

Factors Promoting Speech: Analysis of Output During Discussion Activities

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Abstract

Sixty-one junior high school students in Japan participated twice in an online English group conversation lesson. At the first half of a session, each student gave an individual presentation to a Filipino instructor and the other group members. At the second half of the session, they conducted discussions, where the instructor, as the facilitator, asked each student relevant questions. The present study first determined if there would be a change in the maximum number of words spoken in discussions between the first and second online English conversation lessons. As the result of a statistical analysis for the discussions, there was a significant difference between the maximum number of words spoken during the two discussions. Since a significant change was admitted, a further discussion was conducted to clarify the reasons for the change. The factors of the increase in words spoken were discussed in terms of willingness to communicate, having things to communicate, anxiety, confidence, and instructors' intervention. All of them were thought to affect the increase. The findings suggest that (1) it is important to set some activities for students to strengthen their own opinions about topics in advance and (2) it is effective not to end with a single practice but to provide at least two opportunities for the output and interaction with others.

Keywords: *impromptu conversation, willingness to communicate, having things to communicate, anxiety, self-confidence, instructors' intervention*

INTRODUCTION

The World Englishes Model categorizes countries that use English into three: the inner circle, the outer circle, and the expanding circle (Kachru, 1985). People in the countries of the expanding circle learn English as a foreign language. In these countries, English is basically not used outside the classrooms. Therefore, it is controversial as to how possible it is to secure opportunities to use English authentically. According to a study on EFL learners' environment conducted at an international university in Japan, students can find opportunities to use English outside of the classroom on campus at which there are international students. Unfortunately, those living off-campus have fewer opportunities (Lee, Browne, & Kusumoto, 2011). In reality, unless students personally strive to find such opportunities, it is quite rare to use English as a means of communication with people from other countries. Although assistant language teachers promote students' English use in class, providing individual students with experiences of output is limited especially when the class size is large.

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One possible solution to increase opportunities to speak English is to take advantage of online conversation lesson services. Rodrigues and Vethamani (2015) compare an online learning program and a general intensive English program at a university in Malaysia, indicating that the former enables greater language proficiency and stronger self-confidence than the latter. This result suggests possible development not just in English proficiency but in self-confidence when speaking with native speakers. Moreover, repetitive online video lessons with Filipino instructors, carried out at a junior college in Japan, promoted learners' confidence in English communication while suggesting the possibility of lowering their anxiety (Mita, 2014). In this way, there is a possibility that online conversation lessons facilitate improvement in speaking proficiency and such factors related to anxiety or confidence.

These kinds of affective factors are thought to be related to what is called "willingness to communicate" or WTC. MacIntyre, Clément, Dörnyei, Kimberly, and Noels (1998) define WTC as "a readiness to enter into discourse at a particular time with a specific person or persons, using a L2" (p.547). A person proficient in English does not necessarily make plenty of utterances due to the fact that skills or communicative competence is not the sole factor that promotes the readiness for discourse and enables speech. Additionally, Yashima (2001) proposes a notion called international posture, which encompasses attitudes toward "things outside of Japan" and international behavioral tendencies such as going abroad, doing international work, and coming into contact with people of other cultures. A study on senior high school students in Japan demonstrates that international posture leads not only to frequency of spontaneous communication inside and outside classrooms but also to motivation and WTC in a second language (L2) (Yashima, Zenuk-Nishide, & Shimizu, 2004). One of the subcategories of international posture is having things to communicate about (HTC), and there is a strong correlation between HTC and WTC (Yashima, 2009). A result of an experiment comparing a conversational activity and an information gap activity reveals that learners had more opportunities to produce more complex utterances in the conversational activity than the other (Nakahama, Tyler, & Van Lier, 2001). Since conversation is encouraged more when having a message to pass on, forming activities that require a great deal of meaning can lead to more active speech. For example, a discussion can be such an activity because it basically entails a specific theme where learners are supposed to have their own opinions.

Previous studies show that various factors including WTC, HTC, self-confidence, and anxiety make L2 speech production possible. However, there are few empirical studies that discuss a change in L2 speech production based on learners' utterances actually observed in an authentic communicative situation along with its related factors. All things considered, it seems to be beneficial to utilize online English conversation lesson services for the sake of securing opportunities to communicate learners' own messages to people from other countries.

Accordingly, the purpose of this study is to find out from practice what factors are involved when speech is promoted.

LITERATURE

Online English Conversation Lessons

Online English conversation service offers individual or group lessons in which they interact with an instructor or other students in English. This kind of communication is called computer-mediated communication (CMC). It is defined as human communication via computers whose emphasis is

on interaction. Video conferencing is a kind of synchronous computer-mediated communication (SCMC), while text-based CMC is called asynchronous computer-mediated communication (ACMC) (Higgins, 1991). Even text-based chatting can be a task to facilitate the negotiation of meaning, which allows more profound communication. For instance, a study conducted by Pellettieri (2000) reveals that task-based synchronous network-based communication like text-based chatting can promote the negotiation of meaning, stating that it is possible because text-based chatting is similar to oral interaction. It is natural to expect that video conferencing can have more positive effects. As a matter of fact, Sarré (2011) compares three CMC modes, discussion board (ACMC), text chat, and video conferencing, finding that video conferencing makes the most negotiation of meaning happen of all the three CMC modes.

Empirical research has been accumulated recently. Depending upon how it is used, English lessons through video conferencing are close enough to the ones in actual classrooms. Yanguas (2010) used the video conferencing application Skype to investigate how learners in the video and audio CMC groups negotiate for meaning during task-based interaction. Students in the computer lab utilized Skype to carry on their conversations. The results showed that for the oral CMC group, using Skype resulted in turn-taking patterns that resembled face-to-face turn-taking. As it is similar to face-to-face communication, improvements in English skills are expected. Nilayon and Brahmakasikara (2018) then looked at how video conferencing and social media technology can help Thai students improve their speaking skills. Six participants took advantage of a video conferencing application and a few other social media websites. They were evaluated on their speaking skills before, during, and after the practice with an interview also conducted. The results showed a significant improvement in lower-level participants, and most of them felt that this kind of method was effective in improving speaking skills. In addition, Iino and Yabuta (2016) conducted an empirical research on the effects of long-term practice of communicative and interactive English language instruction using web conferencing. University students participated in a group discussion composed of two students and one Filipino instructor. The results show that the experience of communicating with an English teacher in a foreign country with cognitively demanding content promotes the development of proficiency and speaking skills through the learning of English input, output, interactions, and perceptions.

While skills development has been acknowledged, there seems to be some influence of online oral communication on affective factors. Toyama, Mori, and Shintani (2017) conducted a short online English conversation group learning for university students with low English proficiency, and administered a pre- and post-test of English speaking skills and ratings as well as anxiety, self-efficacy, and motivation related to learning and using English. The results showed that speaking skills and English anxiety improved significantly, and a slight, but not significant, improvement was partially observed in self-efficacy and motivation for learning English.

It is also necessary to contemplate the influence of instructors' intervention. Tokeshi, Fewell, Tsukayama, and Kuckelman (2017) employed Skype for online English conversation as an individual learning method outside of classes at a university. One of the findings is that the students evaluated the instructors' scaffolding for them highly, presumably because the instructors provided positive support, and the instructor and students worked together to understand the communication.

Taking these things into account, discussions during online English conversation lessons are categorized into SCMC, and it seems adequate to expect developments not only in English proficiency but also in affective factors, discussing the relationships among them. However, many

of these researches are conducted on university students, so it is still controversial whether or not SCMC is effective for younger learners in the same way.

Affective Factors

As several previous practical studies above have reported, utterances are produced with certain levels of English proficiency and affective factors, influenced by a variety of outside environments including instructors' intervention. Figure 1 demonstrates the entire picture of the relationships between a L2 use and other factors (MacIntyre et al., 1998). Although few studies, as previously stated, have discussed how they were interrelated with each other based on actually observed utterances especially of young learners, Aoyama, Shimada, Kikuhara, and Sakai (2020) try to develop a L2 WTC model for junior high school students by analyzing a questionnaire surveys asking about L2 WTC, international posture, motivational intensity, and learners' perceived proficiency. The result demonstrates that the structure of the L2 WTC model was constant across learners of diverse educational levels, while relationship degrees were shown to differ between school levels.

International posture, mentioned above, is composed of five subcategories: intercultural approach (-avoidance) tendency, interest in international vocation, ethnocentrism, interest in foreign affairs, and having things to communicate (HTC) (Yashima, 2002; 2009). Watanabe (2017) conducted research on university students who took English speaking classes where message-level communication activities, not information-level, were the main focus. The results indicate that out of the five categories, there was a significant difference only in the degree of HTC between the beginning and the end of the semester. Importantly, the correlation between WTC and HTC was stronger than that of WTC and any other category of international posture.

Another important factor is self-confidence, which is located in Layer IV in Figure 1. Self-confidence is closely related to anxiety. Anxiety associated with learning a foreign language is referred as foreign language anxiety (FLA) (Horwitz, Horwitz, & Cope, 1986). Kalra and Siribud (2020) analyzed the results of a survey, reporting that anxiety causes problems related to self-confidence, which leads to hindrance of foreign language development. Král'ová and Sorádová (2015) also admits that anxiety negatively affects foreign language acquisition. Therefore, it is vital for teachers to consider how to minimize FLA in speaking (Masutani, 2021; Pappamihiel, 2002). Since there is a moderate correlation between self-confidence and speaking achievement (Tridinanti, 2018), teachers should deliberate their classes from these perspectives. One possible contribution to this is the utilization of video conferencing. Punar and Uzun (2019) compared English lessons on Skype to face-to-face English lessons for English learning adults, and analyzed the data statistically, finding that anxiety reduction was only observed in lessons on Skype. This implies that online English discussions are effective initial activities to lower speaking anxiety or influence self-confidence positively.

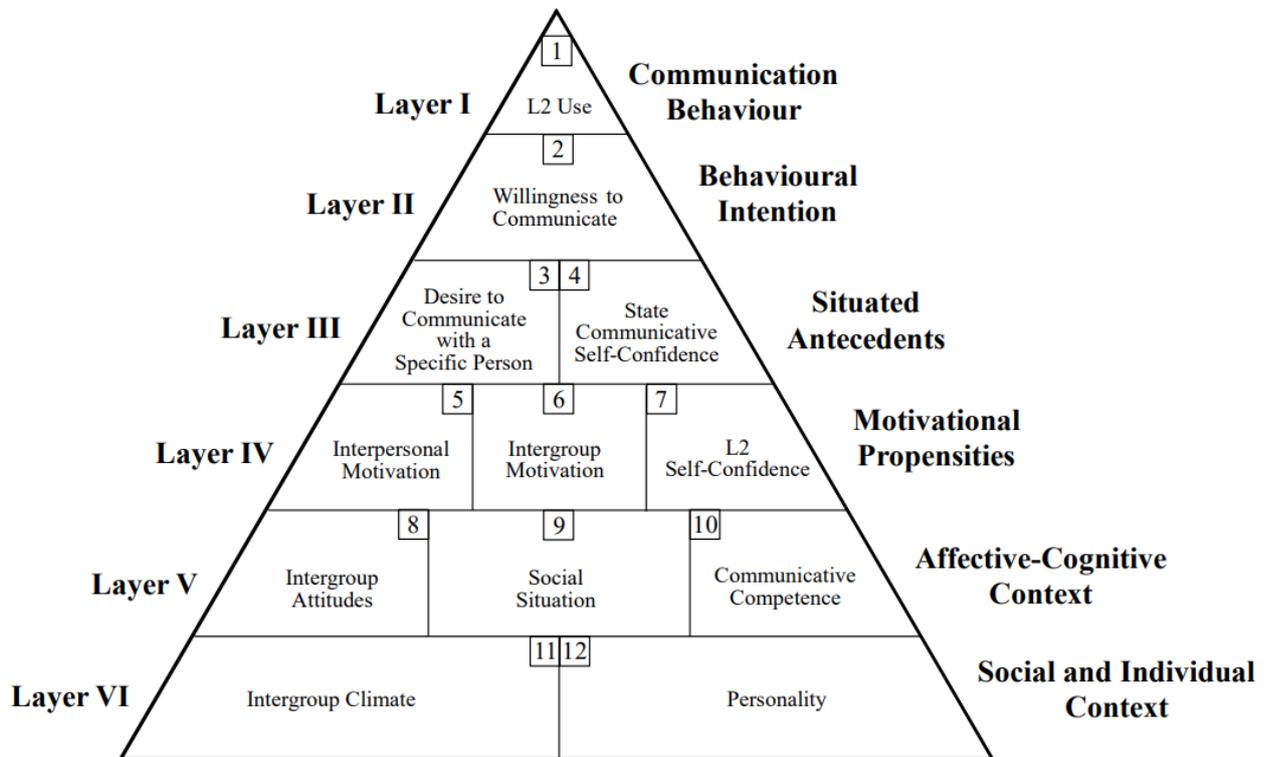


Figure 1: Heuristic Model of Variables Influencing WTC (MacIntyre et al., 1998, p.547)

Instructor’s Intervention

As discussed above, it is necessary for teachers to envision effective ways to promote students’ utterances by taking their FLA for speaking into consideration. During discussions, instructors frequently work as facilitators, and try to analyze students’ proficiency or difficulties and help students think or speak on a certain topic. This is endorsed by the notion called the zone of proximal development. Vygotsky (1978) defines it as follows.

the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (p.78)

Scaffolding by the instructors is helpful in the zone of proximal development. Wood, Bruner, and Ross (1976) depict scaffolding as follows.

This scaffolding consists essentially of the adult “controlling” those elements of the task that are initially beyond the learner’s capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence. (p.90)

Applying these to discussions, provided that the instructors ask some questions and students have difficulties answering, the instructors cast supplemental questions to them so that the students can answer them more easily. Such questions should encourage students to answer. Concretely, questions with interpersonal projection, “a meaning-making resource used to invite the addressee to express a person's point of view” (p.2), induces higher WTC than ones without it (Yang & Yin, 2022). For example, in their experiment, they compared “Do you agree that sleep is a waste of time?” and “Is sleep a waste of time?”, or “Will healthy people be affected if they don’t get enough sleep, what’s your opinion?” and “Will healthy people be affected if they don’t get enough sleep?”. The former are questions with international projection, and the latter are ones without. It is important to use such phrases as “Do you agree?” and “What’s your opinion?” to get the students more involved in the discussions. Zarrinabadi (2013) also acknowledges that teachers’ support affects students’ WTC positively. In fact, there are studies focusing on students’ WTC in classroom settings, particularly referred to as situated WTC. Peng and Woodrow (2010) reveal that teachers’ support, a kind of classroom environment factor, contributes to augmentation of such situated WTC, showing its large effect size by statistical analysis.

METHODS

From November 2021 through February 2022, junior high school students in Japan worked on their presentations under the theme of SDGs (Sustainable Development Goals) in English classes. Two online English conversation lessons were provided as places for output of the presentations and interaction with instructors from other countries in the following discussions. Questionnaire surveys were administered before the first online lesson and after each lesson for a total of three times. Table 1 summarizes the procedure of the present study.

Table 1. Procedure of the Present Study

Date	Instrument
November 2021 – January 2022	Ten English lessons in the classroom
January 26, 2022	Survey I
February 3, 2022	Online lesson 1 (joined at home)
February 4, 2022	Survey II
February 7, 2022	An English lesson
February 10, 2022	Online lesson 2 (join in the classroom)
February 11, 2022	Survey III

Participants

The study was conducted with students at a junior high school affiliated with a national university in Japan. There were four classes per grade, with 36 students per class. No student was a native speaker of English or had a near-native level of English proficiency. Many of them had studied English privately at cram schools after entering junior high school, but those who were learning English conversation were limited. The lessons were centered on the textbooks, and output

activities such as those in this study were carried out as needed to deepen the learning of contents and develop skills.

In the English department at the school, one Japanese Teacher of English (JTE) was in charge of each grade, and one Assistant Language Teacher (ALT) was in charge of each grade once a week. The JTEs in charge of each grade planned the year's instruction, and the JTE (the author) actually prepared the unit plan for the unit involved in this practice. In addition, since the same subjects were assigned to each class on the daily schedule, though the order of classes was different, the same teacher gave the same lesson to all the four classes on the same day. The same was true in this practice, and there were no differences in terms of instructional content and procedures among the classes.

Practice

Before the first online lesson, they answered the first questionnaire. This practice consisted of face-to-face English lessons in the classroom and the online lessons. They spent ten English lessons in which they studied English based on the contents of the textbook that they usually used. The theme was related to SDGs. The JTE presented what is called the big question "What's your idea for SDGs?" at the very beginning of the first lesson. The students started to think of their own answers for the question as they learned English and its contents. As a main activity in the lessons, students worked on retelling practice based on the contents from the textbook, which encouraged their thoughts for the big question. After that, they created an oral presentation of their ideas for SDGs, and practiced making a speech for the presentation individually.

The procedure and the roles of the instructors during the online lessons were arranged by the authors and representatives of the company that provided the online English conversation service. Therefore, there were no major differences among the instructors in how they acted during the lessons. Next, they formed groups of four students for the first online lesson. The students joined the first online lesson at home because the school was closed for COVID-19. In the lesson, there was one Filipino instructor per group. Each instructor played the role of a facilitator who occasionally supported the students depending on the situations. The lesson started with self-introduction (5 minutes), oral presentations on their ideas for SDGs (10 minutes), and discussions about issues related to each student's presentations (15 minutes). In total, one lesson lasted for 30 minutes. In the discussion part, the instructor would ask questions to each student while the students tried to answer. One typical example was when the instructor described a point of someone's presentation and asked the questions "Do you agree with this idea?" or "Why do you think so?" The instructors or other students did not interfere with a student speaking. They casted supplemental questions only when the speaker had some difficulties in speaking. After the first lesson, the students answered the second questionnaire.

There was a face-to-face lesson between the first and the second online lessons, where they reflected on themselves, adjusted their presentations if necessary, and formed groups of four students again. The procedure and other conditions were the same as the ones in the first lesson, but this time, they joined the lesson in their classrooms at school. In the end, they answered the third questionnaire.

Instruments

The first and second online lessons consisted of the same procedure; self-introduction, oral-presentations, and discussions. This paper focused on the discussion parts where each student had opportunities to speak English on the spot. However, as opposed to Yashima, MacIntyre, and Ikeda (2018), in which university students were encouraged to initiate communication, the present study did not adopt the same procedures on account that most of the junior high school students were not skilled enough, not used to speaking with foreigners, and it was assumed that encouraging them to do so would lead to stagnation of the lessons, particularly conducted online.

The maximum number of words spoken (MW) during each discussion part was the target of analysis since the total or average number of words spoken were strongly affected by the number of the instructors' questions or short answers such as "Yes" or "No". Even in the format that an instructor asks a question and a student answers, it is possible to anticipate that the student with high WTC or other related factors utters more words than those who do not.

Shortened words like "don't" or "isn't" were regarded as one word. Dysfluency such as repetition of the same words was not counted double. For example, "I think... I think his idea is interesting." was counted as six words. Grammatical mistakes were not considered and counted as it was. For example, "*I have not idea." (I don't have any ideas.) was counted as four words.

Each questionnaire survey included questions about WTC and HTC. The question items from Yashima (2009) were adopted (Appendix). The first survey asked what kinds of anxiety the students had related to discussions in English, and the third survey asked which of the anxieties were relieved. The second and the third surveys asked the participants to evaluate their change in their self-confidence as to speaking and listening to English. In addition, it also inquired how instructors' intervention such as comments and questions were helpful for learning or preparation of English, presentations, or discussions. Moreover, the participants assessed the impact of related classes, presentations, discussions, and classmates respectively on their change in WTC. Table 2 summarizes the contents of questions in Survey I, II, and III.

Table 2. Which Questionnaire Survey Contains Questions of Which Variables

Variables	Survey I	Survey II	Survey III
WTC	○	○	○
HTC	○	○	○
Anxiety	○	-	○
Self-confidence	-	○	○
Instructors' intervention	-	-	○

Analyses

Microsoft Excel sheet created by Mizumoto and Takeuchi (2008) was employed to calculate effect size, and IBM SPSS Statistics (ver.24) for other parts of statistical analyses. Kolmogorov-Smirnov tests were administered to verify normality for each data set. Depending upon the results of the tests, either parametric or non-parametric tests were selected.

As to descriptive texts gained from the questionnaire surveys, a qualitative data software KH Coder (Higuchi, 2020) was utilized to conduct correspondence analysis and co-occurrence network analysis.

Finally, all results were synthesized to examine changes in speech by referring to the related factors. The whole picture of the analyses is shown in Table 3.

Table 3. Data Processing Methods

Variables	Adopted Processing
MW	Wilcoxon signed-rank test
WTC	One-way repeated measures ANOVA / Descriptive statistics
HTC	Friedman test / Wilcoxon signed-rank test
Anxiety	Descriptive statistics
Self-confidence	Descriptive statistics / Correspondence analysis
Instructors' intervention	Descriptive statistics / Co-occurrence network analysis

RESULTS

The Maximum Number of Words Spoken

Table 4 shows descriptive statistics for the maximum number of words spoken in each discussion, and Figure 2 illustrates the comparison between the two data sets in box plot. It is noted that even though there seems to be outliers (71 and 68 points), they were not omitted for further analyses because they did not affect the entire results of the analyses.

Table 4. Descriptive Statistics for the Maximum Number of Words Spoken in Each Discussion

	Minimum	Maximum	Mean	SD	Variance	Skewness	Kurtosis
MW 1	1	71	15.16	10.785	116.306	2.361	10.801
MW 2	1	68	20.02	11.941	142.583	1.465	3.470

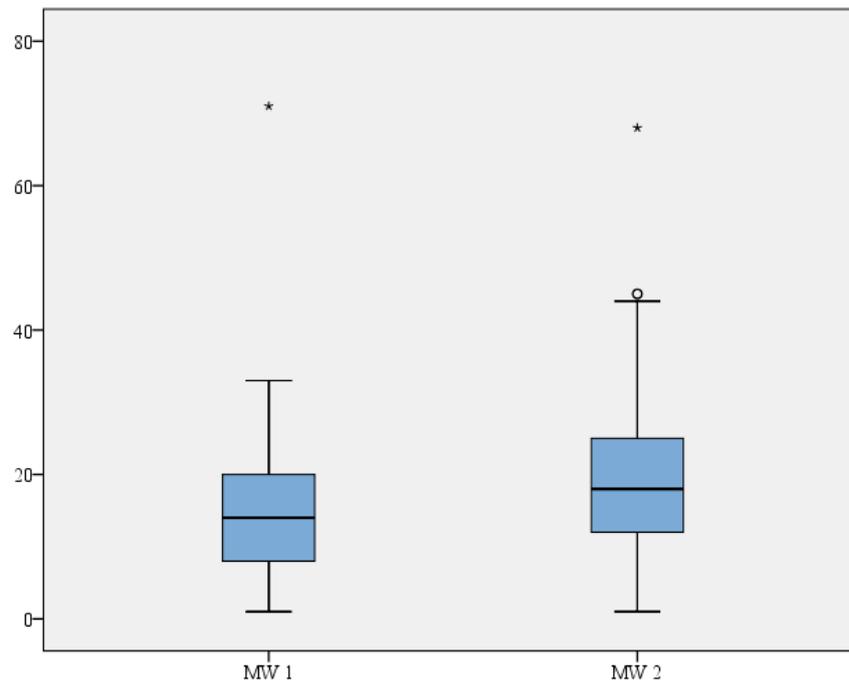


Figure 2: Box Plot for the Maximum Number of Words Spoken in Each Discussion

A Kolmogorov-Smirnov test, which examines normality, did not indicate that MW in the second discussion was consistent with a normal distribution ($p = .005$), so Wilcoxon signed-rank test, a kind of non-parametric test, was conducted in order to confirm whether there would be a significant difference between MW in the first discussion and that in the second discussion. As a result, there was a significant difference between them ($z = 4.294$, $p = .000$, $r = .55$). Therefore, MW increased significantly from the first discussion to the second.

Willingness to Communicate

Table 5 shows the descriptive statistics for the total points of WTC. The change of the total points of WTC related questions was tested by a one-way repeated measures ANOVA since a Kolmogorov-Smirnov test indicated that all the data were consistent with a normal distribution ($p > .005$). Mauchly's test of sphericity indicates that the sphericity assumption holds ($p = .028$), so Greenhouse-Geisser's Epsilon with modified degrees of freedom was adopted. The result as in Table 6 shows that there was no significant difference among the total points of WTC ($F(2, 120) = 1.300$, $p = .275$, partial $\eta^2 = .021$).

Table 5. Descriptive Statistics for the Total Points of WTC

	Minimum	Maximum	Mean	SD	Variance	Skewness	Kurtosis
Survey I	19	48	32.66	5.933	35.196	0.130	-0.108
Survey II	12	48	31.85	6.287	39.528	-0.530	1.109
Survey III	14	48	32.67	7.002	49.024	-0.484	-0.037

Table 6. The Result of a One-Way Repeated Measures ANOVA for the Total Points of WTC

	Source	Type III SS	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>	partial η^2
WTC	Sphericity Assumed	26.787	2	13.393	1.300	0.276	0.021
	Greenhouse-Geisser	26.787	1.795	14.924	1.300	0.275	0.021
	Huynh-Feldt	26.787	1.847	14.505	1.300	0.276	0.021
	Lower-bound	26.787	1.000	26.787	1.300	0.259	0.021
Error (WTC)	Sphericity Assumed	1236.546	120	10.305			
	Greenhouse-Geisser	1236.546	107.695	11.482			
	Huynh-Feldt	1236.546	110.804	11.160			
	Lower-bound	1236.546	60.000	20.609			

On the other hand, 84% of the students evaluated themselves positively by reporting the changes in WTC, according to the result of the question with six-point scale “Compared to before, are you more willing to communicate with others in English?” ($M = 4.21$, $SD = 0.878$). For the purpose of identifying the factors that had influenced the change in WTC, the students scored each variable on a five-point scale (Table 7). The highest mean was “experience in discussions with people from other countries”, and the second highest was “questions, comments, etc. from the instructor”.

Table 7. Descriptive Statistics for Factors Influencing Changes in the WTC

Variables	Mean	SD
Related classes for this activity	3.15	1.078
Experience in giving presentations to people from other countries	3.34	1.031
Experience in discussions with people from other countries	3.57	1.117
Questions, comments, etc. from the instructor	3.43	1.176
Watching classmates’ presentation	3.16	0.934
Watching classmates’ discussions	3.30	0.937
Presentation theme	3.08	0.900
Content of discussion	3.28	0.897

Having Things to Communicate

The change of the total points of HTC related questions was tested by the Friedman test as a Kolmogorov-Smirnov test did not indicate that the second survey was consistent with a normal distribution ($p = .002$). The result shows that there was a significant difference among the total points of HTC related questions ($\chi^2 (2) = 9.484$, $p = .009$).

Wilcoxon signed-rank test as a post-hoc test was conducted to examine between which groups there would be a significant difference, and p -value was adjusted by Bonferroni correction. The

result shows that while there was no significant difference between the first and the second survey ($z = -.050$, $p = .960$, $r = .01$), there were significant differences between the first and the third survey ($z = 2.510$, $p = .012$, $r = .32$), and the second and the third survey ($z = 2.836$, $p = .005$, $r = .36$).

Furthermore, the change of each variable of HTC was tested by Friedman test as a Kolmogorov-Smirnov test indicated that all the data were not consistent with a normal distribution ($p < .005$). Since pairwise comparisons indicated that there was a significant difference in the results of the variable “(3) I have ideas about international issues, such as environmental issues and north-south issues.” Thus, the Wilcoxon signed-rank test as a post-hoc test was conducted, resulting in the suggestions that there were significant differences between the first and the third survey in the variable (3) ($z = 3.568$, $p = .000$, $r = .46$). Table 8 summarizes the descriptive statistics about HTC, where each number in the first column represents Variables (1) ~ (6) in the appendix. Figure 3 illustrates the change among the three surveys.

Table 8. Descriptive Statistics for Each Variable and the Total Points of HTC

	Min.	Max.	Mean	SD	Variance	Skewness	Kurtosis
Survey I_1	1	6	3.56	1.162	1.351	-0.111	-0.233
Survey I_2	1	6	3.39	1.159	1.343	0.301	0.348
Survey I_3	1	6	3.74	1.031	1.063	-0.388	0.614
Survey I_4	1	6	3.05	1.322	1.748	0.533	-0.301
Survey I_5	2	6	3.87	1.087	1.183	-0.053	-0.435
Survey I_6	1	6	3.23	1.627	2.646	0.072	-1.107
Survey II_1	1	6	3.57	1.161	1.349	-0.284	0.305
Survey II_2	1	5	3.23	1.071	1.146	-0.310	-0.152
Survey II_3	2	6	3.95	0.865	0.748	-0.383	0.190
Survey II_4	1	6	2.77	1.322	1.746	0.619	-0.216
Survey II_5	1	6	3.90	1.136	1.290	-0.295	0.071
Survey II_6	1	6	3.34	1.277	1.630	-0.484	-0.193
Survey III_1	1	6	3.69	1.162	1.351	-0.410	0.401
Survey III_2	1	6	3.59	1.086	1.179	-0.320	0.089
Survey III_3	2	6	4.15	0.872	0.761	0.171	-0.069
Survey III_4	1	6	3.00	1.225	1.500	0.394	-0.356
Survey III_5	1	6	3.87	1.103	1.216	-0.426	-0.003
Survey III_6	1	6	3.54	1.490	2.219	-0.223	-0.850
Survey I	13	32	20.84	4.634	21.473	0.361	-0.314
Survey II	8	32	20.77	4.444	19.746	-0.419	0.947
Survey III	12	30	21.84	4.042	16.339	-0.137	-0.286

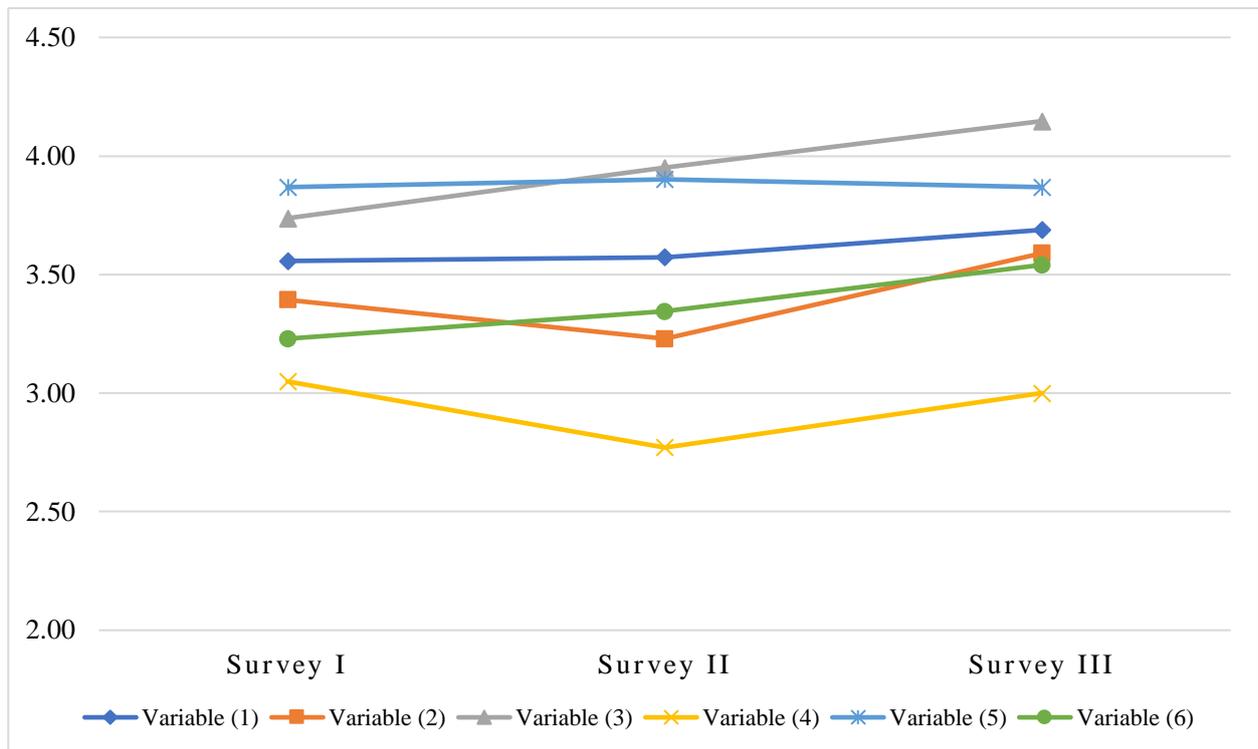


Figure 3: Change in Each Variable of HTC Among the Three Surveys

Anxiety

In the first survey, the students answered the question “Do you feel nervous when speaking impromptu in English without preparation, such as in a discussion?”. Those who answered either “very nervous” or “a little nervous” in the question chose all the applicable causes that induced mental tension from the choices provided. In the third survey, students selected all of the causes of tension that they felt were relieved even only by a little through both the first and second discussions. The results are summarized in Table 9.

Many of them had chosen lack of English skills as causes of tension, and they reported that anxiety by pronunciation accuracy was particularly relieved through discussions. Moreover, the causes “Inclusion of people from other countries as members of the group conducting the discussion” and “Anxiety about whether what I want to communicate will be understood” were the ones chosen the most and the second most. As for the former, there were 16 people in Survey I and 21 people in Survey III. This means that there were some students who had not felt that it could be a cause, but they actually felt their tension ease through the discussions.

Table 9. Mental Tension Reduced Through Discussions

Causes of tension	Survey I (n)	Survey III (n)
Insufficient vocabulary	36	6
Lack of grammar skills	31	7
Pronunciation Accuracy	20	15
Lack of fluency	20	9
Appropriate language use	23	7
Smallness of own voice	8	14
Lack of practice in presentation (speaking)	24	14
Difficulty in speaking content	30	12
Looking people in the eye when speaking (eye contact)	13	11
Size of the group conducting the discussion	19	3
Inclusion of people from other countries as members of the group conducting the discussion	16	21
The inclusion of classmates who are proficient in English as members of the discussion group	13	8
Evaluation (e.g. related to grades and selection)	14	5
Anxiety about whether what I want to communicate will be understood	22	19

Note: Survey I = the number of people who chose the cause, Survey III = the number of people who felt that the cause of tension was resolved to some extent

Self-Confidence

In order to analyze the change in their self-confidence, the students answered the questions “How has your self-confidence in speaking / listening to English changed after giving your own presentation and participating in the first / second discussion?” in the second and the third surveys respectively.

As for speaking, in the first session, some students became more confident and some less confident; in the second session, more students became more confident. Similarly, as to listening, some students became more confident and some less confident in the first session; in the second session, many students became more confident, including those who felt very confident (Table 10).

Table 10. The Change in Self-Confidence After Each Discussion

Choices	Speaking		Listening	
	Survey II (<i>n</i>)	Survey III (<i>n</i>)	Survey II (<i>n</i>)	Survey III (<i>n</i>)
Lost confidence	3	0	2	0
Slightly lost confidence	11	3	11	4
No particular change	22	17	23	25
Felt a little more confident	25	41	24	28
Felt very confident	0	0	1	4

Checking each student's answers to the questions about speaking confidence, 45 out of them ended this present practice with positive impressions, five with negative impressions, and 11 with no particular change. As to listening confidence, 39 out of them ended this present practice with positive impressions, six with negative impressions, and 16 with no particular change. For instance, if a student chose "Lost confidence" in Survey II and "No particular change" in Survey III, it was regarded as being no particular change, while a student chose "Felt very confident" in Survey II and "Lost confident" in Survey III, it was regarded as being a negative impression.

Additionally, correspondence analysis was administered by the qualitative data analysis application KH Coder to confirm the characteristic contents included in each text showing the reasons for the change in speaking and listening confidence among the choices. Figure 4 is the result of the analysis for speaking confidence, and Figure 5 for listening confidence. The answers in the second and the third surveys were combined for the analysis, and frequent words that were thought to be insignificant for the analysis such as "I", "be" and "because" were excluded in preprocessing. Dimension 1 and Dimension 2 do not have special meanings in these figures. The top 30 words with marked differences were the subjects for the analysis. Also, the top 30 words were displayed to focus on words away from the center (0, 0) since they are considered as uncharacteristic. The number "1" in red stands for "Lost confidence", "2" for "Slightly lost confidence", "3" for "No particular change", "4" for "Felt a little more confident", and "5" for "Felt very confident". The more frequently the words appeared in the texts, the larger the circles are.

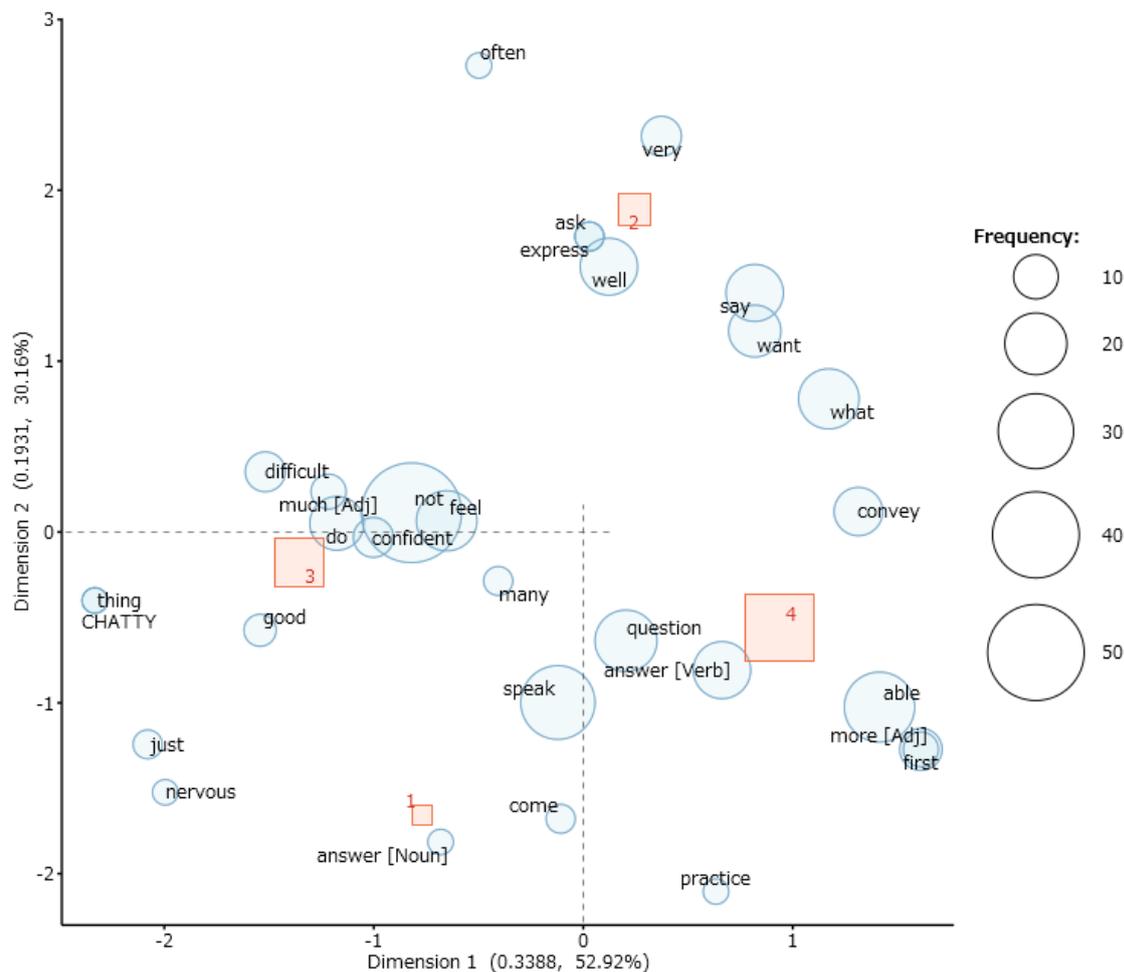


Figure 4: Correspondence Analysis for Speaking Confidence

In the analysis of speaking confidence, 1,599 tokens and 314 types of words, 131 sentences, and 123 paragraphs were extracted from the original texts. From the words “answer”, “come”, “speak” and “practice”, it can be summarized that the students who chose “Lost confidence” had a hard time coming up with their own ideas and answering questions even after practicing presenting beforehand. From the words “ask”, “express”, “well”, “very”, “often”, “say”, and “want”, it can be summarized that the students who chose “Slightly lost confidence” often felt it difficult to express what they wanted to say very well when asked questions. From the words such as “confident”, “not”, “difficult”, “good”, and “nervous”, it can be summarized that the students who chose “No particular change” kept their confidence level, which means that they were not affected by the participation in the discussions in terms of speaking confidence. From the words “answer”, “question”, “able”, “more”, and “first”, it can be summarized that the students who chose “Felt a little more confident” experienced success in communication with their instructors even though they struggled to answer their questions at first.

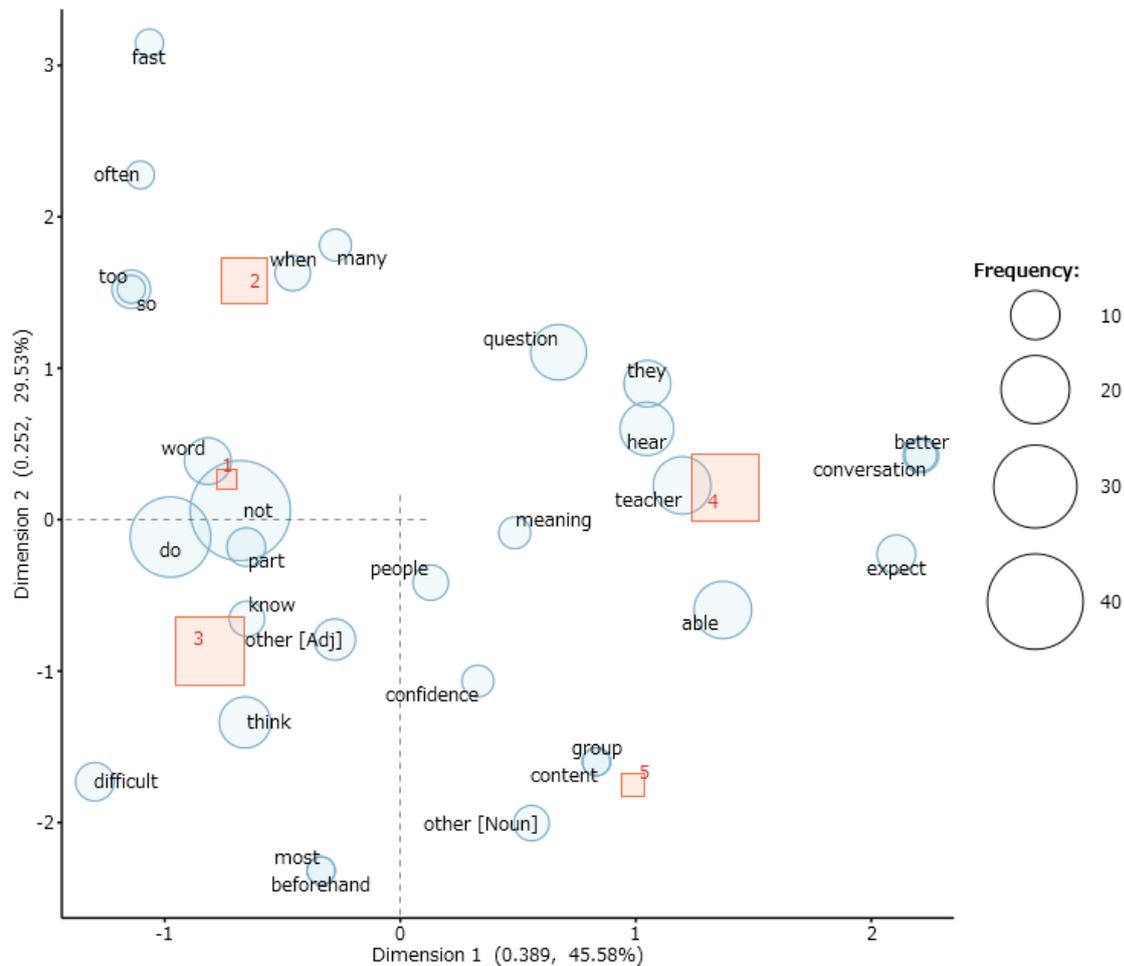


Figure 5: Correspondence Analysis for Listening Confidence

In the analysis of listening confidence, 1,516 tokens and 270 types of words, 127 sentences, and 125 paragraphs were extracted from the original texts. From the words “do”, “not”, “word” and “part”, it can be summarized that the students who chose “Lost confidence” had a hard time understanding some parts of what the instructors or other students were saying. Similarly, from the words “when”, “many”, “so”, “too”, “often”, and “fast”, it can be summarized that the students who chose “Slightly lost confidence” had many times when they could not catch up with the discussion because the instructors’ speech was too fast for them. From the words such as “know”, “other”, “think”, “difficult”, and “confidence”, it can be summarized that the students who chose “No particular change” somewhat understood but thought that there were several parts hard to comprehend, resulting in keeping the confidence level. From the words “teacher”, “able”, “hear”, “conversation”, “better”, and “expect”, it can be summarized that the students who chose “Felt a little more confident” were able to understand the instructors’ English more than they had expected. Finally, from the words “group”, “content” and “others”, it can be summarized that the students who chose “Felt very confident” succeeded in comprehending most parts of what others in their groups were saying.

Instructors' Intervention

Co-occurrence network analysis was performed using KH Coder on the reasons for the students' answers to the question with five-point scale "To what extent did the questions, comments, and advice from the instructor help you improve your presentations, discussions, and English language skills? Please include indirect factors." (M = 3.93, SD = 0.727), which was administered in the third survey. Similarly to the analysis for self-confidence, frequent words that were thought to be insignificant for the analysis such as "I", "be" and "because" were excluded in preprocessing. The size of the circles output results indicates the number of occurrences of a word, while the thickness of the line indicates the strength of the co-occurrence relationship. Co-occurrence relationships are based on the Jaccard coefficient, which is an index of the strength of the relationship between words, and was set to display the top 30 strongest coefficients. The number on each line of the graph represents its coefficient. The closer the number is to 1, the stronger the relation is. Regarding the interpretation of the results, we focused especially on the subgraphs that contained important contents for this study. Note that based on the text mining results, care was taken to ensure that the original meaning and context of the words were not lost by going back to the original text as appropriate.

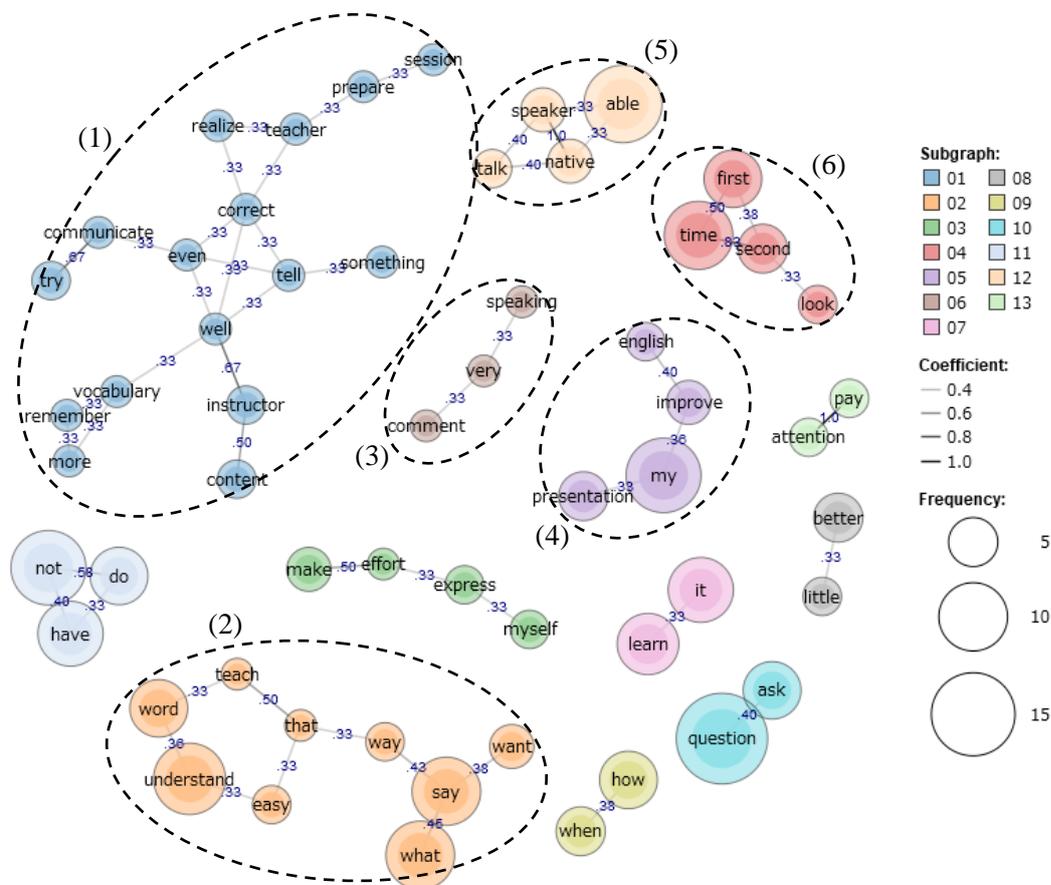


Figure 6: Co-Occurrence Network Analysis for Instructors' Intervention

Figure 6 shows the results of the co-occurrence network analysis for instructors' intervention in the discussions. In this analysis, the texts used were limited to the ones from the students who felt the instructors' questions, comments, or advice were "Useful" or "Very useful". 724 tokens and

186 types of words, 54 sentences, and 52 paragraphs were extracted from the original texts. From the words such as “correct”, “communicate”, “vocabulary”, “content” and “prepare” included in Enclosure (1), it seems that the students evaluate the instructors’ support positively because the instructors helped them maintain communication by politely correcting misused words or providing them with hints to remember appropriate vocabulary. Enclosure (2) indicates similar things. They state that the instructors guided them to use proper words in order to express their thoughts. Enclosure (3) shows that the instructors’ comments were useful in speaking improvements. Enclosure (4) also shows that the students actually felt that the instructors’ support contributed to improving their English. In addition, Enclosures (5) and (6) represent indirect influence of the instructors’ intervention; for instance, the students feel that it was a good experience to talk with people from other countries, or they were more able to grasp the instructors’ English.

DISCUSSION

Why did MW significantly increase from the first discussion to the second? It's possible that the participants were rather able to demonstrate more of their actual abilities than to rapidly increase their English skills. If so, why did this happen? We will consider it in terms of WTC, HTC, anxiety, self-confidence, and the instructors’ intervention.

Many students became more willing to communicate with others in English through this activity, which is thought to have led to a positive change in their attitude toward communicating. As a matter of fact, many of them ranked the actual interaction with the instructors as the most influencing factor for WTC, suggesting that this type of online discussions might be effective in improving WTC. Nevertheless, WTC did not show a significant numerical change, which can be construed that the transformation was limited. One of the reasons for this is that this short period of activities was not accompanied by a sense of improvement in English language skills to the extent that they felt more confident in speaking. A similar result is reported by Darasawang and Reinders (2021), stating that the only chance for the participants in their study to communicate was when they answered their teachers’ questions and took part in a role playing activity.

More importantly, the students were provided opportunities to ponder original ideas relevant to SDGs in English classes, resulting in having their own messages to communicate. Moreover, they were able to think more deeply about their own ideas through the interaction with the instructors or other students in the online lessons. Thus, they may have raised their awareness of the issue as the HTC scores significantly increased. Similarly, since the theme was SDGs, there was a significant increase in the scores for “(3) I have ideas about international issues, such as environmental issues and north-south issues”.

When discussions were held in groups that included people from other countries, the students were able to realize that they could communicate their thoughts even with their current English skills which led to lowering some of their anxiety. Therefore, many students chose the variables “Pronunciation accuracy”, “Inclusion of people from other countries as members of the group conducting the discussion”, and “Anxiety about whether what I want to communicate will be understood”. On the contrary, reduction of anxiety related to other parts of English learning were not reported by most of the students. This corroborates the possibility that the students’ English proficiency itself was not developed by the activities administered in a short period of time, and it did not contribute to the significant increase in MW.

Regarding whether the first discussion helped students gain self-confidence in speaking and listening, some students gained confidence while others lost confidence. However, with the second discussion, the change for many students ended up being positive. This means that, in addition to students who gained confidence both in the first and second discussions, students who had gained confidence in the first discussion maintained it at the same level over the second discussion, and students who had lost confidence in the first discussion gained strong confidence in the second discussion.

As an extraneous factor, the instructors' intervention seemed to affect the quality of the students' communication. Their scaffolding for English speaking might have worked positively since the students had been anxious about their English proficiency. Furthermore, it is surmised that the experience of interacting with the instructors motivated them to get more involved in communication.

Just as the heuristic model of variables influencing WTC (MacIntyre et al., 1998) illustrates, various constructs are interrelated with each other. Taking these into account, the change in MW could be attributed to WTC, HTC, anxiety, self-confidence, and the instructors' intervention respectively and partially.

CONCLUSION

Previous studies related to L2 output and its related factors that make it possible have been accumulated so far. However, there are few studies that attempt to explain the change in speech based on measured value along with internal and external factors. Besides, most of the previous studies were conducted with adults such as university students. Therefore, the present study aimed to analyze the change in speech that junior high school students uttered in an authentic communicative situation by comparing it with various factors.

The junior high school students in Japan, in an EFL context, participated in this study. First, they took face-to-face English lessons, and studied English and the contents about SDGs, when the big question "What's your ideas for SDGs?" was presented. Two online lessons were administered. A group was composed of one Filipino instructor and four students. They started with self-introduction, and moved on to individual oral presentations about their original ideas for SDGs, followed by discussions. The present study focused on the discussion part. There was a significant difference between MW in the first discussion and in the second discussion. Since the students took the second online lesson only a week after the first one, it was difficult to evaluate whether their English proficiency improved rapidly with statistically significant increase or not. Thus, the reasons for the increase were considered by the results of the three questionnaire surveys with the questions about WTC, HTC, anxiety, self-confidence, and the instructors' intervention. In conclusion, the experience of online discussions in English where people from other countries participate can partially lower FLA and increase self-confidence, leading to a positive impact on WTC. This contributes to an increase in MW. One of the most important things to be discussed is the significance of setting an interactive activity in which students deepen their own thoughts toward the topics provided. The present study suggests and emphasizes that teachers should not end the activity with a single practice but should secure at least two opportunities for the output and interaction with others, as a sole administration of the activity shows limited effects.

LIMITATIONS

As limitations of the present study, it was difficult to conduct similar activities three or more times, so care needs to be taken for generalization of the results of the present study. Also, the students made oral presentations before the discussion parts, and it could affect the change in students in some way, but it was difficult to determine its influence in this study. More practice and specific analyses should be done in the future studies.

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APPENDIX

Questionnaire items

Willingness to Communicate

Q. How much would you choose to communicate in each of the following situations in English?

- 1) When you have a chance to make a presentation in front of a large group?
- 2) When you find your acquaintance standing before you in a line?
- 3) When you have a group discussion in an English class?
- 4) When you have a chance to talk in a small group of strangers?
- 5) When you are given a chance to talk freely in an English class?
- 6) When you find your friend standing before you in a line?
- 7) When you have a chance to talk in front of the class in an English class?
- 8) When you have a discussion in a small group of friends?

Six-point scale for answers

1: Strongly disagree, 2: Disagree, 3: Slightly disagree, 4: Slightly agree, 5: Agree, 6: Strongly agree

Q. Compared to before, are you more willing to communicate with others in English?

Six-point scale for answers

1: Strongly disagree, 2: Disagree, 3: Slightly disagree, 4: Slightly agree, 5: Agree, 6: Strongly agree

Q. Which part of the series of activities has had the greatest impact?

Five-point scale for scoring each variable (1 point for small impact - 5 points for large impact)

Having Things to Communicate

Q. For each item, choose one that best describes your current condition.

- 1) I have thoughts that I want to share with people from other parts of the world.
- 2) I have issues to address with people in the world.
- 3) I have ideas about international issues, such as environmental issues and north-south issues.
- 4) I don't know what to say when it comes to talking to people from other parts of the world. *
- 5) I have no clear opinions about international issues. *
- 6) I have a lot to talk about with my friends from other parts of the world.

*Negatively-worded items

Six-point scale for answers

1: Strongly disagree, 2: Disagree, 3: Slightly disagree, 4: Slightly agree, 5: Agree, 6: Strongly agree

Anxiety

Q. Do you feel nervous when speaking impromptu in English without preparation, such as in a discussion?

Four-point scale for answers

1: Never nervous, 2: Not very nervous, 3: A little nervous, 4: Very nervous

Q. Please answer this question if you answered “Very nervous” or “A little nervous.” What causes you to be nervous? Please select all that apply.

Q. Please select all of the following causes of tension that you feel have been eliminated at least a little through both the first and second discussions.

Confidence

Q. How has your confidence in speaking to English changed after giving your own presentation and participating in the first discussion?

Q. How has your confidence in listening to English changed after giving your own presentation and participating in the first discussion?

Q. How has your confidence in speaking to English changed after giving your own presentation and participating in the second discussion?

Q. How has your confidence in listening to English changed after giving your own presentation and participating in the second discussion?

Six-point scale for answers

1: Lost confidence, 2: Slightly lost confidence, 3: No particular change, 4: Felt a little more confident, 5: Felt very confident

Q. Why do you feel so?

Descriptive answer

Instructors' Intervention

Q. To what extent did the questions, comments, and advice from the instructor help you improve your presentations, discussions, and English language skills? Please include indirect factors.

Five-point scale for answers

1: Never useful, 2: Not very useful, 3: Neutral, 4: Useful, 5: Very useful

Q. Why do you feel so?

Descriptive answer