RESEARCH ARTICLES

Reducing Classroom Anxiety and Enhancing Language Identity: A Study on the Role of ICT in Japanese EFL Learning

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This paper investigates the results of using information and communications technology (ICT) as interventions to counter barriers which inhibit students' proclivity to speak, quality of speaking output, and overall second language (L2) identity development. The study focused on students taking English courses in the Japanese secondary and tertiary levels. Informed by literature and classroom observations, the instructors devised plans to implement technological interventions into their syllabus to address the issues caused by student anxiety and lack of teacher support due to practical issues, such as time constraints and classroom size. Data from pre-intervention and post-intervention learner surveys was collected to measure changes in students' responses, as well as evaluations of the interventions. The results of the study indicate the ICT interventions had a statistically significant decrease in areas of student anxiety, an increase in confidence with ICT use in the classroom, and a slight increase in L2 self development. Interventions, especially those involving interaction and feedback, were evaluated as being most valuable to the learners. Implications towards the current landscape of senior high EFL and university EFL speaking courses are drawn from the analysis of the results.

Keywords: second-language self, foreign language anxiety, secondary level, tertiary level

With the growing need to equip students with the English skills necessary for participating in a globalizing society, instructors in Japan must become ever more critical of the pedagogical approaches to teaching in English as a Foreign Language (EFL) contexts. Motivation and output have been shown to be closely linked to the way in which learners perceive their own identity and future in relation to the target language (Dörnyei, 2009), and these can be negatively affected by student anxiety (King, 2014; Woodrow, 2006).

Navigating these issues to improve the atmosphere of a Japanese EFL classroom are important for instructors since the environment outside the classroom does not reinforce the target language development,

unlike in the contexts of English as a Second Language (ESL). However, practical classroom issues such as limited classroom time and large class sizes also disadvantages both teacher and students against meeting learning aims (Cook, 2009; Hunter et al., 2022). Information and communications technology (ICT) has allowed instructors to improve quality of education and attend to setbacks of traditional classroom settings (Madhavi et al., 2023; Teng & Zeng, 2022).

As a means to improve communicative competence of students, this study explored the use of ICT to assist in making efforts towards increasing motivation, reducing anxiety, and addressing practical classroom issues in Japanese EFL learning environments. Technological interventions were proposed to boost motivation by encouraging development of the second language (L2) self as well as alleviate foreign language anxiety (FLA). The researchers investigated the effect of the technological interventions on the L2 self and confidence of Japanese students taking English courses in their third year of high school, and second and third year of university. Though there are differences in student backgrounds and traits, such as level of education, type of institution, and age, the learners share a similar K-12 EFL educational background in which speaking output is minimal, anxiety is common, and classroom time and technology use are limited. Levels of perceptions of the L2 self, foreign language anxiety (FLA), and perceptions of ICT were self-reported by students through pre-intervention surveys at the beginning of the school term, and post-intervention surveys at the end of the term. We posited that if ICT was positioned to complement the classroom activities both inside and outside the classroom that students would be less anxious and more productive in class. ICT was also considered a tool for students to visualize their L2 self and potential future in relation to the target language. This, in turn, enables more positive perceptions and meaning-making in their EFL study.

Literature Review

The framework for which ICT can be used to develop the second language self and reduce second language anxiety emerges from the theoretical concepts discussed in the following section.

The Second Language Self

The affective variables of FLA and motivation in their role in second language acquisition are often found to be closely related with negative correlation to each other. Recent models investigating motivation and output argue that learners' perceptions of their own identity and future in relation to the target language can be influential in their motivation and output (Dörnyei, 2009). The "Second Language Motivational Self System" (L2MSS) constructed by Dörnyei (2005) was built upon by the theory of possible selves (Markus & Nurius, 1986) and the self-discrepancy theory (Higgins, 1987) through the lens of second language acquisition. This system is composed of three components: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience. The ideal L2 self encompasses the learner's image of the L2 user they aspire to become and is said to motivate the learner as they work towards this image as a goal. The ought-to L2 self represents images of an L2 user imposed on by others, such as peers or teachers, and may motivate the learner to possess these

qualities they ought to have in order to prevent negative outcomes. The L2 learning experience concerns elements related to the immediate L2 learning environment, such as the teacher or curriculum. In the context of EFL education, advocators of L2MSS purport that the responsibility of instructors is to create an L2 learning environment where learners can use the language in ways that enhances motivational aspects to bridge the gap between their imagined selves and real selves (Dörnyei & Csizér, 2002).

Various studies have validated theories of L2MSS in a variety of EFL contexts, including in the Japanese context. Kikuchi and Hamada (2023) investigated the constructs of the L2MSS for Japanese university students and found that the constructs for the ideal L2 self were important motivators for L2MSS. Another study of Japanese university students by Yashima et al. (2017) found that strong visions of the L2 self led to higher scores on proficiency tests. Results of this study also demonstrated that students who valued oral communication activities had stronger visions of their ideal self while the ought-to L2 self was more affected by a tendency to value learning grammar. These resulted in findings consistent with Dörnyei's theories regarding the ideal L2 self and attitudes towards the L2 learning environment as powerful motivators in intended effort. Moreover, some of these studies also found relationships between L2MSS and FLA with strong indications that the development of ideal L2 self is a predictor of lower anxiety (Sugawara, 2015; Ueki & Takeuchi, 2013).

While these studies support the use of the L2MSS as a means to measure student motivation, there are criticisms to this framework concerning a lack of content validity due to ambiguous wording, and under-representativeness in dimensions of the system (Dörnyei & Chan, 2013; Tseng et al., 2020). While analyzing variables affecting language learning motivation, Aryadoust et al. (2024) noted that factors affecting meaning-making, identity, and motivation were neglected in the L2MSS. A reliability generalization meta-analysis found a low reliability score, as well as fluctuation in variance based on the number of the instrument's items. Moreover, other research in French settings suggested that traditional motivational factors were tied into the L2MSS, such as integrative orientation and instrumental orientation, thus implying the L2MSS is less distinctive than presumed (Oakes & Howard, 2019).

Although this ambiguity calls for a more comprehensive approach to measure language learning motivation, the authors of the present study felt that the L2MSS would be valuable in lending insight into student perceptions of second-language identity. It is believed that low student motivation can be attributed to an underdeveloped L2 self in traditional classroom frameworks. Thus, elements measuring the constructs of the ideal self and ought-to L2 self from previous research informed the survey of the present study to evaluate effects of ICT on student self-reported perceptions of their second-language identity.

Tseng et al. (2020) developed a model for a motivational self-guide scale which was validated through formal model testing, exploratory and confirmatory factor analysis. It is from this model in which items measuring the L2 self for the current study were based on. Items from the Tseng et al. (2020) model investigated attributes learners may aspire to possess, attributes learners

may believe others would like them to possess, attributes learners may believe they ought to possess, and attributes learners may believe they ought to possess because others expect them to do so. Eight specific items from this model which were thought to be most valuable in evaluating the L2 self in Japanese EFL learners were adapted for the survey used in our present study.

Foreign Language Anxiety

Foreign language anxiety (FLA) as a point of discussion in recent decades has led to numerous articles and studies that purport its effect on student performance, especially in a debilitating manner (Horwitz, 2001; Horwitz & Young, 1991; Liu, 2006; MacIntyre, 2017). MacIntyre and Gardner (1994) describe language anxiety as "the feeling of tension and apprehension specifically associated with second language contexts" (p. 284). Conceptualizing of language anxiety in second language contexts occurred in the 1970s with the "affective filter hypothesis" proposed by Dulay and Burt (1977). This concept was further developed by Krashen (1982) and theorizes how affective variables such as motivation, confidence, and anxiety are directly related to success in second language acquisition. In 1986, Horwitz et al. proposed that FLA is an anxiety reaction which interferes with a speakers' ability to perform in a foreign language classroom that is conceptually distinct from other specific anxiety reactions. They offered a means to quantify the effects of this anxiety called the Foreign Language Classroom Anxiety Scale (FLCAS). Drawing from experiences of foreign language students, Horwitz et al. (1986) developed a 33-item questionnaire which uses a Likert scale to assess performance anxieties related to communication apprehension, test anxiety, and fear of negative evaluation.

Investigations of FLA in Japanese learners have highlighted the students tending to be more anxious and exhibiting more silent behavior (King et al., 2020; Nabei & Yasuda, 2016). Previous studies that have validated components of the FLCAS have reported high anxiety in Japanese learners (Matsutani, 2021; Nabei & Yasuda, 2016). In developing a scale of FLA for Japanese teachers in training courses, Kumada and Okamura (2017) used items from the FLCAS as well as emotional-reactivity-related items that the authors felt were characteristic of Japanese people. It was suggested that the scale showed reliability and validity and should be used in English classes for instructors to gauge how they can assist learners in overcoming emotional hindrances to build confidence in English speaking. Further, a study by Matsutani (2021) investigating FLA in Japanese learners at secondary and tertiary institutions used factor-analysis of a questionnaire composed of the FLCAS and the Attitude/Motivation Test Battery (AMTB) created by Gardner (2004). The researchers found that participants had moderate-to-high anxiety about speaking English both inside and outside the classroom. The university students exhibited higher motivation to learn English, but also higher anxiety to speak English. It was suggested that the rapport developed between classmates and teachers played a pivotal role in the reduced anxiety among Japanese learners at the secondary level. These juxtaposed factors and their intricate relationship to either succumbing to anxiety or overcoming with motivation are inherently characteristic of Japanese EFL classrooms.

As with any framework, there have been several discussions about items' psychometric characteristics, construct validity, and overall reliability of measure. These also include the concern over the number and specificity of the factors, which have led to various analyses to shorten, rework, or add to its frame. Toyama and Yamazaki (2018) used an exploratory factor analysis for a sample of university students to extract factors from the 33-item survey, then followed up with confirmatory factor analysis on a larger population (i.e. two universities and a larger sample), and used the extracted data to test a hypothetical model that subsequently demonstrated a two-factor fit.

Yet, there remain lingering concerns related to different cultural backgrounds being characteristically unique and how the values of learners contrast with the perceived expectations of what constitutes English speaking and evaluation. Toyama and Yamazaki's (2018) evaluations of the FLCAS in the context of language learners in Japan indicated cultural backgrounds and issues with translation can lead to inconsistent results. Al-Saraj (2014) similarly found that simple translation of the original items did not align with learner identities and/or include novel aspects surrounding their anxieties. Though the implication that adjustments should at least be considered moving forward, adaptations and quantitative evaluations have led to widespread confirmation and acceptance of the FLCAS as a valid measure of foreign language anxiety constructs.

Combined with other scales and/or interventions deemed suitable for the populations being measured, the FLCAS is a flexible yet suitable measure for EFL anxiety. With the present study being concerned with how FLA negatively affects student output in class, the items in the FLCAS which were confirmed to assess performance anxieties prevalent in Japanese EFL contexts (such as communication apprehension and fear of evaluation) were included to ascertain the effects of ICT on these constructs.

ICT in the Learning Environment

Use of (ICT) in the second language classroom has provided alternatives to the traditional teacher-centered learning environments that compound the passive learner dilemma. Though the Ministry of Education, Culture, Sports, Science and Technology (MEXT) recognized positive advancements of ICT utilization in education policies, including a major policy for promotion of education digital transformation (DX) they recognize that previous policies have not met their intended success markers. This includes the low average of device-to-student ratio, as well as a large variation across prefectures, despite the progressive regional finance support given to local governments initiated through their Five-Year Plan for the Environmental Improvement for ICT Utilization for Education (FY 2018-FY 2022) worth 180.5 billion yen in one fiscal year. Similarly, data from the Organisation for Economic Co-operation and Development's (OECD) Teaching and Learning International Survey (TALIS) indicated that Japanese schools had the lowest implementation rate amongst the 48 participating countries. The availability and policies of use of ICT alone is not adequate.

Japanese EFL classrooms face barriers such as limited time, low motivation, and a focus on test results (Hosoki, 2011). Effective ICT implementation requires careful attention to instructional methods, learning aims,

technology types, and cohesive integration. Instructional methods should align with larger educational goals and support individual learning (Clark & Mayer, 2016). Gibbons and Rogers (2009) proposed a layered design approach, addressing content, strategy, and data management. Research also highlights the importance of balancing learning conditions with learner expertise and minimizing cognitive load (Pachman et al., 2013; Hollender et al., 2010).

However, instructors may not have the design skills or knowledge needed to organize learning that involves multimedia, electronic platforms, or ICT in general. Further, the learning culture is often influenced by learner's native socio-cultural factors which shape cognition and active participation, but which for Japanese learners often differs from the Western-centric pedagogies and ideologies (Burrows, 2008). Kowner (2004) exemplified how these differences can be observed from their individualistic and collectivistic characteristics, and presumably account for the lack of cross-cultural communication skill acquisition for Japanese. These factors imply that activity, engagement, and meaning making must be accounted for.

The results of ICT-based interventions carried out on all levels of EFL education from elementary school to university in Japanese contexts have been mixed in terms of hard quantitative analyses but relatively positive otherwise. There was a small scale study on a population of third-grade elementary students whom were given an intervention via digital-media presentations for teacher-centered storytelling within a pre- and post-test design for measuring proper use of phrases for giving directions (Spring et al., 2022); results indicating both an overall improvement in speaking ability as well as marked increase in differences for those who had a perfect score at the outset. A high school using self-paced online Skype lessons with Filipino teachers aimed to improve listening and speaking skills (Higuchi et al., 2017). Initial high student motivation decreased over time, and while students showed increased interest in international affairs and positive attitudes, no significant improvements in English communication abilities were observed. It was implied the decline in motivation and low completion rates of this optional online program were related to the lack of integration of technology in their primary curriculum. Ferreira (2013) emphasized the importance of creating social spaces where learners can connect with their L2 real and imagined selves. In two university settings, one group wrote blog posts responding to TED Talks, while another created bi-weekly video podcasts. Evaluation focused on content relevance, creativity, and language skills. Components students rated most highly for contributing to their L2 self-development included interaction with their classmates' works, such as reading their blogs and screencasts, and feedback from their teachers.

These studies respectively exemplify how inclusion of ICT-based tasks may lead to improvements in communication skills as well as narrowed gaps between imagined and present L2 selves when technological interventions can be appropriately integrated into the learning environment. ICT-based interventions, to some degree, have allowed educators to explore options that activate learning and interest in ways that learners can identify with and make meaning from.

The aim of becoming more adept at intercultural communication, especially for more global contexts, remains an ongoing issue but one that has been wrestled with since the 1990s. Using film for English education and intercultural understanding, for example, has been generally recognized for its complexity. It has been stated that Western culture can be observed in highly representational ways but pedagogical advances for this purpose have been slow to develop in that student meaning-making process is limited to a rather shallow increased awareness of that culture (Hanamitsu et al., 2013; Hattori, 2020). Moreover, the compared culture in question is nearly always American and thus narrow in scope (Fukatsu, 2017), and most teaching aims are for recognizing cultural differences rather than the true definition of intercultural understanding that centers on the importance of diversity from both self- and global-perspectives (Saito, 2021). For a clearer construction of the L2 self, ICT and pedagogical considerations are necessary.

Although the aforementioned studies show promise, the lack of significant data or inconclusive evidence on ICT-use implies a gap in research and literature. How technology can be used to further the L2 self as well as reduce anxiety needs more ample and deeper study. The authors of this paper believe the use of the established L2MSS and FLCAS surveys could fill in some of the apparent research gaps.

Research Questions

In light of the foregoing discussion, the current study investigates the effect of ICT on development of the second language self and foreign language anxiety in high school and university students in Japan. The research was guided by exploring the following questions:

1. *To what extent can ICT be used for the development of the second language self of Japanese English language learners?*

2. *To what extent can ICT be used to alleviate foreign language anxiety of Japanese English language learners?*

In what follows, the methodology discusses the research baselines (which informed the selection of the ICT interventions) and the procedures for collection and analysis of the data, followed by the presentation of findings. Based on these findings, we discuss the observed effectiveness of the interventions and the pedagogical implications of the use of ICT in the Japanese context.

Methodology

This study employed a pre-test/post-test design to examine the influence of ICT interventions on development of the L2 Self, foreign language anxiety (FLA), and ICT perceptions between high school and university students. The study was conducted in the spring term of 2024 with Japanese students enrolled in English classes in the third year of a secondary institution (n=32, ages 17-18) and second and third year of a tertiary institution (n=41, ages 19-21) in Hokkaido. The intervention involved targeted English language training sessions, followed by post-test surveys to measure changes in students' responses. Researchers collected pre-intervention data at the beginning of the semester during the second week of April 2024 and post-intervention data at the end

of the semester during the last week of July 2024.

The instructors made assumptions and preparations to mitigate common barriers to achieving learning aims. These related to student anxiety, insufficient planning of technology integration, lack of student support due to issues of time constraints and classroom size. Informed by the literature and classroom observations, the instructors devised plans to implement technological interventions into their curriculum to address the issues. Although the institutions, age-group and syllabi in the two classes varied, there was some overlap in content, and both classes had similar learning goals with focus on developing communication skills, especially speaking and listening. Together they discussed and agreed upon matters related to structure of assignments, means of submission, method of evaluation, and types of ICT to be used to best implement the interventions. Data from pre-intervention and post-intervention surveys was collected to measure changes in students' responses.

Research Baselines

A summary of the assumptions, interventions, and examples of usage are seen in Table 1 below (see Appendix A for images of implemented interventions).

The first assumption was pertaining to motivation and the development of the L2 self on performance. It was assumed that in classrooms with more traditional frameworks, Japanese students are not exposed to enough opportunities to observe speakers of English use the language in natural contexts. Moreover, students are not engaged enough with the materials being used in class. By using more authentic material, such as videos of various English-speakers in a variety of situations, students will be more engaged and develop a better idea of what they may use English for in the future. Furthermore, using online platforms for interactions and assignments can give students more ownership over their own learning which can lead to better engagement and higher motivation.

Table 1

Baseline Assumptions and Interventions

Assumptions	Interventions	Examples
1. Student motivation is lower, and L2 self is underdeveloped in traditional classroom frameworks	Use authentic material	·Videos
	Use LMS to provide engaging contexts for interaction and develop self-regulation	·Discussion forums
2. Students have anxiety when speaking in class and presenting	Use LMS to provide engaging contexts for interaction and develop self-regulation	·Discussion forums
	Use LMS to provide less socially pressured contexts for interaction	·Discussion forums ·Assignment upload
	Use LMS to prepare for class activities	·Vocabulary quizzes ·Syntax & grammar pattern practice ·Discussion forums
	Use technology for students to check their pronunciation outside of the classroom	·AI software (i.e. Teams) ·Online feedback

The second assumption concerned the effect of FLA on classroom performance, especially for speaking activities. It was assumed that some students' lack of

preparation and confidence was a factor in their reluctance to speak aloud in classroom activities. To mitigate this issue, it was proposed that online activities using an online learning management system (LMS) to scaffold tasks to build linguistic skills prior to lessons will help students gain the knowledge they need for upcoming lessons and become confident in what they are sharing in the classroom, such as assignments that review vocabulary and grammar. Discussion forums in which students can interact with each other using a target pattern can also provide less socially pressured contexts for interaction before repeating the activity face-to-face in upcoming classes. Previous studies used interactive blogging in a similar way to create imagined communities online for meaningful interaction (Ferreira, 2013).

Students and teachers want to use class time for interaction and speaking activities, however, there are oftentimes practical difficulties such as large classroom sizes and lack of class time. For instance, in addition to the speaking activity itself, the lesson may have to include a review of key linguistic elements such as vocabulary and grammar points, preparation for the activity, evaluation, and feedback. Lack of preparation for these activities may leave students feeling unsupported and out of their depth, but insufficient class time puts pressure on the teacher to move on with the communicative element of the task. Class time can be saved if reviewing linguistic variables were relegated to online assignments, and evaluation and feedback by the teacher could be transmitted electronically. Thus, another proposed intervention was for students to upload voice or video recordings for some speaking tasks which would be evaluated by AI or teachers. The online assignment and feedback address practical efficiency issues for the teacher and allow the student to do the speaking task at their own pace without the pressure of peer judgment.

Resources for Intervention

The classes used a variety of ICT such as an LMS, collaborative applications, as well as audio-visual materials. The LMS called *Canvas* was used to upload classroom materials (textbook pages, audio, videos, rubrics, and other handouts), assign quizzes and homework, conduct online discussions, submit media files of speaking activities, and transmit comments or feedback on assignments. *Microsoft Teams* was used to practice speaking fluency using the "Reading Progress" tool whereby recordings are automatically collected and assessed by AI. The instructors also showed students videos from authentic sources in lessons.

Data Collection

Two surveys were carried out during the term to assess whether the interventions helped mitigate the challenges in EFL classrooms. The first survey was a pre-intervention survey conducted at the beginning of the school year in April (high school: n=32, university: n=32). A 40-item survey was conducted to evaluate students' L2 self, FLA, technology-related anxiety, and prior knowledge about ICT. A model for a motivational self-guide scale developed by Tseng et al. (2020) was adapted for the questions which intended to explore the L2 self. The questions regarding FLA were drawn on the Foreign Language Classroom Anxiety Scale (FLCAS) by Horwitz et al (1986) and was adapted and expanded on for the purpose of our study and classroom

situation. In addition to observed learner difficulties with technology within our own classroom situations, the questions pertaining to technology-related anxiety were informed by the study of Octaberlina & Muslimin (2020) that investigated online learning barriers faced by students, and a questionnaire exploring secondary school students' perceptions of ICT use in the EFL classroom by Pardede (2020). The questions used a Likert scale, apart from the final question which asked students to list platforms and software they have experienced using in the classroom.

At the end of the term, the students were given a 49-item post-intervention survey to once again evaluate students' L2 self, FLA, and technology-related anxiety (high school: n=31, university: n=38). Researchers surmised that using the same survey items for pre- and post-intervention surveys was necessary to maintain measures of validity and reliability. However, researchers considered how the L2MSS and FLCAS measures might be affected by other potential derivations and respective impacts on the study. For example, the fact that Japanese hold unique cultural values which may not coincide with the integrity of the measures (Toyama & Yamazaki, 2018), and particularly how Japanese EFL learners' are inclined to report lower levels of self-confidence and achievement (i.e. due to humility or lack of pride), as well as higher levels of anxiety (i.e. due to aversion to second-language learning and fear of making mistakes) (King, 2014; King et al., 2020; Nabei & Yasuda, 2016; Woodrow, 2006). Thus, researchers decided that aside from the documented L2MSS and FLCAS survey items, an additional section in the post-intervention survey should be included to summarize ICT tools and allow for learners to evaluate their perceived efficacy of those in simpler terms. In this section of the survey, the students were asked to assess the degree to which the technological interventions were useful for helping them achieve particular learning goals, develop skills of the target language use domain, develop their L2 self, and alleviate classroom anxiety.

Data Analysis

Data was analyzed using *IBM SPSS Statistics* (version 26) and *Jamovi* (version 2.4.14). Given the differing number of participants who completed pre- and post-intervention surveys (due to absence on data collection day), both the t-test and Mann-Whitney U test were employed to offer a comprehensive comparison of groups. The t-test assumes interval data and it is suitable for large sample sizes, while the Mann-Whitney U test is a non-parametric alternative that does not require normality assumptions; ideal for ordinal data, such as Likert scales. Using both tests enhances the robustness of findings, ensuring consistency in results regardless of whether data is treated as interval or ordinal, leading to a more reliable interpretation.

Descriptive statistics (means and standard deviations) were calculated for all survey items. For inferential statistics, p-values of less than 0.05 were considered statistically significant, and 95% confidence intervals were reported for effect sizes.

Ethical Considerations

Permission to conduct the study was received by the institutions. The survey included an informed consent form explaining the study in which the students checked a consent box before proceeding.

Confidentiality was ensured by removing any personal identifying information while processing the data, as well as careful handling and storage of survey raw data.

Results and Analysis

Data collected from the pre-intervention and post-intervention surveys for learners in high school and university were compared and analyzed. This was done through the calculations of descriptive statistics, employment of independent t-tests and Mann-Whitney U tests, and evaluation of inferential statistics in which p-values of less than 0.05 were considered statistically significant, and 95% confidence intervals were reported for effect sizes. The analysis of the data is reported in this section based on questions from the survey which evaluated the learners' development of the L2 self, foreign language anxiety, perceptions of ICT, and perception of intervention methods. See Appendix B for statistical analysis.

Analysis of Changes in Development of the L2 Self

The interventions did not yield significant results in the development of the L2 self among participants. There were slight increases in the mean scores for questions that assessed the ideal L2 self as well as those for the ought-to L2 self, although to a smaller extent.

Analysis of Changes in Development of the Ideal L2 Self (Questions 1-4)

A comparison of the mean scores of the first four questions that evaluated the development of the ideal L2 self showed a slight increase post-intervention demonstrated in Table 2 below. However, the independent samples t-test and Mann-Whitney U test conducted to evaluate the impact of the intervention across the four survey questions suggest the intervention did not significantly affect the students (see Appendix B).

Table 2

Pre- and Post-Intervention Changes in Development of the Ideal L2 Self

Question		Mean (SD) Pre		Mean (SD) Post		p
1	HS	3.44	(1.366)	3.68	(1.275)	0.162
	UNI	2.41	(1.150)	2.95	(1.184)	
2	HS	3.63	(1.519)	3.84	(1.293)	0.267
	UNI	2.67	(1.330)	3.16	(1.263)	
3	HS	3.31	(1.203)	3.45	(1.338)	0.860
	UNI	2.39	(1.370)	2.34	(1.214)	
4	HS	3.00	(1.344)	3.39	(1.476)	0.496
	UNI	2.07	(1.184)	2.21	(1.318)	

For *imagining conversing in English with international friends (Q1)*, high school students' mean scores increased from M = 3.44 (SD = 1.37) pre-intervention to M = 3.68 (SD = 1.28) post-intervention. Similarly, university students saw an improvement from M = 2.41 (SD = 1.15) to M = 2.95 (SD = 1.18) post-intervention. However, the independent samples t-test and Mann-Whitney U test found no significant difference between pre- to post-intervention (p = .162). In terms of *imagining future ease in listening and speaking English (Q2)*, high school students' mean scores increased from M = 3.63 (SD = 1.52) pre-intervention to M = 3.84 (SD = 1.29) post-intervention. University students also showed a positive trajectory, however to a lesser degree than the high school students with improvement from M = 2.67 (SD = 1.33) to M = 3.16 (SD = 1.26). Like the previous

question, though, no significant difference was observed (p = 0.267).

Analysis of Changes in Development of the Ought-to L2 Self (Questions 5-8)

As shown in Table 3 below, the results for questions 5-8 which evaluate the development of the ought-to L2 Self demonstrated no significant differences in students' perceptions before and after intervention.

Table 3

Pre- and Post-Intervention Changes in Development of the Ought-to L2 Self

Question		Mean (SD) Pre		Post		p
5	HS	4.47	(0.915)	4.35	(1.050)	0.684
	UNI	3.82	(1.219)	4.16	(1.151)	
6	HS	4.50	(0.950)	4.55	(0.768)	0.425
	UNI	3.86	(1.297)	4.18	(1.036)	
7	HS	3.72	(1.143)	3.94	(1.093)	0.940
	UNI	3.32	(1.307)	3.24	(1.478)	
8	HS	3.75	(1.016)	3.94	(1.031)	0.320
	UNI	3.14	(1.145)	3.42	(0.919)	

For learners considering whether they should be able to speak fluently with English-speaking friends (Q5), no significant change was observed (p = .684). Similar to the results found for questions asking learners to reflect on being able to easily converse with others in English (Q6) (p = .425), other people thinking their English speaking needs to be better trained (Q7) (p = .940), and other people thinking they should talk in English with international friends (Q8) (p = .320).

Differences of Development of the L2 Self in High School and University Students

The independent samples t-test results indicated several notable differences between high school and university students as follows (see Appendix B). High school students were significantly more likely than university students to *imagine having conversations in English with international friends (Q8)* (M = 0.73, p = .016) and to foresee themselves *speaking and understanding English with ease in the future (Q2)* (M = 0.68, p = .031). They also had stronger beliefs that *friends would admire their ability to understand various English accents (Q3)* (M = 1.11, p < .001) and that their *English-speaking skills would make friends proud (Q4)* (M = 1.18, p < .001). Additionally, high school students felt that others perceived their *English-speaking skills as needing improvement (Q7)* (M = 0.70, p = .032) and were more likely to be encouraged to *converse in English with international friends (Q8)* (M = 0.51, p = .032).

Analysis of Changes on Foreign Language Anxiety (Questions 9-25)

The intervention yielded several significant results in reducing foreign language anxiety among participants. The relevant results are depicted in Table 4 below.

Table 4

Summary of Pre and Post Intervention Changes in Foreign Language Anxiety

Question		Mean (SD)				p
		Pre		Post		
9	HS	3.97	(0.999)	3.35	(1.473)	0.050
	UNI	4.00	(1.089)	3.74	(1.178)	
10	HS	3.50	(1.295)	3.10	(1.446)	0.037
	UNI	3.32	(1.307)	2.76	(1.364)	
11	HS	3.09	(1.553)	2.74	(1.591)	0.079
	UNI	3.69	(1.312)	3.05	(1.451)	
12	HS	3.31	(1.256)	2.58	(1.361)	0.001
	UNI	3.86	(0.990)	3.03	(1.345)	
13	HS	3.78	(1.070)	2.97	(1.251)	0.058
	UNI	3.66	(1.143)	3.61	(1.242)	
16	HS	2.91	(1.353)	2.71	(1.189)	0.016
	UNI	3.62	(1.178)	2.66	(1.419)	
17	HS	2.75	(1.218)	2.23	(1.175)	0.012
	UNI	3.48	(1.214)	2.76	(1.403)	
19	HS	3.44	(1.294)	3.00	(1.000)	0.244
	UNI	3.38	(1.237)	3.29	(1.313)	
21	HS	3.34	(1.125)	2.84	(1.214)	0.018
	UNI	3.50	(1.401)	2.92	(1.323)	
25	HS	3.03	(1.338)	3.03	(1.329)	0.018
	UNI	3.16	(1.261)	3.16	(1.191)	

Notably, embarrassment about *volunteering answers in class (Q12)* saw a substantial decrease (p = .001) and anxiety related to *panic when called on in class (Q10)* significantly decreased (p = .037) reflecting a significant improvement in students' comfort with participation. Additionally, self-consciousness about *speaking in front of others (Q16)* and worries about *keeping up with class pace (Q17)* were significantly reduced (p = .016 and p = .012), respectively. These findings suggest that the intervention effectively mitigated key aspects of foreign language within the classroom.

Several other items also showed significant reductions in anxiety, including general nervousness and *confusion during class (Q21)* with a p-value or 0.18 (t-value of -2.39) indicating meaningful decreases in these anxiety components. Additionally, anxiety about *completing assigned work in English (Q25)* was significantly reduced, [p = .018, t(126) = -2.40], suggesting that the intervention helped alleviate worries about academic performance and workload.

Conversely, several items did not show significant changes post-intervention. Items such as *worries about the consequences of failing (Q11)* and anxiety about *interaction with native speakers (Q19)* did not reach statistical significance, with p-values of .079, and .244, respectively. This lack of significance suggests that while the intervention was effective in addressing certain aspects of anxiety, it did not uniformly impact all areas of foreign language anxiety.

Differences of Changes in Foreign Language Anxiety in High School and University Students

Both groups experienced a reduction in anxiety related to speaking English following the intervention, but differences between the groups remained. For example, university students reported higher levels of

anxiety after the intervention (M = 3.74, SD = 1.18) than the high school students (M = 3.35, SD = 1.47). However, prior to the intervention, both groups had higher levels of anxiety, with university students reporting M = 4.00 (SD = 1.09) and high school students reporting M = 3.97 (SD = 1.00). Similarly, high school students reported less *panic at the thought of being called on in English class (Q10)* post-intervention (M = 3.10, SD = 1.45) than university students (M = 2.76, SD = 1.36). Pre-intervention, high school students' panic levels were slightly higher (M = 3.50, SD = 1.30) compared to university students (M = 3.32, SD = 1.31). After the intervention, high school students reported significantly greater anxiety about *speaking (Q13)* compared to university students (p = 0.038, M = -0.64.1). Additionally, high school students were significantly more likely to feel like *not attending English class (Q14)* (p = 0.004, M = -0.90) and to be nervous about *upcoming presentations (Q23)* (p = 0.027, M= -0.78).

Analysis of Changes in Perception of ICT (Questions 26-39)

The results showed an increased reliance on ICT for completing classwork post-intervention as well as an increase in overall comfort and confidence in utilizing ICT for educational purposes as illustrated in Table 5 below.

High school students reported a mean increase from M = 2.69 (SD = 1.60) pre-intervention to M = 3.84 (SD = 1.32) post-intervention, while university students showed a similar increase from M = 2.61 (SD = 1.26) to M = 3.61 (SD = 1.42). Questions which asked learners to evaluate their difficulties with using ICT and online platforms for their classes showed a significant improvement indicated by the reductions in *trouble with ICT (Q27)* p = .003, t(127) = 3.082] and *trouble with online platforms (Q29)* [p = .011, t(128) = 2.584]. Confidence in using *online platforms for completing tasks (Q30)* also increased significantly [p = .007, t(128) = 2.725]. Conversely, perceptions of the benefits of ICT in improving specific skills such as speaking and listening did not show significant changes. When asked whether they believed *ICT could improve their speaking skills (Q32)*, a comparison of mean scores show students displayed a more positive attitude with high school students reporting M = 3.44 (SD = 1.24) pre-intervention and M = 3.52 (SD = 1.26) post-intervention, and university students reporting M = 3.90 (SD = 1.26) pre-intervention and (M = 4.11, SD = 1.15) post-intervention. However, the results were not seen as statistically significant [p = .408, t(127) = 0.831].

Questions related to concerns about the potential negative impacts of ICT also remained statistically insignificant. Participants' concerns about *ICT being a distraction (Q37)* [p = .396, t(127) = 0.851], *accessibility issues (Q38)* [p = .214, t(128) = -1.248], and *health effects (Q39)* [p = .668, t(128) = 0.429] did not significantly change post-intervention. This indicates that while the intervention improved practical aspects of ICT use, it did not significantly address all concerns or change all perceptions related to ICT in education.

Table 5

Summary of Pre and Post Intervention Changes in Perceptions of ICT

Question		Mean (SD) Pre		Post		p
27	HS	2.81	(1.306)	3.35	(1.253)	0.003
	UNI	2.50	(1.036)	3.32	(1.276)	
29	HS	2.91	(1.088)	3.10	(1.165)	0.011
	UNI	2.55	(1.183)	3.37	(1.051)	
30	HS	2.88	(1.362)	3.26	(1.094)	0.007
	UNI	2.55	(1.088)	3.32	(1.188)	
32	HS	3.44	(1.243)	3.52	(1.262)	0.408
	UNI	3.90	(1.263)	4.11	(1.149)	
33	HS	3.72	(1.224)	3.97	(1.080)	0.145
	UNI	3.83	(1.284)	4.16	(1.128)	
37	HS	3.06	(1.294)	3.23	(1.283)	0.396
	UNI	3.61	(1.197)	3.74	(1.223)	
38	HS	2.88	(1.362)	2.32	(1.107)	0.214
	UNI	3.59	(1.296)	3.39	(1.386)	
39	HS	3.81	(1.355)	3.68	(1.301)	0.668
	UNI	3.72	(1.334)	4.03	(1.284)	

Differences of Perception of ICT in High School and University Students

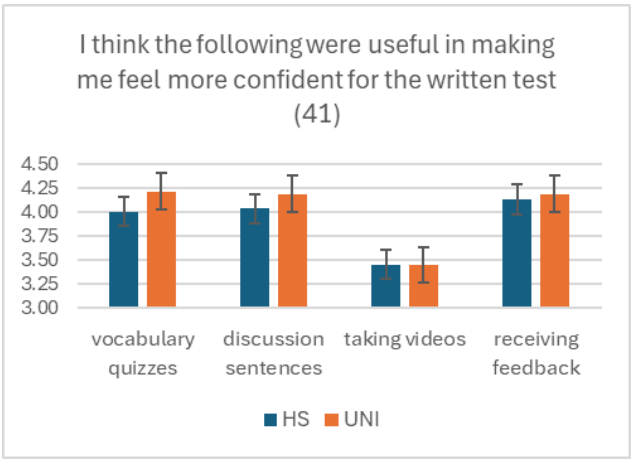
Although both high school and university students showed an increased reliance on ICT for completing classwork post-intervention, high school students saw less potential in ICT for improving particular skills, such as speaking abilities, than university students ($p = 0.047$, $M = -0.59$). High school students were also less concerned about access to online platforms than university students ($p < 0.001$, $M = -1.07$).

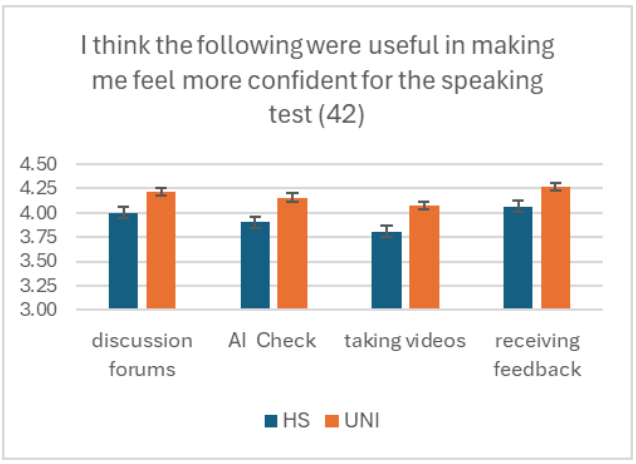
Impact of Interventions (Questions 40-47 post-intervention)

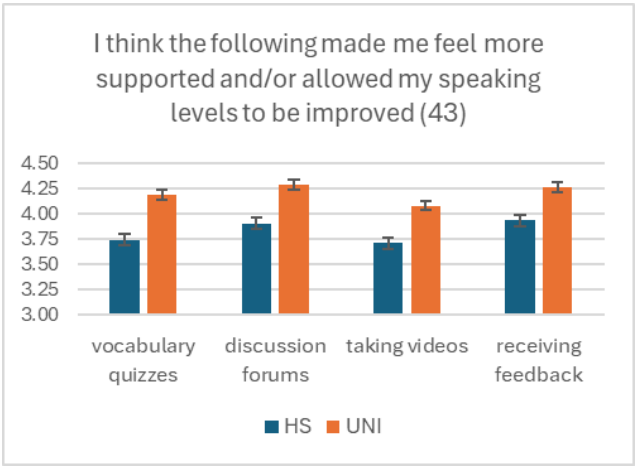
Questions 40-47 on the post-intervention survey asked students to evaluate their impressions of each intervention on a Likert scale with relevant results depicted in Figure 1 below (see full results in Appendix C).

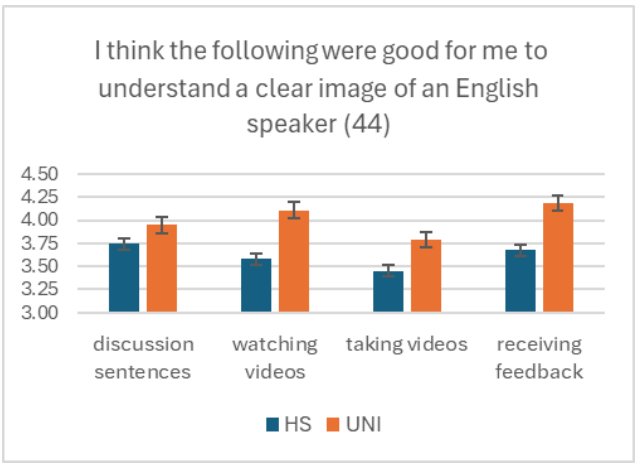
Figure 1

Differences in Perception of Interventions in High School (HS) and University (UNI) Students









The descriptive statistics revealed notable differences in how various activities were perceived in terms of boosting confidence for speaking and writing tests. *Receiving feedback* (M = 4.17, SD = 1.028) was rated as the most impactful for improving confidence in the speaking test, while *discussion forums* (M = 4.12, SD = 1.078) and *Microsoft Teams AI Pronunciation Check* (M = 4.04, SD = 1.143) were also highly rated. Similarly, for the written test, *vocabulary quizzes* (M = 4.12, SD = 1.078) and *receiving feedback* (M = 4.16, SD = 0.994) were the most effective tools, with *discussion sentences* (M = 4.12, SD = 1.051) following closely behind. These results indicate that activities involving direct feedback and peer interaction had the greatest positive effect on test confidence.

In terms of activities that helped students feel more supported in improving their speaking abilities, *receiving feedback* (M = 4.12, SD = 1.145) and *discussion forums* (M = 4.12, SD = 1.051) were again the most positively rated. For gaining a better understanding of English speakers, *watching videos* (M = 3.87, SD = 1.162) and *receiving feedback* (M = 3.96, SD = 1.077) were identified as helpful, though not as highly rated as the previous activities. Finally, *taking videos* was consistently rated lower across most categories, with students perceiving it as the least impactful method for building confidence and understanding (i.e., for the speaking test, M = 3.96, SD = 1.156). These findings suggest that while video-based tools were somewhat useful, students valued interactive and feedback-driven activities the most in their language learning process.

Differences of Perception of Interventions in High School and University Students

University students rated *Microsoft Teams AI Pronunciation Check*, watching videos, and *receiving feedback* significantly higher than high school students. No significant differences were found for *vocabulary quizzes*, *discussion sentences*, *discussion forums*, or *taking videos*. This suggests that university students found tech-based tools and feedback more useful than high school students did. Differences were also found while examining whether high school and university students found various methods engaging for learning and practicing English A significant difference was also found in *discussion sentences* and *discussion forums*, where university students rated these methods as more engaging than high school students. The other categories, such as *vocabulary quizzes, Microsoft Teams*

AI Pronunciation Check, watching videos, taking videos, and *receiving feedback*, did not show significant differences, indicating similar perceptions between high school and university students for these methods.

Discussion

Impact of Interventions on Development of the L2 Self

For the items measuring development of the ideal L2 self, both groups had increases in the means for *imagining conversing in English with international friends* and *imagining ease in listening and speaking English in the future.* The high school group data indicated higher means more consistently which could be due to various factors. Bearing in mind the high school's reputable status nationwide, external influences (e.g. parents, teachers, entering the university they desire) could have played a motivational role. Yet, as we saw similar increases for this section for students from the university, one which does not carry such a high reputation nationwide, we can infer there were some other causes.

Regarding the statistical analysis of pre- and post-intervention changes for the L2 self's four ought-to items, the difference in means was substantially less for both groups with theMann-Whitney U test results showing no significant difference for any of the questions. This suggests that the intervention did not significantly alter students' perceptions of the influence of external obligations or the expectations of those around them on the L2 Self. However, this outcome was considered prior to the investigation, especially due to the researchers' knowledge of and experience with Japanese students whose characteristics often include shyness, lack of willingness to communicate, humility and/or modesty regarding their actual English ability (King, 2014), and the fact that the origination of the L2MSS and its wording for its respective survey items was foreign so that even with translation into Japanese the learners might interpret/evaluate the wording from a characteristically Japanese lens (i.e. with the common characteristics of humility, especially towards EFL ability).

Moreover, though the Mann-Whitney U test results for pre- and post-intervention did not indicate significant differences for ICT usage towards the development of the L2 self for the eight respective itemized survey questions, the data pertaining to the specific types of ICT implemented to measure students' perceptions of value in the interventions showed otherwise. Learners rated some forms of ICT that would lead to development of the L2 self more highly than others. This could be due to the fact that these questions included less verbose wording to allow students a simpler reflection.

Concerning the added results section data for question 44, university students indicated that *watching videos* and *receiving feedback* (on speaking) was effective for *enhancing learners' image of an English speaker* (i.e. L2 self) with ratings of 4.12 and 4.18 respectively on the Likert scale. Though rigorous quantitative analyses did not show statistical significance, this change supports our hypotheses that ICT would enhance learners' image of an English speaker (i.e. L2 self). For question 45, university students indicated a 4.13 score for *watching videos* to *get a better image of what kind of English speaker I might become*, suggesting a perceived value by the university sample group. For high school students, data for

both questions 44 and 45 indicated a similar though lower positive score of 3.58 and 3.65 respectively, which suggests that age or other variables played a factor in the younger students' perception of those tools.

Plausibly, the data differences derive from the differences in age. University students have already entered society, thus the technology impact on their world perspectives for English and L2 self might be considered as more realistic or closer to their perceived reality. Though, for the younger sample group, lower scores could be indicative of a less definitive perception of L2 self. If so, this could be due to differences in the development and effect of perspectives, values, or criteria related to English education, L2 self, and/or EFL achievement therein. This possibility resonates most with the researchers, in that age or maturity levels affect world and self-perspectives and the subtle yet similar increases could reflect reported differences on self-reported confidence levels.

Impact of Interventions on Foreign Language Anxiety

The analysis of the survey results showed the interventions had a significant impact on reducing FLA in the classroom. Items related to anxiety with class participation and academic performance were rated markedly lower in the post-intervention survey results indicating effectiveness in improving confidence in the classroom. We addressed the assumption that FLA affects classroom performance through interventions using LMS and other ICT tools. LMS Canvas activities were intently used in a scaffolded manner to prepare students for class tasks and to boost their confidence to participate. For one such activity, students submitted ideas for upcoming class discussions, and teachers provided feedback on their responses. The descriptive statistics that analyzed students' evaluation of the interventions showed that this intervention was effective for promoting confidence in speaking performances and written tests. Moreover, the students rated the online feedback as effective for speaking performances, written tests, and improved speaking abilities.The AI Pronunciation Check tool was highly rated for boosting confidence in speaking. It seems that feedback, whether from a teacher or by an AI, was valuable for students and helped alleviate anxiety.

Out-of-class practice was monitored through discussion forums and student video uploads on the LMS. These interventions were intended to provide a less socially pressured context for interaction with peers in English. The discussion forums were rated highly for improving confidence on speaking tasks, however, taking videos of interactions showed the least impact across all categories. Recording themselves speaking English may have made students feel vulnerable similar to a live classroom performance. Students may still feel camera shyness, regardless of the social context. However, the high school teacher found that uploading recordings, instead of performing them during class, addressed efficiency issues caused by large class sizes and limited time. Receiving feedback was stated as the most impactful intervention, and the teacher felt that the recordings afforded more time to thoroughly evaluate students' speaking and give more in-depth feedback than if performances were presented live during class. While uploading videos didn't reduce FLA, both teachers used them for feedback

and evaluation that provided other forms of student support.

Although some interventions improved classroom confidence, concerns about general language use and interpersonal communication showed no significant change statistically, especially among university students. University students experiencing higher anxiety than high school students echo findings in previous studies (Matsutani, 2021). A study by Wang & Liu (2024) using an adapted version of the FLACS also found differences in anxiety levels between academic levels of junior and senior high school students with students in higher grades experiencing higher anxiety. These outcomes may be attributed to the distinct challenges each group faces, with students potentially experiencing more complex academic and social pressures as they progress through educational stages. Future research can explore tailored interventions that specifically address the unique needs of students in higher academic levels to enhance the effectiveness of anxiety reduction strategies.

Impact of Interventions on Perceptions of ICT

By normalizing the use of online platforms as a part of regular lessons and classroom activities, students became more confident in using these systems as indicated in Table 5 of Section 4.3 above. Previous studies in the Japanese EFL context had indicated low motivation in students to complete online tasks due to the lack of integration of ICT into the existing curriculums (Higuchi et al., 2017). Thus, results of this study which demonstrate the potential for students to become more confident and proficient in the use of ICT can encourage instructors to be more proactive in the coalescence of technologies in the modern classroom. However, educators and stakeholders also need to consider the infrastructure needed to make the learning environment compatible for the implementation of technology into the curriculum. Results of the study showed that students remained apprehensive about accessibility issues, such as poor Wi-Fi signals. University students presumably rely on the Internet to complete classwork not only for the classes in the present study, but also for other subjects, perhaps giving them concern for access more than high school students.

Moreover, the adoption of ICT into teaching methodologies may also require teachers to not only advise students on how to use the technologies, but also how to regulate themselves while they use devices. Self-reporting on the present study showed that the students were also concerned with ICT posing a distraction. With over 98% of high school students owning their own device such as a smartphone (Ministry of Internal Affairs and Communications, 2024), the aptitude of students to discern when to use a device for educational purposes and not entertainment is something that ought to be considered by instructors. Positive perceptions of ICT may improve if students are able to feel more autonomy with the confidence to control their focus and self-regulate their usage.

The perceptions of ICT to improve speaking abilities denoted only slight increases in both high school and university students without statistical significance. However, questions in the post-intervention survey evaluating the interventions showed that students found *discussion forums* and

receiving feedback to be useful for improving speaking abilities, while *receiving feedback, discussion forums* and *Microsoft Teams AI Pronunciation Check* was valuable for boosting confidence in speaking tests."

As previously stated, receiving feedback from the teacher or an AI supported students in their confidence for speaking. Regarding the discussion forums, these activities allowed students to practise structures learned in class by interacting with their classmates using the LMS. Previous studies used interactive blogging and comments in a similar way for learners to develop L2 identities (Ferreira, 2013). The present study supports the idea that allowing students to use these online spaces to interact with each other can allow students to feel more confident with their oral output. The creation of a discussion forum can imitate an online community in which students feel as though their interactions are meaningful and empower students to communicate face-to-face. Thus, although the students did not report a change in their perceptions of ICT as a whole influencing particular skills, there was a clear impact of particular technological interventions assisting with proclivity to speak and quality of speaking output.

Study Limitations and Implications for Future Research

The basic premise of this study was for promoting a more social, hospitable environment for learners via ICT tools, which influenced our pre-test pedagogical decisions. Though we understood the potential gaps of the associated evaluation surveys at the outset, we intended to improve our pedagogies and instructional design based on student survey results and perceptions of those tools. However, upon completion of the study, we noted one limitation as the use of the odd-number-point Likert scale which may have allowed participants to select the middle choice without reflecting on the question. A 26-country study evaluating major differences in response styles showed that Japanese respondents were the most likely to show middle response styles (Harzing, 2006). The current study used a 5-point Likert scale as an adaption of the Foreign Language Classroom Anxiety Scale (FLCAS) by Horwitz et al (1986), however, future research using Likert scales should consider an even-numbered scale to assure more discrimination and reliable data.

Despite this, we felt confident about the rather definitive quantitative findings. The data analysis and subsequent discussion between researchers highlighted potential changes to teacher pedagogies, instructional design, and reworked methodology moving forward. These included ways to bring increased attention to intercultural aspects in chosen media, improved dialogue with students about evaluation/advice on submitted videos and audio, establishing a narrative of intercultural differences to align with speaking aims, along with a more concise set of measures related to learners' personal backgrounds and future aims which may coincide with L2 self growth.

We felt that future studies related to the intertwining of ICT with classroom anxiety and/or the L2 selves could focus less on the validity and reliability of FLCAS and L2MSS survey constructs, and more on the intricacies of the learning environment, learner values, and ways that design, media and tasks progress learners' conscious awareness of

their ideal and ought-to L2 selves in more comfortable speaking situations.

Conclusion

Through the data analysis of pre- and post-intervention surveys, responses to some of the L2MSS and FLCAS items indicated positive changes in students' L2 self-perceptions as well as those related to anxiety. Additional discoveries concerning the relationship between ICT tools and perceived improvements towards speaking ability were found, though these were not focal points of this study in terms of the L2MSS and FLCAS measures. Thus, we considered the subsection added to the post-intervention relevant to measuring perceived usefulness of ICT. We found that interactive tasks such as use of online discussion forums, and feedback-driven activities in which teachers transmitted student evaluations electronically were the most highly valued by students. For educators that have not explored the effectiveness of ICT tools in their classroom, this study could serve as a basis for investigating how efficacious they are and justify their uses in teaching situations. It can also provide ideas on integrating particular technologies into their educational spaces.

Perhaps the hypotheses for this study, although relevant to the field of EFL in Japanese education and respective challenges therein, could be adjusted for a qualitative methodology such as pragmatism to better understand how students value ICT. Anxiety reduction via the use of ICT was confirmed in this study, however a follow-up study that examines more specific relationship(s) between speaking anxiety and particular tools could prove worthwhile. In lieu of the data and from the researchers' experience, it seems that the L2 self measures are too abstract and require a finer foundational validity which includes wording that identifies with the culturally relevant characteristics and values that Japanese students are affected by.

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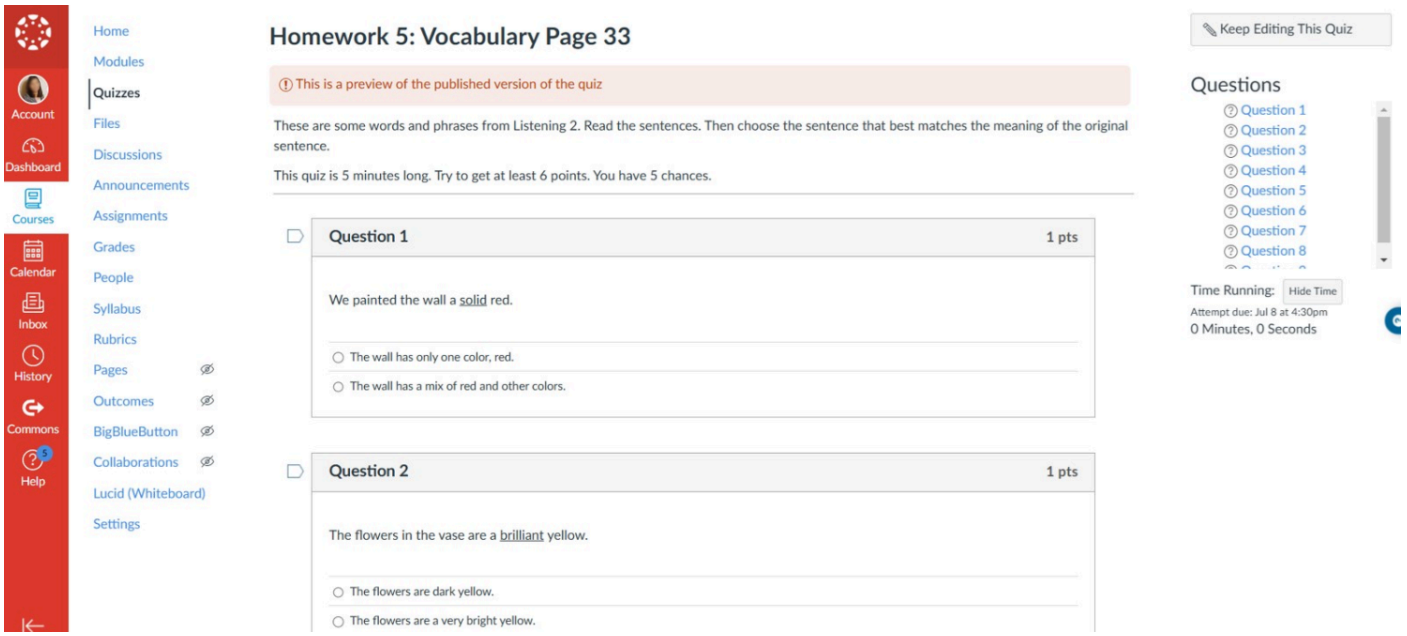
Appendix A1

Example of Interventions 1: Vocabulary Quiz

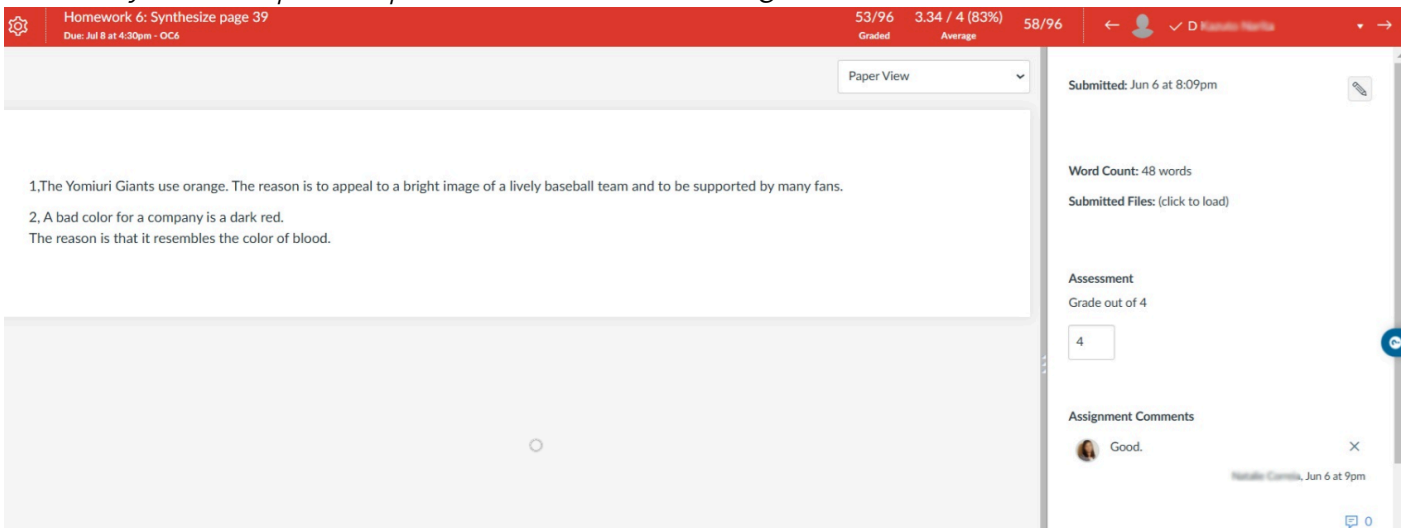
Online vocabulary quiz using LMS "Canvas"



Appendix A2

Example of Interventions 2: Discussion Sentences

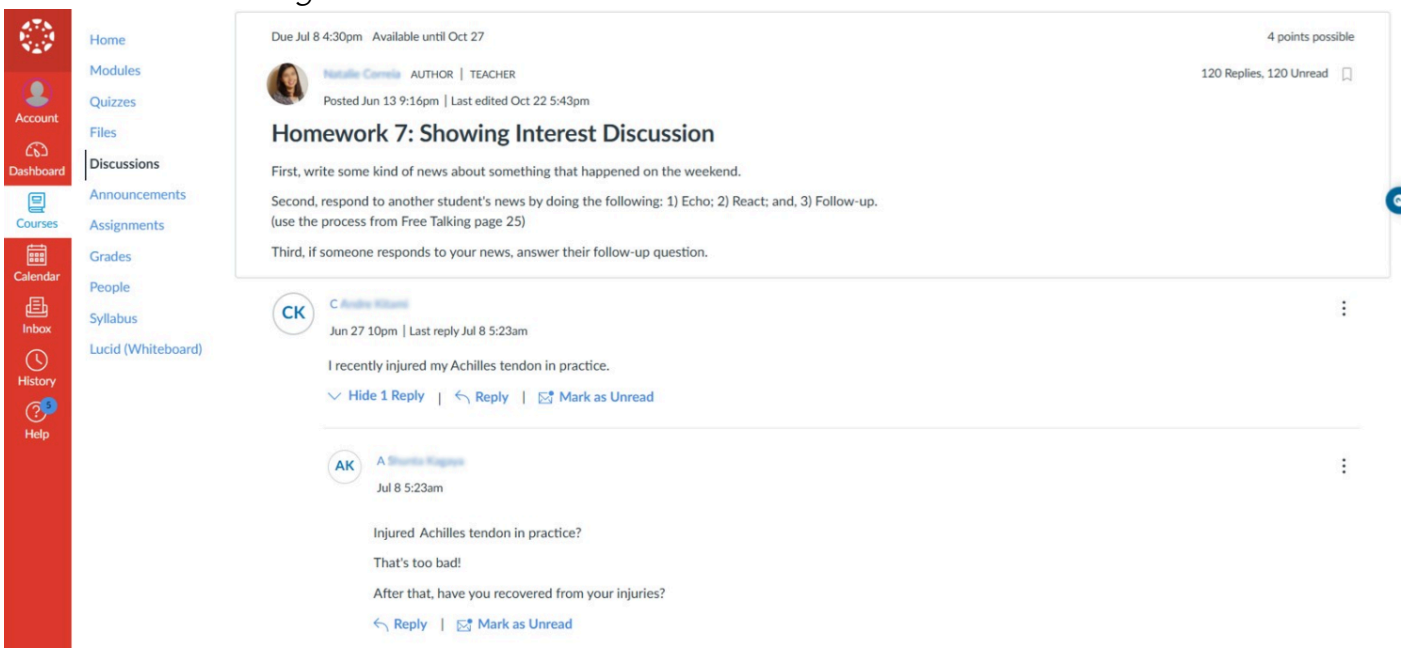
Pre-activity sentence practice prior to class discussion using LMS "Canvas"



Appendix A3

Example of Interventions 3: Discussion Forums

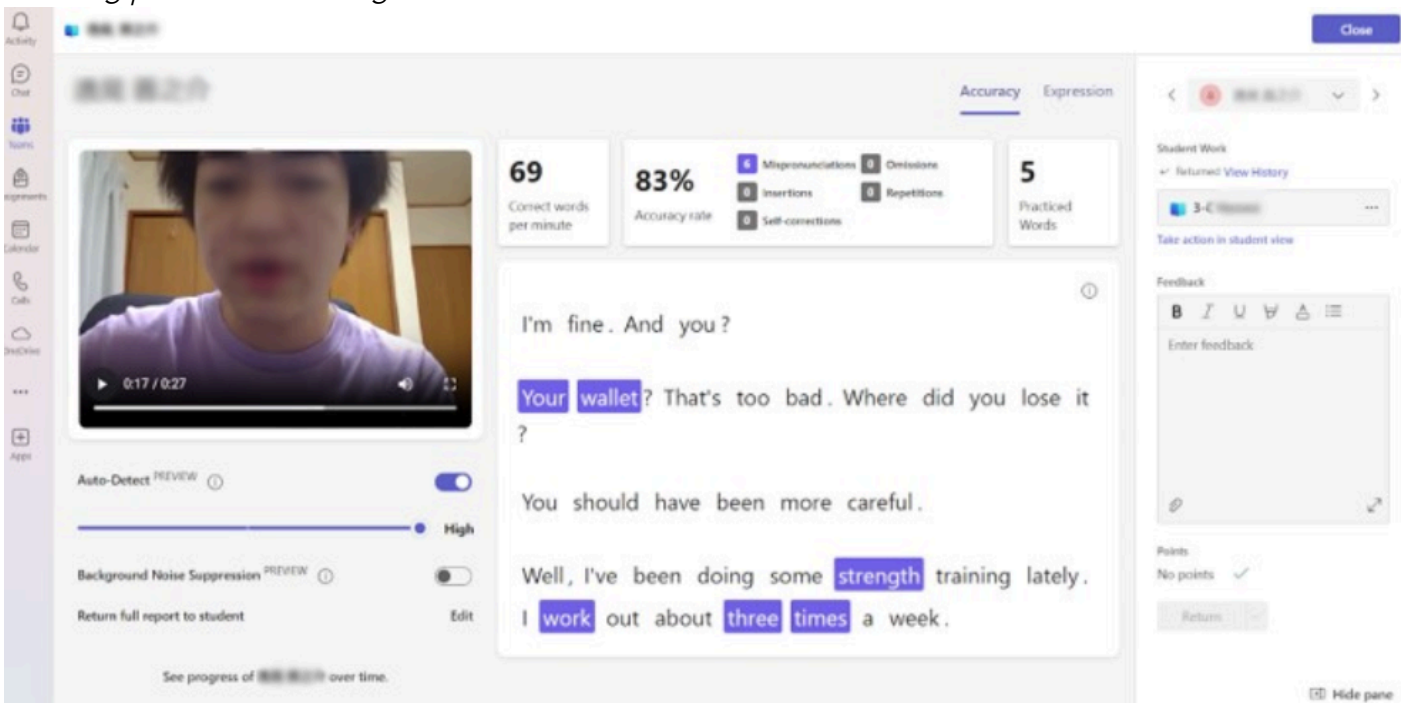
Discussion forums using LMS "Canvas"



Appendix A4

Example of Interventions 4: AI Pronunciation Check

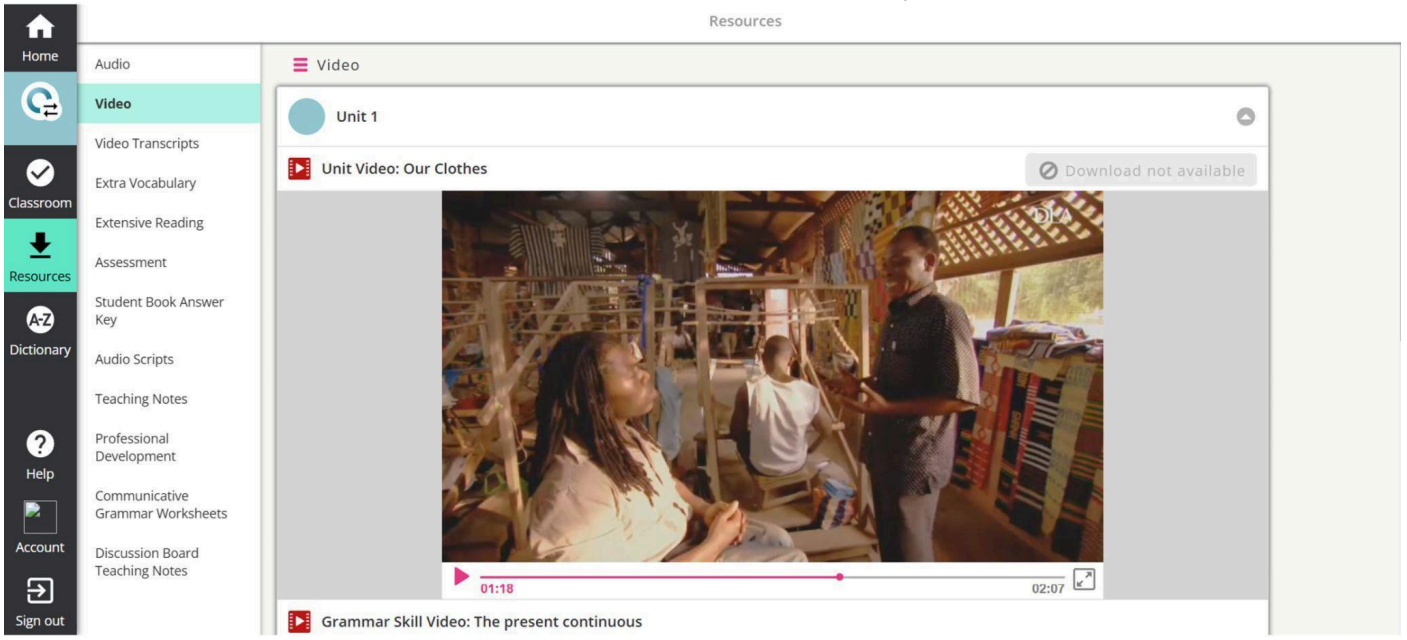
Checking pronunciation using "Microsoft Teams"



Appendix A5

Example of Interventions 5: Watching Videos

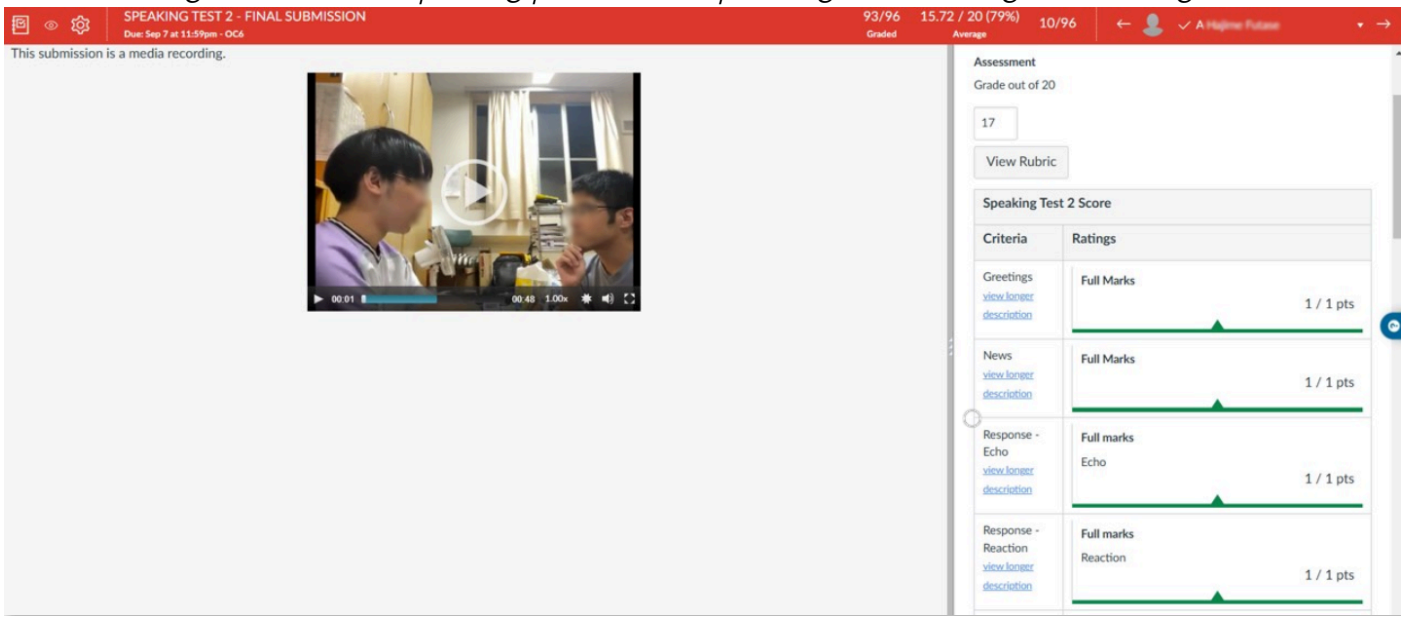
Using audiovisual materials from the textbook "Q: Skills for Success" published by Oxford University Press



Appendix A6

Example of Interventions 6: Taking Videos

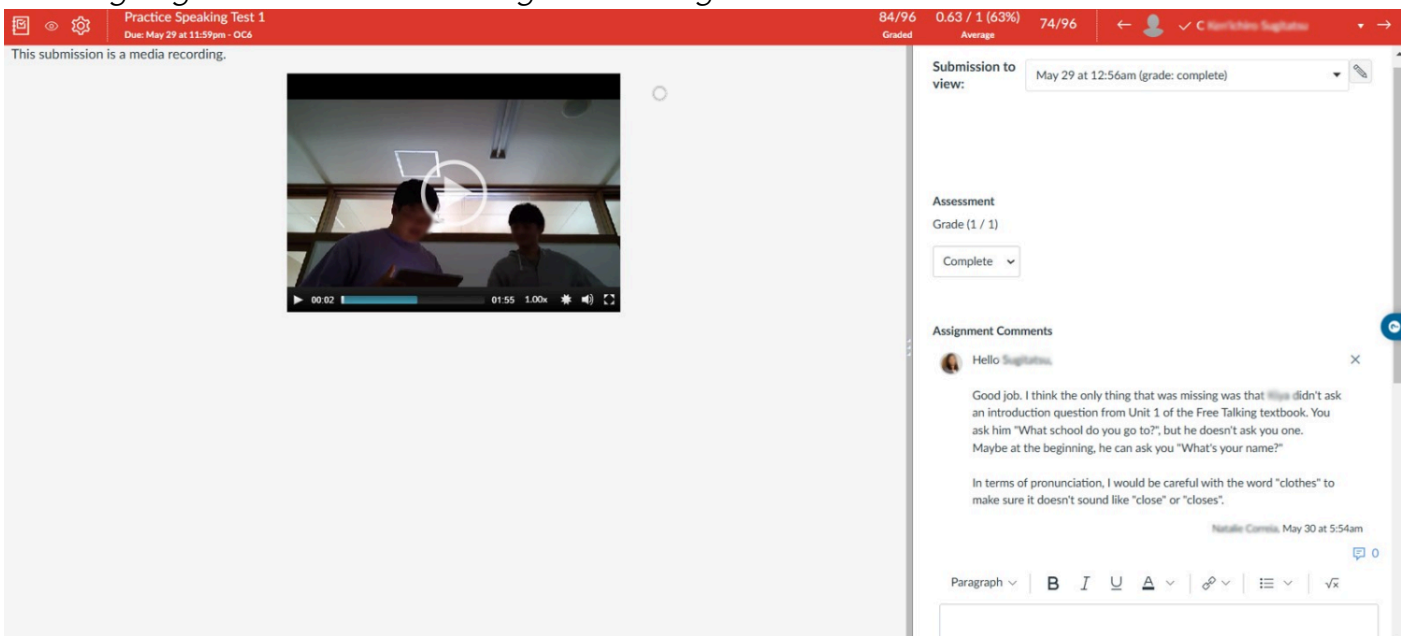
Students taking videos of their speaking practice and uploading them as assignments using LMS "Canvas"



Appendix A7

Example of Interventions 7: Online Feedback

Teacher giving feedback to student assignment through the LMS "Canvas"



Appendix B

Descriptive Statistics for Survey Items

Question	Statistic		df	p	Mean difference	SE difference	95% Confidence Interval Lower	95% Confidence Interval Upper
I imagine a day that I converse in English with international friends(1)	Student's t Mann-Whitney U	1.407 1819	128	0.162 0.173	0.3245 4.49E-05	0.231	-0.132	0.781
I imagine myself listening and speaking in English with ease in the future(2)	Student's t Mann-Whitney U	1.115 1836	126	0.267 0.33	0.2773 5.42E-05	0.249	-0.215	0.77
I imagine myself, in the future, where friends around me will admire me because I understand without any problems all kinds of English accents(3)	Student's t Mann-Whitney U	-0.177 2024	127	0.86 0.826	-0.0428 -3.23e−5	0.241	-0.52	0.435
I imagine a day friends will be proud of me because I use English to share my thoughts with the international community(4)	Student's t Mann-Whitney U	0.683 1960	127	0.496 0.595	0.1725 5.30E-05	0.253	-0.327	0.672
I think I should be able to speak fluently with English-speaking friends(5)	Student's t Mann-Whitney U	0.4086 1957	127	0.684 0.556	0.0797 7.04E-05	0.195	-0.306	0.466
I think that I should be able to easily converse with others in English(6)	Student's t Mann-Whitney U	0.7998 2004	127	0.425 0.728	0.1478 4.37E-05	0.185	-0.218	0.514
People around me think that my English speaking needs to be better trained(7)	Student's t Mann-Whitney U	0.0759 2027	127	0.94 0.835	0.0174 4.47E-05	0.229	-0.436	0.471
People around me think that I should talk in English with international friends(8)	Student's t Mann-Whitney U	0.9988 1894	127	0.32 0.385	0.1855 8.37E-06	0.186	-0.182	0.553
I am never quite sure of myself when I am speaking in English class(9)	Student's t Mann-Whitney U	-1.98 1732	127	0.05 0.096	-0.418 -2.88e−5	0.211	-0.836	-3.25e−5
I panic when I know that I'm going to be called on in English class(10)	Student's t Mann-Whitney U	-2.11 1645	127	0.037 0.04	-0.504 -1	0.239	-0.976	-0.03145
I worry about the consequences of failing my English class(11)	Student's t Mann-Whitney U	-1.77 1741	128	0.079 0.083	-0.464 -4.23e−5	0.262	-0.982	0.05379
It embarrasses me to volunteer answers in English class(12)	Student's t Mann-Whitney U	-3.35 1441	128	0.001 0.002	-0.748 -1	0.223	-1.19	-0.30565

Even if I am prepared for class, I feel anxious about speaking(13)	Student's t Mann-Whitney U	-1.91 1741	128	0.058 0.081	-0.402 -2.93e−5	0.21	-0.819	0.0136
I often feel like not going to English class(14)	Student's t Mann-Whitney U	-1.58 1787	128	0.116 0.126	-0.384 -3.63e−5	0.242	-0.864	0.09563
I am afraid that my English teacher is going to correct every mistake I make(15)	Student's t Mann-Whitney U	-2.15 1684	128	0.033 0.039	-0.407 -3.75e−5	0.189	-0.782	-0.03285
I feel very self-conscious about speaking English in front of other students(16)	Student's t Mann-Whitney U	-2.45 1581	128	0.016 0.012	-0.565 -1	0.231	-1.021	-0.10854
English class moves very quickly, and I am worried I can't keep up(17)	Student's t Mann-Whitney U	-2.53 1572	128	0.012 0.011	-0.577 -1	0.228	-1.027	-0.12633
I get nervous when I don't understand everything the teacher says(18)	Student's t Mann-Whitney U	-1.99 1690	128	0.049 0.049	-0.471 -1	0.237	-0.939	-0.0024
I am worried I don't know how to interact with native speakers of English(19)	Student's t Mann-Whitney U	-1.17 1867	128	0.244 0.252	-0.25 -2.24e−5	0.214	-0.674	0.17325
I get nervous when the teacher asks questions which I haven't prepared for in advance(20)	Student's t Mann-Whitney U	-1.04 1842	127	0.299 0.266	-0.241 -6.83e−6	0.231	-0.697	0.21599
I get nervous and confused when I am speaking in English class(21)	Student's t Mann-Whitney U	-2.39 1577	127	0.018 0.017	-0.533 -1	0.222	-0.973	-0.09245
I am worried about pronouncing words incorrectly when I present(22)	Student's t Mann-Whitney U	-1.92 1685	127	0.057 0.062	-0.465 -5.21e−5	0.242	-0.944	0.01399
I get nervous when the teacher says I will have to present in the next class(23)	Student's t Mann-Whitney U	-1.6 1750	127	0.113 0.122	-0.404 -4.88e−5	0.253	-0.904	0.09661
I am upset that my speaking skills are being evaluated(24)	Student's t Mann-Whitney U	-1.45 1759	127	0.148 0.133	-0.337 -4.28e−5	0.232	-0.795	0.12145
I am anxious about being able to complete all the work assigned in English(25)	Student's t Mann-Whitney U	-2.4 1526	126	0.018 0.012	-0.547 -1	0.228	-0.997	-0.09677
I have often used ICT for my classes to complete work(26)	Student's t Mann-Whitney U	4.282 1246	127	< .001 <.001	1.0601 1	0.248	0.57	1.55
I have not had trouble using ICT for my classes(27)	Student's t Mann-Whitney U	3.082 1457	127	0.003 0.003	0.6667 1	0.216	0.239	1.095
I have often used online platforms / LMS for my classes(28)	Student's t Mann-Whitney U	4.438 1235	127	< .001 <.001	0.9674 1	0.218	0.536	1.399
I have not had trouble using online platforms / LMS for my classes(29)	Student's t Mann-Whitney U	2.584 1570	128	0.011 0.009	0.5087 1	0.197	0.119	0.898
I am confident that I can use online platforms / LMS to complete tasks(30)	Student's t Mann-Whitney U	2.725 1534	128	0.007 0.006	0.5685 1	0.209	0.156	0.981
I think using online platforms / LMS for English lessons is a good idea(31)	Student's t Mann-Whitney U	0.686 1937	128	0.494 0.413	0.1349 1.98E-05	0.197	-0.254	0.524
I think using ICT can improve my speaking skills(32)	Student's t Mann-Whitney U	0.831 1897	127	0.408 0.381	0.1825 5.05E-05	0.22	-0.252	0.617
I think using ICT can improve my listening skills(33)	Student's t Mann-Whitney U	1.468 1819	128	0.145	0.302 0.16	0.206	-0.105	0.709
I think using ICT can make face-to-face classes run more smoothly(34)	Student's t Mann-Whitney U	0.3 2027	128	0.764	0.0601 3.87E-05	0.2	-0.336	0.456
I think translation tools have more advantages than disadvantages(35)	Student's t Mann-Whitney U	0.43 2025	128	0.668	0.0903 7.91E-05	0.21	-0.325	0.506
I think transcription tools have more advantages than disadvantages(36)	Student's t Mann-Whitney U	0.434 2003	128	0.665	0.0879 8.57E-05	0.203	-0.313	0.489
I don't think using ICT for class will be a distraction for me(37)	Student's t Mann-Whitney U	0.851 1883	127	0.396	0.1906 7.96E-05	0.224	-0.252	0.634
I am not concerned about being able to access the online platforms / LMS (low Wi-Fi signal, etc)(38)	Student's t Mann-Whitney U	-1.248 1829	128	0.214	-0.3001 -6.79e−5	0.241	-0.776	0.176
I am not concerned about the effect of ICT on my health (worsening eyesight, etc)(39)	Student's t Mann-Whitney U	0.429 2027	128	0.668	0.0991 1.12E-05	0.231	-0.357	0.556

Appendix C

Descriptive statistics of items 40-47 on the post-intervention survey

Question	HS Mean	UNI Mean	Overall Mean	SD
(40-a)I think the following were useful in making me feel more confident to speak in class: vocabulary quizzes	3.87	3.97	3.93	1.075
(40-b)I think the following were useful in making me feel more confident to speak in class: discussion sentences	3.94	4.11	4.03	0.954
(40-c)I think the following were useful in making me feel more confident to speak in class: discussion forums – with other students	3.74	4.05	3.91	1.108
(40-d)I think the following were useful in making me feel more confident to speak in class: Microsoft Teams – AI Pronunciation Check	3.71	3.87	3.8	1.183
(40-e)I think the following were useful in making me feel more confident to speak in class: watching videos	3.58	3.84	3.72	1.069
(40-f)I think the following were useful in making me feel more confident to speak in class: taking videos	3.45	3.79	3.64	1.212
(40-g)I think the following were useful in making me feel more confident to speak in class: receiving feedback	3.94	4.00	3.97	1.26
(41-a)I think the following were useful in making me feel more confident for the written test: vocabulary quizzes	4.00	4.21	4.12	1.078
(41-b)I think the following were useful in making me feel more confident for the written test: discussion sentences	4.03	4.18	4.12	1.051
(41-c)I think the following were useful in making me feel more confident for the written test: discussion forums – with other students	3.52	3.82	3.68	1.169
(41-d)I think the following were useful in making me feel more confident for the written test: Microsoft Teams – AI Pronunciation Check	3.61	3.55	3.58	1.253
(41-e)I think the following were useful in making me feel more confident for the written test: watching videos	3.58	3.82	3.71	1.164
(41-f)I think the following were useful in making me feel more confident for the written test: taking videos	3.45	3.45	3.45	1.323
(41-g)I think the following were useful in making me feel more confident for the written test: receiving feedback	4.13	4.18	4.16	0.994
(42-a) I think the following were useful in making me feel more confident for the speaking test: vocabulary quizzes	3.77	3.97	3.88	1.105
(42-b) I think the following were useful in making me feel more confident for the speaking test: discussion sentences	4.03	4.18	4.12	1.037
(42-c) I think the following were useful in making me feel more confident for the speaking test: discussion forums – with other students	4.00	4.21	4.12	1.078
(42-d) I think the following were useful in making me feel more confident for the speaking test: Microsoft Teams – AI Pronunciation Check	3.90	4.16	4.04	1.143
(42-e) I think the following were useful in making me feel more confident for the speaking test: watching videos	3.68	4.05	3.88	1.065
(42-f) I think the following were useful in making me feel more confident for the speaking test: taking videos	3.81	4.08	3.96	1.156
(42-g) I think the following were useful in making me feel more confident for the speaking test: receiving feedback	4.06	4.26	4.17	1.028
(43-a) I think the following made me feel more supported and/or allowed my speaking levels to be improved: vocabulary quizzes	3.74	4.18	3.99	1.091
(43-b)I think the following made me feel more supported and/or allowed my speaking levels to be improved: discussion sentences	3.65	4.08	3.88	1.119
(43-c)I think the following made me feel more supported and/or allowed my speaking levels to be improved: discussion forums – with other students	3.90	4.29	4.12	1.051
(43-d)I think the following made me feel more supported and/or allowed my speaking levels to be improved: Microsoft Teams – AI Pronunciation Check	3.84	4.26	4.07	1.102
(43-e)I think the following made me feel more supported and/or allowed my speaking levels to be improved.: watching videos	3.71	4.18	3.97	1.043
(43-f) I think the following made me feel more supported and/or allowed my speaking levels to be improved: taking videos	3.71	4.08	3.91	1.16
(43-g) I think the following made me feel more supported and/or allowed my speaking levels to be improved: receiving feedback	3.94	4.26	4.12	1.145
(44-a) I think the following were good for me to understand a clear image of an English speaker: vocabulary quizzes	3.58	3.87	3.74	0.98

(44-b) I think the following were good for me to understand a clear image of an English speaker: discussion sentences	3.74	3.95	3.86	1.075
(44-c) I think the following were good for me to understand a clear image of an English speaker: discussion forums – with other students	3.68	3.97	3.84	1.171
(44-d) I think the following were good for me to understand a clear image of an English speaker: Microsoft Teams – AI Pronunciation Check	3.52	4.03	3.80	1.208
(44-e) I think the following were good for me to understand a clear image of an English speaker: watching videos	3.58	4.11	3.87	1.162
(44-f) I think the following were good for me to understand a clear image of an English speaker: taking videos	3.45	3.79	3.64	1.224
(44-g)I think the following were good for me to understand a clear image of an English speaker: receiving feedback	3.68	4.18	3.96	1.077
(45-a) I think the following allows me to get a better image of what kind of English speaker I might become: vocabulary quizzes	3.68	3.76	3.72	1.123
(44-b) I think the following allows me to get a better image of what kind of English speaker I might become: discussion sentences	3.77	4.08	3.94	1.11
(45-c) I think the following allows me to get a better image of what kind of English speaker I might become: discussion forums – with other students	3.81	4.05	3.94	1.097
(45-d) I think the following allows me to get a better image of what kind of English speaker I might become: Microsoft Teams – AI Pronunciation Check	3.74	4.05	3.91	1.197
(45-e) I think the following allows me to get a better image of what kind of English speaker I might become: watching videos	3.65	4.13	3.91	1.185
(45-f) I think the following allows me to get a better image of what kind of English speaker I might become: taking videos	3.42	3.92	3.7	1.24
(45-g) I think the following allows me to get a better image of what kind of English speaker I might become: receiving feedback	3.77	3.97	3.88	1.207
(46-a)I think the following were overall an interesting and engaging way to learn and practice English: vocabulary quizzes	3.97	4.26	4.13	1.042
(46-b) I think the following were overall an interesting and engaging way to learn and practice English: discussion sentences	3.61	4.16	3.91	1.134
(46-c) I think the following were overall an interesting and engaging way to learn and practice English: discussion forums – with other students	3.74	4.26	4.03	1.163
(46-d)I think the following were overall an interesting and engaging way to learn and practice English: Microsoft Teams – AI Pronunciation Check	3.77	4.16	3.99	1.182
(46-e) I think the following were overall an interesting and engaging way to learn and practice English: watching videos	3.71	4.14	3.94	1.145
(46-f)I think the following were overall an interesting and engaging way to learn and practice English: taking videos	3.58	3.97	3.80	1.279
(46-g)I think the following were overall an interesting and engaging way to learn and practice English: receiving feedback	4.03	4.29	4.17	1.014
(47-a) I think the following were overall useful: vocabulary quizzes	3.87	4.26	4.09	1.067
(47-b)I think the following were overall useful: discussion sentences	4.03	4.18	4.12	1.132
(47-c)I think the following were overall useful: discussion forums – with other students (47-c)	3.71	4.29	4.03	1.26
(47-d)I think the following were overall useful: Microsoft Teams – AI Pronunciation Check	3.71	4.21	3.99	1.219
(47-e)I think the following were overall useful: watching videos	3.77	4.05	3.93	1.229
(47-f)I think the following were overall useful: taking videos	3.58	3.87	3.74	1.325
(47-g)I think the following were overall useful: receiving feedback	3.90	4.29	4.12	1.092

Note. N = 69

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