writing sample in the post-test exhibited commendable organisation with logical sequencing, presenting a discussion of its advantages and disadvantages in separate paragraphs. However, the ideas in the pre-test lacked logical coherence and connectivity.</p> <p>Vocabulary</p> <p>The words employed in the post-test demonstrated a more comprehensive range, increasing the readability and comprehensibility of the writing samples. Nevertheless, the student seemed to have limited vocabulary to develop her writing sample in the pre-test.</p> <p>Language use</p> <p>Although there were some grammatical errors, the sentence structures in the post-test exhibited great complexity and variability compared to those observed in the pre-test.</p> <p>Mechanics</p> <p>No mistake in spelling, punctuation, or capitalisation was observed in the post-test.</p>

test in the LP and HP. As presented in Table 7, the findings reveal that only the dimension of amotivation in the LP had a statistically significant difference ($Z = -2.78$), indicating a reduced level of negative motivation toward writing after participating in this study. Nevertheless, no significant difference was detected in the HP.

English Writing Perceptions

Upon analysing the students' responses to the open-ended question in the WMQ, both advantages and disadvantages were observed. The advantages include making English writing meaningful, enhancing writing skills through exchanging feedback, and promoting collaborative writing. Contrarily, the disadvantages entail delayed responses from online peers and a sense of demotivation to collaborate with lower-proficiency peers.

Regarding the benefits, more than 50% of students expressed that asynchronous CCC rendered English writing meaningful because it facilitated their understanding of

cultural differences, advantages, and disadvantages via authentic communication. For example, students stated:

I learned some Japanese culture from my Japanese partner ... I also found that there are many differences between Japan and Taiwan. Communicating with my Japanese partner made English writing meaningful and interesting. (S12)

I learned cultural differences between Japan and Taiwan. I also thought about the advantages and disadvantages of these two countries. The interaction with my Japanese partner created many of my writing ideas. It was an interesting way to learn writing. (S13)

Interacting with Japanese students was an interesting way to improve our writing ability because it broadened our horizons by gaining different thoughts and perspectives. This project made English writing meaningful. (S29)

Having authentic CCC encouraged students to compare cultural differences, contemplate the advantages and disadvantages of different cultures, and broaden their horizons, from which students found it meaningful to practise English writing.

Table 6*S26's Writing Samples (HP Group)*

Pre-test	Post-test	Analyses
I was born in New Taipei City, with which is a convenient city with MRT, train and bus system(s). In New Taipei city(.) you can (go) shopping in the department store(s), hav- ing (have) expensive meal(s) in the restau- rent (restaurants), also you can and enjoy the local food or snakes in the market(s). In my hometown, you can have many different living experient (life experiences), and feel the (meet) warm and kind in the people who living here.	Banqiao is my hometown, (and) I was (have been) living here since I was little. (It) is the most convenient place in whole New Taipei City, included (including the) train, MRT, High-speed train and bus (systems). In addition, Banqiao has historic site(s) like Lin Family Mansion and Garden(.) there (There) are so many beautiful buildings, and (with) very long history. The most special is that we held (hold) Christmasland every single year, and it always attracted (attracts) more than thousands (of) people to visited .(.) I am proud of my hometown.	Content The contents of the two tests exhibited a notable degree of similarity, primarily focusing on topics such as food, scenic spots, and transportation.
		Organisation The organisations in both tests were fairly good and similar by describing the topic from general ideas to specific details.
		Vocabulary The choices of vocabulary were mostly appropriate in both tests, although some minor problems were noted (e.g. living experient). However, the meanings in both tests were clear.
		Language use There were some grammatical mistakes on tenses, singular/plural forms, or articles in both tests.
		Mechanics Spelling and punctuation mistakes were observed in both tests.

Table 7*Results of Wilcoxon Signed-Rank Test on English Writing Motivation (Within Groups)*

	Amotivation	Extrinsic motivation	Intrinsic motivation
LP			
Z	-2.78	-1.10	-.41
Asymp. Sig. (2-tailed)	.005*	.27	.68
HP			
Z	-.77	-.29	-.03
Asymp. Sig. (2-tailed)	.44	.78	.98

Note. LP: lower-proficiency group; HP: higher-proficiency group *p < .05

Secondly, approximately 36% of students reflected that exchanging feedback was beneficial to their writing development, as it made them observe and learn writing skills from their peers. For example, students stated:

My Japanese partner figured out my writing problems. He was good at grammar, and he guided me a lot on tenses after I asked him questions about tenses. (S4)

Exchanging feedback with my Japanese partner improved my English writing ability. My partner shared what I did not know with me, and finding out her mistakes also improved my writing skills. (S10)

I never gave feedback to my peers before, but I found it very useful to improve my English writing ability. I had to

understand what my Japanese partner wrote before I gave feedback. (S23)

Exchanging feedback enhanced students' English writing skills since they learned to ask for help, share knowledge with each other, and cultivate critical thinking ability. These skills contributed to the development of students' writing abilities.

Finally, nearly a third of participants indicated that collaborative writing improved their English writing proficiency. Students found that discussing and collaborating with peers was easier than writing individually. For example, students stated:

There were three people in our group, so it was not difficult for us to complete our writing homework. We discussed our writing assignments and solved writing problems together. My teammates were very helpful because their English ability was better than mine. (S5)

My English writing ability was not good, so having teammates was very important to me. They figured out my grammatical mistakes, corrected my mistakes, and stimulated my writing ideas. I felt more confident after having their guidance. Sometimes, I also found similar mistakes that I had in my Japanese partner's writing samples, so I was able to correct his mistakes. I have gained a sense of achievement in English writing from doing this project. (S11)

We always finished our essays together. We spent a lot of time generating ideas, checking grammar, looking up vocabulary, and cross-checking essays. If I worked alone, it would be very difficult and I might give up learning writing. Having teammates also made me more responsible because I did not want to be a black sheep in my team. (S15)

Collaborative writing could effectively develop students' English writing ability, particularly benefiting lower-proficiency students who had more opportunities to learn from more proficient peers. By doing so, students found English writing easier, had more confidence in writing and developed their sense of responsibility.

However, this study also identified two disadvantages that might impede the effectiveness of students' learning. One is the delayed responses from online peers, and the other is a sense of demotivation to collaborate with lower-proficiency peers. First, approximately 20% of participants reported that they frequently waited for feedback from their Japanese peers. For example, students stated:

Our Japanese partner seemed not to check Collabpad regularly. We found it very difficult to have his prompt feedback on our writing samples. We did not have his personal contact information, so we could not push him to give us immediate feedback. (S6)

Asynchronous communication was not really efficient because we spent a lot of time waiting for our Japanese partner's responses and feedback. Our class time was different from theirs, so we usually waited for his feedback for a couple of days. (S19)

The CCC was in an asynchronous mode, so it was impossible for us to exchange immediate feedback. After communicating with our Japanese partner, we came to realise that we waited for each other for days. It wasted a lot of time. (S22)

Owing to the affordance of asynchronous mode, students were unable to promptly receive feedback from their online peers, thereby making it difficult to engage in immediate discussion regarding their writing samples.

Furthermore, certain higher-proficiency students argued that their peers' limited English writing ability hindered their writing development. Therefore, more competent students felt demotivated to collaborate with lower-proficiency peers. For example, students stated:

Honestly speaking, I felt like I was doing an individual project. My teammate's English writing ability was quite

bad, so I had to finish most parts on my own. I think their contribution was little. (S17)

My English ability was the best in our group, so my teammates relied on me to complete the writing assignments. ... I did not like doing this project with them because I thought they were just lazy. (S25)

Communicating with our Japanese partner in English was not easy for me, but it was more difficult for my teammates. I was the key person to communicate with our Japanese partner and finish our essays. Although my teammates tried to do something, their contribution was very limited. It might be easier for me to do it alone. (S28)

Collaborating with lower-proficiency peers might diminish higher-proficiency students' writing motivation because it would impose an additional burden on them.

DISCUSSION

The purpose of this study was to examine the effects of asynchronous CCC on EFL university lower-proficiency students' writing performance, motivation, and perceptions. The discussions are presented as follows.

English Writing Performance

The results revealed a significant improvement in the participants' writing performance, while no statistically significant difference was observed between the LP and HP in the post-test. These findings align with Rokhmah's (2020) research, which showcased that CCC enhanced EFL students' linguistic abilities, motivated their interest in writing, and encouraged peer-to-peer commentary.

In the present study, students in the LP had opportunities to seek assistance from their HP counterparts and to explore pertinent online resources for engaging in asynchronous CCC with their Japanese peers. These interactions contributed to enhancing their linguistic competence and overall writing performance. Furthermore, asynchronous CCC made English writing more meaningful, thereby increasing students' engagement and interest in the subject matter. The exchange of feedback among peers, particularly within the ZPD, greatly contributed to the advancement of lower-proficiency students' writing performance, as they could learn from more competent peers.

The results of this study also revealed that students predominantly concentrated on local-level aspects during the feedback process, thereby improving their abilities in grammar and mechanics. This finding resonates with the outcomes of research conducted by Shang (2019) and Tseng and Yeh (2019). Notably, guidance on the local dimension is especially crucial for students in the LP who possess limited grammatical knowledge (Shang, 2017; Yang, 2018). The collaborative writing process between LP and HP in the CCC contexts could potentially simplify English writing for lower-proficiency students since they could not only gain

writing knowledge from their HP peers, but they could also apply the writing knowledge in an authentic context. This socially and cross-culturally interactive learning process developed LP students' self-confidence and sense of responsibility in writing.

Grounded in Vygotsky's SCT (Lantolf et al., 2015; Vygotsky, 1978), collaborative writing furnished students with social support (Laal & Ghodsi, 2012), enabling them to better understand the process of clarifying, correcting, and elucidating within a social and cross-cultural setting (Lin et al., 2021; Moslehi & Kafipour, 2023). Consequently, this study concludes that asynchronous collaborative writing within the asynchronous CCC context could significantly develop students' writing performance in the LP by augmenting the breadth of content ideas, bolstering comprehension of writing organisation, expanding vocabulary, and enhancing grammatical and mechanical competencies. The finding also echoes Shen and Bai's (2024) argument regarding the effectiveness of collaborative learning environments in diminishing EFL students' cognitive load and developing their learning performance.

English Writing Motivation

The results demonstrated that only students' amotivation decreased in the LP. Namely, students in the LP exhibited a diminished level of negative motivation toward English writing. Asynchronous CCC that allows students to exchange cultural knowledge with people from other countries to compare two cultures (Hsu & Beasley, 2019; Wang, 2011) makes English writing meaningful because authentic interaction within a social and cross-cultural context could emotionally enrich students' learning metacognition, cognition, affection, and behaviours (Shadiev et al., 2021; Tran & Ngo, 2024). In this study, students found it intriguing to practise English writing in an asynchronous CCC context because they not only learned about other's cultures and deepened their understanding of their own culture but also learned to compare the similarities and differences between the two cultures through authentic communication. According to Vygotsky's SCT, learning "take[s] place through participation in cultural, linguistic, and historically formed settings" (Lantolf et al., 2015, p.207) in which language learning is a socially interactive process (Vygotsky, 1978). In this study, students shared cultures with their Japanese peers asynchronously, thereby making English writing authentic, meaningful, interactive, and intriguing, consequently reducing LP students' negative motivation in writing. However, the insignificant difference in writing motivation in the HP might be attributed to their reluctance to collaborate with lower-proficiency peers, which is discussed subsequently.

English Writing Perceptions

Researchers (e.g., Özdemir, 2017; Rafieyan et al., 2015; Chen & Yang, 2014a) have indicated positive effects of asynchro-

nous CCC on students' writing development, but the advantages and disadvantages of asynchronous CCC on EFL university students' writing development are underexplored. The findings of this study indicate that the advantages include making English writing meaningful, enhancing writing skills through exchanging feedback, and promoting collaborative writing. Contrarily, the disadvantages entail delayed responses from online peers and a sense of demotivation to collaborate with lower-proficiency peers.

Regarding the advantages, first, students found that asynchronous CCC made English writing meaningful by exchanging their cultures with their Japanese peers, comparing similarities and differences between the two cultures, and broadening their horizons. This process not only developed their understanding of different cultures but also stimulated their writing ideas and enriched their writing contents. This finding echoes Guskova and Golubovskaya (2023) and Kavanagh's (2019) claims that CCC not only improved university student's understanding of both native and target cultures but also developed their English writing competence.

Second, exchanging feedback was conducive to EFL students' writing development because it bolstered students' autonomy in seeking assistance from more competent peers, facilitated knowledge sharing among peers, and developed their critical thinking ability. This finding corroborates the effectiveness of peer feedback in developing EFL university students' writing performance (e.g., Challob, 2021; Shang, 2019; Wigglesworth & Storch, 2012; Yang, 2018; Yu et al., 2020).

Finally, collaborative writing contributed to the improvement of lower-proficiency students' writing performance since it decreased writing difficulties and fostered students' self-confidence in the writing process, thereby increasing students' writing motivation. This finding is aligned with those found in Chang's (2020) and Shang's (2019) studies, suggesting that collaborative writing was beneficial to lower-proficiency students' writing performance.

However, the disadvantages of delayed responses from online peers and a sense of demotivation to collaborate with lower-proficiency peers were found in this study. First, owing to the asynchronous nature of communication, students could not get immediate feedback from their Japanese peers. They argued that they had to keep tracking on Collabpad to see if their partners responded to their writing samples, which they perceived as a time-consuming process. Therefore, some students did not enjoy doing asynchronous CCC, which was likely to decrease their interest in

writing. This finding is also similar to Chang's (2020) study, suggesting that having online writing partners would diminish students' writing motivation because they could not get timely responses from others.

In addition, higher-proficiency students argued that collaborating with lower-proficiency peers imposed an additional burden since the lower-proficiency peers relied on them to complete their writing tasks. This situation made them feel as if they were doing an individual assignment, possibly reducing HP students' writing motivation. According to Hyland and Hyland (2006) and Shang (2019), higher-proficiency students exhibited lower levels of satisfaction when collaborating with lower-proficiency students, who often encountered difficulties in contributing to their collaborating writing process.

CONCLUSION

The major findings in this study indicate that asynchronous CCC could enhance EFL university lower-proficiency students' writing competence and alleviate their negative writing motivation. This is attributed to the perception of asynchronous CCC as a meaningful, intriguing, and authentic writing process in which lower-proficiency students could get additional assistance from their counterparts. All in all, engaging EFL university lower-proficiency students in asynchronous CCC could positively develop their writing competence and motivation.

For pedagogical implications, first, asynchronous CCC is a practical and potential approach to develop EFL university students' writing performance, which makes writing authentic, interactive, and interesting in a social and cross-cultural context. Second, collaborative writing develops students' writing ability within the ZPD in which lower-proficiency students have more opportunities to practise writing with higher-proficiency peers. Finally, the findings in this study help writing instructors prepare courses by leveraging advantages of asynchronous CCC and mitigating its disadvantages to improve teaching and learning quality.

Although this study provides encouraging findings for improving EFL lower-proficiency students' writing performance, there were still limitations. First, owing to the application of the convenience sampling technique, only a small number of participants took part in this study. Applying a larger sample size for more representative research results is recommended. Second, a control group can be included in future research to investigate whether with and without asynchronous CCC yields different results on students' writ-

ing performance and writing motivation. Third, results from a longitudinal study may differ from those found in this study, thus conducting further research with an extended intervention period is suggested. Finally, the interview technique can be applied in future studies to explore pedagogical approaches for higher-proficiency students.

The results of this study are practical to English writing teachers whose students are at a lower level of English writing proficiency. Most related studies have focused on examining English majors or students with higher levels of English proficiency. However, students with a lower level of English writing ability and writing motivation should be given more attention and instruction since their lower levels of writing proficiency and writing motivation might intricately intertwine to hinder their writing performance.

ACKNOWLEDGMENTS

We are indebted to the anonymous reviewers' comments and suggestions as well as the financial support granted by the Ministry of Science and Technology in Taiwan under the grant numbers 109-2511-H-254-001 and 110-2511-H-224-002-MY3.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHORS' CONTRIBUTION

Wei-Yu Chang: conceptualisation, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, writing – original draft, writing – review & editing.

Ming-Chang Wu: funding acquisition, software, validation, writing – review & editing.

Shu-Wen Lin: project administration, validation, visualisation

REFERENCES

- Ahmetovic, E., Becirovic, S., Dubravac, V., & Brdarevic-Celjo, A. (2023). The interplay between corrective feedback, motivation and EFL achievement in middle and high school education. *Journal of Language and Education*, 9(1), 26-40. <https://doi.org/10.17323/jle.2023.12663>
- Alsamadani, H. A. (2021). Developing intercultural awareness and EFL writing skills of college-level students through email interaction. *The Journal of Language Teaching and Learning*, 11(1), 71-85.

- Angelova, M., & Zhao, Y. (2016). Using an online collaborative project between American and Chinese students to develop ESL teaching skills, cross-cultural awareness and language skills. *Computer Assisted Language Learning*, 29(1), 167-185. <https://doi.org/10.1080/09588221.2014.907320>
- Azis, Y. A., & Husnawadi. (2020). Collaborative digital storytelling-based task for EFL writing instruction: Outcomes and perceptions. *The Journal of Asia TEFL*, 17(2), 562-579. <https://dx.doi.org/10.18823/asiatefl.2020.17.2.16.562>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Challob, A. I. (2021). The effect of flipped learning on EFL students' writing performance, autonomy, and motivation. *Education and Information Technologies*, 26(4), 3743-3769. <https://doi.org/10.1007/s10639-021-10434-1>
- Chang, W. Y. (2020). Exploring solutions to decrease Taiwanese university lower achievers' English writing difficulties via blogging. *Computer Assisted Language Learning Electronic Journal (CALL-EJ)*, 21(2), 114-131.
- Chen, J. J., & Yang, S. C. (2014a). Fostering foreign language learning through technology-enhanced intercultural projects. *Language Learning & Technology*, 18(1), 57-75. <https://dx.doi.org/10.1255/44354>
- Chen, J. J., & Yang, S. C. (2014b). Promoting cross-cultural understanding and language use in research-oriented Internet-mediated intercultural exchange. *Computer Assisted Language Learning*, 29(2), 262-288. <https://doi.org/10.1080/09588221.2014.937441>
- Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). Routledge.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Sage.
- Dörnyei, Z. (1994). Motivation and motivating in the foreign language classroom. *The Modern Language Journal*, 78(3), 273-284. <https://doi.org/10.2307/330107>
- Ellis, R. (1997). *The study of second language acquisition*. Oxford University Press.
- Fani, T., & Ghaemi, F. (2011). Implications of Vygotsky's zone of proximal development (ZPD) in teacher education: ZPTD and self-scaffolding. *Procedia - Social and Behavioral Sciences*, 29, 1549-1554. <https://doi.org/10.1016/j.sbspro.2011.11.396>
- Fernández Dobao, A. (2012). Collaborative writing tasks in the L2 classroom: Comparing group, pair, and individual work. *Journal of Second Language Writing*, 21(1), 40-58. <https://doi.org/10.1016/j.jslw.2011.12.002>
- Guerrero Moya, M. E., Muñoz Ortiz, L., & Niño Díaz, A. M. (2016). Evidence of intercultural communication competence in tenth grader's narrative texts. *GIST Education and Learning Research Journal*, 13, 111-130. <https://doi.org/10.26817/16925777.315>
- Guo, W., & Bai, B. (2022). Effects of self-regulated learning strategy use on motivation in EFL writing: A comparison between high and low achievers in Hong Kong primary schools. *Applied Linguistics Review*, 1-23. <https://doi.org/10.1515/applirev-2018-0085>
- Guskova, N., & Golubovskaya, E. (2023). Enhancement of academic performance through developing cross-cultural communicative competence: A case study of students majoring in Economics. *Journal of Language and Education*, 9(1), 76-88. <https://doi.org/10.17323/jle.2023.13989>
- Hartnett, M. (2016). *The importance of motivation in online learning*. Springer Singapore.
- Hsu, S.-Y. S., & Beasley, R. E. (2019). The effects of international email and Skype interactions on computer-mediated communication perceptions and attitudes and intercultural competence in Taiwanese students. *Australasian Journal of Educational Technology*, 35(1). <https://doi.org/10.14742/ajet.4209>
- Hughey, J. B., Wormuth, D. R., Hartfiel, V. F., & Jacobs, H. L. (1983). *Teaching ESL composition: Principles and techniques*. Newbury House Publishers.
- Hyland, F., & Hyland, K. (2006). Feedback on second language students' writing. *Language Teaching*, 39(2), 83-101. <https://doi.org/10.1017/S0261444806003399>
- Johnson, B., & Christensen, L. (2014). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). Thousand Oaks, CA: Sage.
- Kavanagh, B. (2019). The teaching of intercultural communication with academic writing through a CLIL based approach – A case study of a Tohoku University course. *The Journal of the Japan CLIL Pedagogy Association*, 1, 100-118.
- Laal, M., & Ghodsi, S. M. (2012). Benefits of collaborative learning. *Procedia - Social and Behavioral Sciences*, 31, 486-490. <https://doi.org/10.1016/j.sbspro.2011.12.091>
- Lantolf, J. P., Thorne, S. L., & Poehner, M. E. (2015). Sociocultural theory and second language development. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (pp. 207-226). Routledge. <https://doi.org/10.4324/9780203628942>

- Lee, L. (2008). Focus-on-form through collaborative scaffolding in expert-to-novice online interaction. *Language Learning & Technology*, 12(3), 53-72. <https://dx.doi.org/10.125/44155>
- Leki, I., & Carson, J. G. (1994). Students' perceptions of EAP writing instruction and writing needs across the disciplines. *TESOL Quarterly*, 28(1), 81-101. <https://doi.org/10.2307/3587199>
- Lin, C. C., Barrett, N. E., & Liu, G. Z. (2021). English outside the academic sphere: A mobile-based context-aware comparison study on collaborative and individual learning. *Journal of Computer Assisted Learning*, 37, 657-671. <https://doi.org/10.1111/jcal.12514>
- Moslehi, S., & Kafipour, R. (2023). Predictors of language proficiency among medical and paramedical students: Vygotskian sociocultural theory. *Journal of Language and Education*, 9(4), 139-150. <https://doi.org/10.17323/jle.2023.16615>
- Özdemir, E. (2017). Promoting EFL learners' intercultural communication effectiveness: A focus on Facebook. *Computer Assisted Language Learning*, 30(6), 510-528. <https://doi.org/10.1080/09588221.2017.1325907>
- Rafieyan, V., Rafieyan, A., Rafieyan, N., Rafieyan, S., Rafieyan, P., & Rafieyan, M. (2015). Effect of developing pragmatic competence through telecollaboration on improving English as foreign language learners' writing proficiency. *Journal of Education and Practice*, 6(27), 121-131.
- Rokhmah, S. (2020). Teaching writing skills through telecollaboration. *Loquen English Studies Journal*, 13(1), 1-29.
- Shadiev, R., Hwang, W. Y., & Huang, Y. M. (2015). A pilot study: Facilitating cross-cultural understanding with project-based collaborative learning in an online environment. *Australasian Journal of Educational Technology*, 31(2), 123-139. <http://doi.org/10.14742/ajet.1607>
- Shadiev, R., Wang, X., & Huang, Y.-M. (2021). Cross-cultural learning in virtual reality environment: Facilitating cross-cultural understanding, trait emotional intelligence, and sense of presence. *Educational Technology Research and Development*, 69(5), 2917-2936. <https://doi.org/10.1007/s11423-021-10044-1>
- Shang, H. F. (2017). An exploration of asynchronous and synchronous feedback modes in EFL writing. *Journal of Computing in Higher Education*, 29(3), 496-513. <https://doi.org/10.1007/s12528-017-9154-0>
- Shang, H. F. (2019). Exploring online peer feedback and automated corrective feedback on EFL writing performance. *Interactive Learning Environments*, 30(1), 4-16. <https://doi.org/10.1080/10494820.2019.1629601>
- Shen, B., & Bai, B. (2024). Enhancing Chinese university students' writing performance and self-regulated learning (SRL) writing strategy use through a strategy-based intervention. *System*, 122, 103249. <https://doi.org/10.1016/j.system.2024.103249>
- Sun, L., & Asmawi, A. (2023). The effect of WeChat-based instruction on Chinese EFL undergraduates' business English writing performance. *International Journal of Instruction*, 16(1), 43-60. <https://doi.org/10.29333/iji.2023.1613a>
- Tran, T. Q. & Ngo, D. X. (2024). "I know how to behave appropriately in multiple contexts": Vietnamese L2 learners' perceptions of intercultural intelligence enhancement via Skype-mediated course. *Computer Assisted Language Learning Electronic Journal (CALL-EJ)*, 25(1), 2024, 168-184.
- Tseng, S. S., & Yeh, H. C. (2019). The impact of video and written feedback on student preferences of English speaking practice. *Language Learning & Technology*, 23(2), 145-158. <https://doi.org/10.125/44687>
- Vonderwell, S. (2003). An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *Internet and Higher Education*, 6, 77-90. [https://doi.org/10.1016/S1096-7516\(02\)00164-1](https://doi.org/10.1016/S1096-7516(02)00164-1)
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press. <https://doi.org/10.2307/j.ctvjf9vz4>
- Wang, C. M. (2011). Instructional design for cross-cultural online collaboration: Grouping strategies and assignment design. *Australasian Journal of Educational Technology*, 27(2), 243-258. <https://doi.org/10.14742/ajet.968>
- Wigglesworth, G., & Storch, N. (2012). What role for collaboration in writing and writing feedback. *Journal of Second Language Writing*, 21(4), 364-374. <https://doi.org/10.1016/j.jslw.2012.09.005>
- Wu, Z. (2020). Tracing EFL writers' digital literacy practices in asynchronous communication: A multiple-case study. *Journal of Second Language Writing*, 50, 100754. <https://doi.org/10.1016/j.jslw.2020.100754>
- Wu, W. C. V., Yang, J. C., Hsieh, J. S. C., & Yamamoto, T. (2020). Free from demotivation in EFL writing: The use of online flipped writing instruction. *Computer Assisted Language Learning*, 33(4), 353-387. <https://doi.org/10.1080/09588221.2019.1567556>
- Xu, Z. (2017). Developing metacultural writing competence for online intercultural communication: Implications for English language teaching. *TESL-EJ*, 20(4), 1-9.
- Yang, Y. F. (2018). New language knowledge construction through indirect feedback in web-based collaborative writing. *Computer Assisted Language Learning*, 31(4), 459-480. <https://doi.org/10.1080/09588221.2017.1414852>

- Yanguas, I. (2010). Oral computer-mediated interaction between L2 learners: It's about time! *Language Learning & Technology*, 14(3), 72–93. <https://dx.doi.org/10.125/44227>
- Yeşilyurt, S. (2008). *A self-determination approach to teaching writing in pre-service EFL teacher education* [Unpublished doctoral dissertation]. Atatürk University.
- Yu, S., Jiang, L., & Zhou, N. (2020). Investigating what feedback practices contribute to students' writing motivation and engagement in Chinese EFL context: A large scale study. *Assessing Writing*, 44, 100451. <https://doi.org/10.1016/j.asw.2020.100451>