STUDENT-ONLY SYNCHRONOUS ORAL PRACTICE SESSIONS IN AN ONLINE COURSE: IMPLEMENTATION AND EXAMINATION OF THEIR EFFICACY

by

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*I would like to dedicate my thesis work to my family and friends in Japan
who have supported me throughout the process.*

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ABSTRACT

Due to a devastating effect of the COVID-19 global pandemic in 2020, a great number of educational institutions including higher education were forced to stop in-person instruction and shift to remote instruction. In response to this global situation, investigation and development of effective online language learning have accelerated across the world.

At Purdue University, Japanese online courses have been offered for four different levels since they were developed in 2014. The previous curriculum contained weekly real-time sessions (RTSs) with two students under the supervision of an instructor. This 30-minute RTS was designed to facilitate interactions among students. Students could practice speaking with an instructor and a partner, but interaction among students were limited because the sessions were always led by the instructor. In addition, because the instructor needed to supervise all RTSs, the number of students in an online course was capped at 12.

In this study, the researcher revised the previous curriculum in order to expand spontaneous interactions among students during RTS. Specifically, this study designed and added instructor-less RTSs in addition to the instructor-led RTSs and examined the efficacy of the new curriculum. The statistical results showed that the new curriculum which contained the instructor-less RTSs was as effective as the previous curriculum. A post-experimental survey was also conducted to investigate students' perceptions of the instructor-less RTSs. This study found that the instructor-less RTSs encouraged them to become independent learners. Additionally, students could feel a sense of community while working on tasks with a partner during the instructor-less RTSs. Moreover, an analysis of recorded videos found students spoke Japanese more in the instructor-less RTSs than the instructor-led RTSs.

INTRODUCTION

This thesis project proposed and examined a revision to the previous curriculum of Japanese online courses at Purdue University. To ensure the efficacy of the revised curriculum, oral proficiency data was collected from a 2020 Fall class to compare with those from a previous class. This thesis report on the implementation of and examination of the revised curriculum.

Motivation for the Study

In recent years, online language learning is increasing at a rapid pace due to the growth of technology. Many postsecondary institutions adopt online language courses including distance learning (completely online), hybrid learning (mix of asynchronous and synchronous), and completely synchronous online learning.

Importantly, demand for online learning rapidly increased due to the COVID-19 global health pandemic in 2020. Universities in the US were compelled to convert offline courses into an online format, and educators were expected to utilize online teaching resources for effective learning. This sudden shift caused a great deal of confusion both for educators and students. Since numerous students went back to their home states or home countries, many courses were forced to adopt asynchronous instruction, so that students were required to study independently. Many students lost real-time interactions with peers, which is one of the most important components in language learning. As Demuyakor (2020) pointed out, one primary challenge in online learning is to enhance a sense of community among students. Since the COVID-19 started to spread all over the world, many researchers have investigated language learners' interactions.

A study by Wargadinata et al. (2020) examined how the pandemic affected students' language learning at a university in Indonesia. This qualitative descriptive study with 129 participants showed that more than half of the students felt that their learning style changed into autonomous learning. Also, they reported that half of the students thought discussion with peers was the most effective online language practice during the pandemic. The authors highlighted that language learners need to interact, express ideas and opinions, and create social

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relationships. The study also indicated that students actively utilized technology to practice and improve their oral skills.

These frustrations and confusions happened because there was no standard curriculum and pedagogy established for online language courses. In order to contribute to establishing an effective online course curriculum, this study aims to reexamine the previous course structure at Purdue University and propose a revision.

The Statement of the Problems

At Purdue University, there are online courses for four levels of Japanese: i.e. Japanese 101, 102, 201, and 202. They employ both asynchronous mode (Self-learning) and synchronous mode (Real-time session). For self-learning, students were required to complete all assigned tasks by themselves including reading tasks, writing tasks, and speaking tasks prior to attending a real-time session (RTS).

The RTSs were conducted under the supervision of an instructor. There were two students per session, and they attended a 30-minute RTS once a week to practice spontaneous conversation. As many researchers highlighted, interaction among peers is an essential part of language learning (Philip, Adams, & Iwashita 2013; Sato & Ballinger 2016). During a RTS, they were required to complete all speaking practice tasks with a peer. The RTS was developed for students' practice of spontaneous conversation and interaction in Japanese. However, the previous design did not encourage students to interact with each other spontaneously because the instructor always led the session. Students were able to wait for instruction and guidance from the instructor to complete provided tasks. Moreover, there was a logistical/administrative issue with the RTS as well. Since supervising all RTSs was time-consuming for an instructor, the number of students was capped at 12 for the online courses. Although there was a demand for online courses, it was impossible to accept more students.

Considering these problems, this experimental study aimed to review the previous RTS format and propose a revised curriculum. While the previous RTS was always led by an instructor, the revised curriculum contains an instructor-less RTS where students are required to complete tasks by themselves. If the instructor-less RTS turns out to be as effective as the instructor-led RTS, the new RTS format can be added to the online course and it should help students have more opportunities to interact with peers spontaneously. Also, since students need

to complete speaking tasks with a peer without an instructor, they need to cooperate, help each other, and solve all problems without any help from an instructor. It can be expected that the instructor-less RTS will encourage students to develop learner autonomy as well as a sense of community. In the previous curriculum, interaction between peers was very limited. In this study, the researcher also investigates whether or not the instructor-less RTS helps the development of students' autonomy and a sense of community working with a peer. Additionally, it is expected that students' production of Japanese in the instructor-less RTS would be greater than in the instructor-led RTS. The present study also investigated the use of the target language during the instructor-less RTS.

Research Questions

This study is designed to answer the following three research questions.

Research Question 1: Is the instructor-less synchronous session as effective as the instructor-led session in improving students' speaking skills?

Research Question 2: Does the instructor-less synchronous session help students develop learner autonomy and a sense of community?

Research Question 3: Do students use more Japanese in the instructor-less session than in the instructor-led synchronous session?

In order to examine Research Question 1, the following hypothesis was tested.
- Hypothesis 1: The control group's posttest mean score is not significantly different from the experimental group's posttest score.

To examine Research Question 2, the researcher tested the following hypotheses.
- Hypothesis 2 : The students felt that the instructor-less synchronous session encouraged them to be independent learners.
- Hypothesis 3: The instructor-less synchronous session made the students realize the importance of independent learning.

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- Hypothesis 4: The instructor-less synchronous session made them feel a sense of community working on tasks with a partner.

To examine Research Question 3, the following hypothesis was tested in this study.

- Hypothesis 5: Students spoke the target language more in the instructor-less synchronous session than in the instructor-led synchronous session.

RESEARCH BACKGROUND

In this chapter, the present author reviews previous research on 1) online language learning, 2) peer interaction in SLA, and 3) elicited imitation test. Also, this chapter presents the previous Japanese online course curriculum at Purdue University.

Online Language Learning

Online Learning

Technology itself does not constitute a teaching methodology, but it can help to deliver a teaching method or a language pedagogical approach. Second language teaching methodology has changed with the rapid advancement of technology (Tateyama, 2015, Yang & Chen, 2006). Online language learning is differentiated from traditional face-to-face instruction, and the learning environment varies depending on whether instruction occurs in real-time or not, through written or spoken channels, and with peers or independently. As Blake (2011) explained, online courses differ widely not only in terms of their format but also in terms of their use of particular technological tools and pedagogies. Online learning can be divided into two types: 1) synchronous learning and 2) asynchronous learning.

Synchronous Learning

Synchronous learning refers to a course format that includes real-time interaction or instruction. Example of synchronous interaction include real-time speaking activities on video conference tools or exchanging text messages in a chat room synchronously. Instruction in synchronous learning includes real-time lectures or instructor-led practice via video conference tools. Online synchronous sessions allow students to practice speaking and listening in real-time, and in addition, to get to know their peers and work on activities together.

Asynchronous Learning

Asynchronous learning includes interaction or instruction that occurs on a delayed or on-demand basis. For instance, asynchronous interaction includes delayed communication such as

exchanging email, and discussing some topics on a discussion board on a Learning Management System (LMS). Asynchronous instruction can also take the form of reading or writing assignments. The term asynchronous learning is also used interchangeably with distance learning. Barker, Frisbie, and Patrick (1989) characterized distance learning as a learning environment in which the student; 1) is separated from the instructor in terms of physical location, 2) is separated relative to time from the instructor, and 3) learns independently.

Online Learning vs. Face-to-Face Learning

Many researchers investigated whether or not an online course can deliver instruction equivalent to a face-to-face course. For example, Tateyama (2015) examined the effectiveness of online instruction comparing data collected from online and offline courses of advanced-level Japanese. In addition, the study examined the participants' perceptions of the online course regarding learning outcomes through a survey. The study showed that the online section and offline section are comparable in terms of students' learning outcomes as measured by a written exam. Also, interestingly, the study found that some online students perceived the online course as less stressful than an in-class Japanese course that they had taken before.

Chenoweth, Ushida, and Murday (2006) investigated the effects of online language learning in hybrid online French (Elementary1& Elementary2) and Spanish (Elementary1& Elementary2) courses at a university in the US. In order to examine the effectiveness of online language learning, they compared these courses with the equivalent offline courses. Their participants were 354 students across 34 sections over five semesters. The students in the hybrid courses were required to attend one face-to-face class per week as well as one in-person meeting with their instructor for 20 minutes each week. In addition, they participated in a weekly chat session moderated by a teaching assistant for one hour. Their learning materials were provided online including self-check exercises and written assignments. The students in the offline courses were required to participate in a 50-minute face-to-face class, 4 days per week for the elementary courses, and 3 days per week for the intermediate courses. The identical syllabi were used for both the online and the offline courses. The authors analyzed the students' scores on oral exams that included interview and role-play to see their improvement in oral proficiency. In terms of oral production, the overall results showed that the online students

outperformed the offline students in fluency, comprehension skill, and control of syntax and grammar in both levels.

Synchronous Learning vs. Asynchronous Learning

In online asynchronous context, since learners have physical distance from instructors and peers, a sense of community tends to be felt less than in face-to-face classes. Therefore, this might make students feel isolated and make language learning difficult (Wang & Chen, 2007). In contrast, online synchronous language learning allows students to communicate with peers and instructors in real-time. Moreover, the current technology makes it possible to accommodate a much larger number of students in online language courses than before. Even when students and instructors are physically separated, interactive activities equivalent to what is done in a face-to-face course becomes possible in a synchronous session.

Ge (2012) compared an asynchronous learning approach and a blended learning approach in online ESL education at a university in Beijing. There were 70 participants in the study, and they were separated into two groups: asynchronous group ($N = 34$), and blended group ($N = 36$). Both groups received asynchronous online instruction including prerecorded video lectures, downloadable materials, online quizzes and exercises, an online discussion forum, etc. The students were required to access the online course and study at least four hours a week. The blended group was also required to attend two lectures (50-minute) each month via *Webex*. The instructor gave them a lecture for 25 minutes to summarize the most important points of the course including grammatical structures, and the rest of the time was used for interaction with students. During the interaction time, usually the students were required to answer some questions provided by the instructor. At the end of the semester, all students took a final exam. To see the effects of the two learning approaches, their final exam scores were analyzed. The results showed that both approaches had a positive effect on students' English learning, but the blended group significantly outperformed in terms of improvement of the scores. In addition, a survey was conducted after the final exam to see their perceptions of learning experiences. The results showed that 75 % of the students answered that the synchronous classes were necessary, while 16.7 % of students thought they could learn by themselves without the synchronous classes. Interestingly, most students (94.4 %) wanted more interactions with the instructor, and 72.2 % of the students that received the synchronous instruction felt they were not active during

the synchronous classes. This is probably because the synchronous sessions only contained Q&A activities between the instructor and the students. Overall, the study indicated that synchronous instructional approach had a positive impact on language learning.

Videoconferencing Technology

Online language teaching has gradually incorporated tools and functions that allow synchronous interaction (Guichon & Cohen, 2014), and as Lee, Nakamura, and Sadler (2017) suggested, videoconferencing technologies such as *Zoom*, *Skype*, and *Webex* have turned out to be useful tools for interactive synchronous language learning. Kohnke and Moorhouse (2020) also pointed out that functions of videoconferencing tools such as screen sharing, breakout rooms, and annotation tools make it possible to implement communicative language learning in interactive synchronous classes.

Yamada and Akahori (2007) compared four types of synchronous computer-mediated communication (SCMC): text-based chat with and without image, video conferencing, and audio conferencing. There were 40 EFL students at a university for this study, and they were divided into four groups: a videoconferencing group, the audioconferencing group, the text-chat with image group, and the text-chat only group. The students were split into pairs and they were required to complete a 15-minute discussion about a provided topic. After the experiment, all students completed a questionnaire to evaluate the perceived presence of their partner, ease of communication, and L2 communication with their partner in each type of SCMC. Additionally, the authors analyzed the video- or audio-recordings for objective analyses. The results showed that the students in the videoconferencing group produced the greatest amount of speech. Also, most students from the groups of SCMC with videos made positive comments on L2 communication with their partner, while students who used SCMC without their images had some negative perceptions such as feeling stress when they needed to wait for their partner's response. The study found that the presence of their partner's image has an effect on their perceptions and L2 communication.

The development of technology allows for more interactive language learning with a greater number of students than previously thought possible. Technology such as videoconference tools have made it possible to communicate with multiple students at the same

time. This change has prompted an increase in the number of online language courses (Tateyama, 2015), as well as a greater number of studies in this area.

Peer Interaction

The present study aims to show that the revised curriculum that includes instructor-less synchronous peer interactions can foster in students the same level of oral language competence as the previous curriculum. In this section, the present author reviews research on peer interaction in SLA and online peer interaction.

According to Wang (2004), interaction in the target language is an integral part of the communicative approach. In a language learning environment, interaction with the social, physical, and technology environment changes and creates learners' understanding of the world. And indeed, this constructing process can be helped by peers (Heiser, Stickler, & Furnborough, 2013). Wang and Chen (2007) emphasized that central to the communicative approach is the notion that a language is a tool for social communication and interaction. In this section, peer interaction in SLA and online synchronous interaction are mainly focused.

Peer Interaction and SLA

In second language learning research, peer interaction has been examined to understand its impact on learners' language skills including writing, speaking, listening, and reading (Swain, Brooks, & Tocalli-Beller, 2002). Sociocultural theories and theory of distributed cognition show that peer interaction is beneficial for cognitive development, language learning, and motivational support (Lin, Zheng, & Zhang, 2016). The outcomes of peer interaction have received increasing attention in second language learning research in recent years (Tognini, Philip, & Oliver 2017). Philip and Tognini (2009) argued that peer interaction is used differently depending on purposes and desired outcomes. They identified three distinct purposes of peer interaction: (1) interaction as practice, including the use of formulaic language, (2) interaction that concentrates on the exchange of information, and (3) collaborative dialogue including attention to form (p.254).

According to Shibatani et al, Vygotsky (1987) claimed that in a process of learning a language, learners need a more knowledgeable person who would help them: i.e. someone who

can help learners to do the activity independently. Vygotsky used the term "zone of proximal development (ZPD)" to refer to the gap between what a learner can do without help and what the learner can achieve with help. He explained that filling the ZPD is an important key to becoming an independent learner. In his argument, a "more knowledgeable person" is typically an expert in the target language such as native speakers and teachers. However, the argument that ZPD should be filled by a language expert has been criticized in a study of sociocultural second language acquisition (Brooks & Swain, 2001; Swain, 2001; Swain, Brooks, & Tocalli-Beller, 2002). Tocalli-Beller (2001) argued that peer-peer collaborative interaction within the ZPD can help learning through disagreeing, proposing possible answers or solutions, conflicting, and repeating. Toth (2008) pointed out that learner-led discourse can yield more essential communication than teacher-led discourse, and learner-led discourse can enhance a greater linguistic autonomy and creativity. Although an expert such as an instructor can help and correct learners' problems, peer-peer collaboration can develop learners' self-regulation.

Sato and Lyster (2012) investigated the effectiveness of peer interaction and corrective feedback (CF) among peers in L2 English learning. Specifically, they examined whether peer interaction and CF embedded in peer interaction have an effect on the improvement of L2 accuracy and fluency. Their participants were four university-level English classes in Japan ($N = 167$). In order to examine the effects of peer interaction and CF as well as types of CF, they prepared four groups: 1) peer-interaction-plus-prompt group (PI-prompt; $N = 41$), 2) peer-interaction-plus-recast group (PI-recast; $N = 46$), 3) peer-interaction only group (PI-only; $N = 42$), and 4) control group ($N = 38$). Two of the groups were taught how to provide CF to their partners: PI-prompt group received instruction on how to give prompts, while PI-recast group was taught how to provide recasts to one another. The CF training consisted of modeling, practice, and use-in-context. They employed a pre-post test design, and both pre- and posttest used a picture-description task (Task 1) and a decision-making task (Task 2) to elicit the students' spontaneous L2 oral productions. The results of the pre- and the posttest analysis showed that the groups that received peer interaction outperformed the group without peer interaction ($d = .76$). And the PI-prompt group outperformed both the PI-only group ($d = 1.69$) and the control group ($d = 2.11$). Additionally, the PI-recast group outperformed the PI-only ($d = 1.73$) and the control group ($d = 2.16$). Their study showed that peer interaction positively affects L2 learning, and CF among peers has also positive impacts on L2 development.

Online Peer Interaction

Online synchronous language learning allows learners to communicate with others not only in writing but also in speech (Satar, 2015), and online synchronous interaction among language learners has been investigated by many researchers.

Lenkaitis (2020) investigated L2 learning and learner autonomy in synchronous online communication in L2 Spanish. There were 10 groups of participants ($N = 25$) from a university in the US. Three groups were introductory level students ($N = 6$), four groups comprised 1st semester intermediate level students ($N = 11$), and the other three groups included 2nd semester intermediate level students ($N = 8$). All of the participants were grouped into groups of 2-3 students by class level to attend online synchronous activities. They were required to record a weekly *Zoom* session for 4 weeks (Introductory level: 10-15-minute, 1st semester intermediate level: 15-20-minute, 2nd semester intermediate level: 20-25-minute). In addition to the weekly *Zoom* session, they were instructed to meet with their partner(s) via *Zoom* to have a free conversation. In this additional session, they were required to discuss course-related topics in Spanish freely. There were no tasks or activities to complete. After each session, they reported in a survey how well they thought they were able to speak and how long. They analyzed students' recordings and found that higher-level students spoke the L2 more than the lower-level students, but the intermediate groups had more pauses and fillers than the introductory group. The results of the analysis of the surveys showed that both intermediate level groups showed their satisfaction with their improvement of speaking skills after the treatment, and all levels of students thought they can speak in the L2 longer than before. The study showed that L2 learners can actively build their knowledge and become able to have a spontaneous conversation in the target language through technology, specifically *Zoom* video conferencing tool.

Bistline-Bonilla (2020) investigated the effect of types of interlocutors on Spanish L2 leaners' interactional output, L2 development, and learners' self-reported anxiety level during an online synchronous meeting. There were 82 participants from a university in the US. In order to test the effects of three types of interlocutors (peer, professor, or native speaker), 30 students interacted with a peer (from another group of learners) and 27 students interacted with a professor interlocutor, and 25 students interacted with a native speaker. Each pair had three sessions in total, and they were required to complete two tasks during the session: a decision-

making task and an information gap task via *Zoom*. The author analyzed and counted their total word productions and the number of language-related-episodes (LRE). The results showed that the students from the peer interlocutor group used fewer LREs during a decision-making task than the native speaker and professor interlocutor groups. On the other hand, there was no significant difference between the students from the peer interlocutor group and the students from the native speaker and professor interlocutor groups in terms of the number of LREs and amount of talk in the target language during the information gap task. Also, the results of the students' self-reports on anxiety level showed that the type of interlocutor was not a predictor of students' overall anxiety. The study indicated that the type of interlocutor in L2 interaction does not have a negative effect on students' utterances and their anxiety.

Elicited Imitation Test

Elicited Imitation Test (EIT) is one of the language testing methods that requires participants to listen to a model and then repeat what they heard. EIT is typically designed with a pause after hearing a stimulus sentence (Kim, Tracy-Ventura, & Jung, 2016). A study by MacDade et al. (1982) found that and test-takers were able to repeat a sentence if repetition was immediate, but they could not repeat it after a 3-second pause if they did not have enough linguistics knowledge. Bowden (2016) also concluded that 3-second pause is appropriate because immediate repetition may overestimate test-takers' linguistic abilities, while a 5-second pause may cause more controlled processing strategies to be accessed (p.653). The validity of EIT has been discussed by many researchers to show that EIT can measure language learners' linguistic knowledge. In this section, we review previous research on the validity of EIT in SLA and discuss the EIT as a reconstructive task and an implicit knowledge test.

Validity of EIT in SLA

EIT has been used to evaluate L2 oral proficiency especially for research purposes (Yan, Maeda, Lv, & Ginther, 2016). Gaillard and Tremblay (2016) examined the validity of the EIT as a measure of linguistic proficiency in French as a second/foreign language. In their study, both native ($N = 6$) and nonnative French speakers ($n = 94$) were asked to complete an EIT that included 50 sentences. They conducted the EIT as well as a cloze test to test the reliability and

validity of the EIT. They found a strong correlation between L2 learners' averaged EIT scores and the cloze test scores ($r = .79$). The fact that the participants of the study performed successfully on both tests showed that they had the necessary lexical and grammatical knowledge to complete the tasks. The result showed that EIT can measure language learners' linguistic knowledge.

Kim, Tracy-Ventura, and Jung (2016) examined the validity of an EIT for SLA with Korean language learners ($N = 66$). The participants took a Korean EIT, the listening tasks of the standardized Test of Proficiency in Korean (TOPIK), and a speaking test. The EIT contained 30 sentences and each sentence consisted of 7-19 syllables. The participants were required to listen to each stimulus sentence, and wait for a beep which can be heard after a 2-second pause, and then repeat as correctly as possible. The study found positive correlations between the EIT scores and other proficiency tests' scores (the speaking test: $r = .77$, the TOPIK listening test: $r = .62$). They also analyzed the participants' oral proficiency in terms of complexity, accuracy, and fluency. The study reported that the correlation between the EIT and fluency on the speaking test has the highest value (.62), followed by the number of morphemes per clause (.55), accurate clause rate (.47), and the number of clauses per speech unit (.40). Overall, they demonstrated that the EIT is a valid testing method to measure the learners' language proficiency.

EIT as a Reconstructive Task

When language learners take an EIT, they will not be able to repeat what they hear if the length of the stimulus sentence exceeds the short-term memory capacity (Wu & Ortega, 2013). It means that they need to comprehend the sentence they hear and reconstruct it based on their grammatical knowledge. Tomota, Suzuki, & Jessop (2009) also pointed out that EIT requires participants to reconstruct a stimulus sentence with their own interlanguage grammar.

Park, Solon, & Henderson et.al. (2020) compared EIT performance produced by various levels of Spanish speakers ($N = 78$) to examine the relationship between EIT performance and phonological short-term memory (PSTM). They used a nonword repetition (NWR) test to measure the participants' PSTM and compared it to the Spanish EIT scores. First, the results showed that the learners' proficiency level affects their EIT scores. The study was conducted with four groups: 1) Low level, 2) Intermediate level, 3) High level, and 4) Native speakers.

Native Spanish speakers performed at near-perfect level on the EIT (M = 119.80), while L2 learners received lower scores (Low: M = 37.14, Intermediate: M = 83.65, High: M = 107.90). These data demonstrated that the EIT detected the test takers' proficiency levels quite accurately. Second, their study reported that the main predictors of L2 learners' proficiency were language-related features such as the three CAF measures (complexity, accuracy, and fluency), not memory capacity. The NWR scores were significantly correlated with the EIT scores (r = .31, p = .005) but they found that they did not make any meaningful contribution to the prediction of L2 learners' EIT performance. They highlighted that the ability to repeat stimulus sentences depends on long-term language knowledge rather than reflecting limitations in PSTM.

EIT as an Implicit Knowledge Test

Ellis (2005) pointed out that EIT is designed as a measure of implicit knowledge. Implicit knowledge is defined by Han & Ellis (1998) as knowledge of a language that includes an intuitive feeling for what is correct and acceptable. Zhang (2014) described implicit knowledge as a knowledge underlying communicative ability and is used in spontaneous comprehension and production (p. 459). And it is differentiated from explicit knowledge which is rule-based knowledge such as the use of the plural maker -*s*. Commonly, implicit knowledge is understood as an intuitive awareness of linguistic norms, while explicit knowledge is conscious awareness of linguistic norms (Ellis, 2005). In other words, implicit knowledge is "acquired knowledge", while explicit knowledge is "learned knowledge".

Other testing methods are also used to measure learners' implicit knowledge, such as oral narrative and timed dictation (Ellis, 2005), but EIT does not require reading or writing skills. Therefore, EIT evaluates learners' knowledge and automated ability to process vocabulary and grammar (Yan, Maeda, Lv, & Ginther, 2016).

Zhang (2014) investigated the validity of EIT and EIT as implicit and explicit knowledge test at a university in Beijing. Four ESL classes participated in the study (N = 100). The study tested four different measures including 1) EIT, 2) timed grammaticality judgement test (TGJT), 3) untimed grammaticality judgement test (UGJT), and 4) metalinguistic knowledge test (MKT) in order to test the participants' implicit and explicit linguistic knowledge. For each test, both grammatical and ungrammatical sentences were included. When the participants took

the TGJT, they were asked to show the degree of certainty of their judgement (grammatical or ungrammatical) by a score from 0 to 100 % and indicate whether they used "rule" or "feel" to answer each question. The statistical analyses showed that the EIT and MKT correlated most strongly with the UGJT (r = .52), and the TGJT showed the strongest correlation with the EIT (r =.36). They also investigated the correlations between the participants' self-reported use of "rule" and "feel" on the UGJT and both the grammatical and ungrammatical items. The results showed that "rule" has a stronger and positive relationship with the ungrammatical items than the grammatical items (r = .43), while "feel" has a stronger and negative relationship with the ungrammatical items. The finding indicated that the ungrammatical items constitute a better measure of explicit knowledge. In order to see the relationship between test type and participants' implicit/explicit knowledge, confirmatory factor analysis (CFA) was conducted. The results showed that the EIT and the TGJT were more likely to measure the participants' implicit knowledge, while the UGJT and the MKT measure explicit knowledge (See Figure 1). The study supports the idea that EIT can measure learners' implicit knowledge.
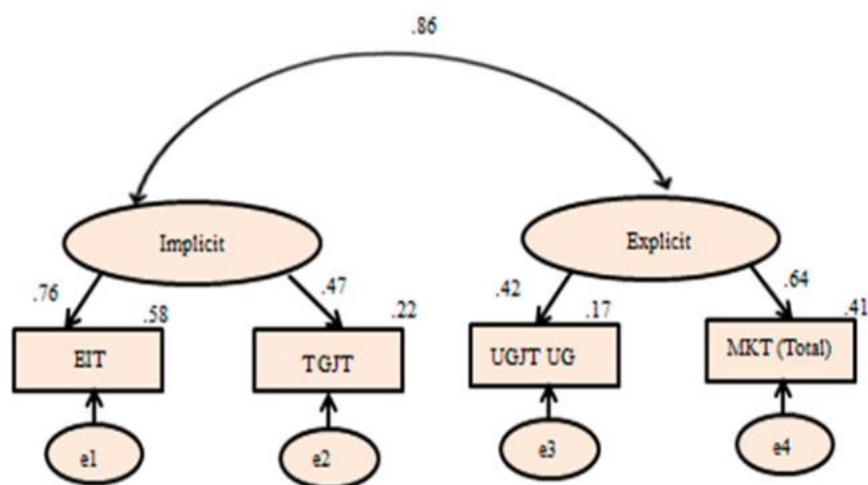

Figure 1. Results of CFA for the participants' implicit versus explicit knowledge.
Adopted from Zhang (2014) p.475

The Previous Course Structure of Purdue University's Online Courses

The present study aims to follow up previous online course development and a validation study in 2017 and revise the course curriculum of the Japanese online courses at Purdue University. In this section, the present author presents an overview of the online course curriculum.

Mishima, Miyamoto & Yanagisawa (2015) reported on Japanese online course development at Purdue University. The online course consisted of both asynchronous mode and synchronous mode. Self-learning is defined as an asynchronous mode, while real-time session (RTS) is defined as a synchronous mode.

For self-learning, students were required to read assigned pages of the textbook *Nakama 1 Introductory Japanese: Communication, Culture, Context* (Hatasa, Hatasa, & Makino, 2015). Also, they used *Speak Everywhere* (Fukada, 2013) to complete speaking practice including drills, Q & A, and role-play activities before attending RTS. In addition to the reading and speaking assignments, writing activities were assigned for students' practice and understanding of the contents. Once students submitted their assignments, an instructor gave them feedback on both the speaking and the writing tasks. Self-learning was developed for the improvement of students' autonomous learning abilities. Because it contained an abundance of speaking exercises, students were able to learn actively, not passively. However, since self-learning does not contain any spontaneous communication activities, the RTS was developed as students' opportunity to have spontaneous conversation and communication practice.

Each RTS was led by an instructor with two students participating, and the instructor directed all student activities. There was one RTS per week and it was 30-minute long. The RTS was made up of several pair activities and they completed the speaking tasks under the supervision of an instructor. There were no drill-type activities, and the session employed the communicative approach with a set of interactive activities such as Q & A and role-play. The RTS was designed as an instructor-led speaking practice session, which means that an instructor supervised students' activities all the time and gave them suggestions and feedback in real-time. Because the instructor needed to supervise one 30-minute RTS per pair per lesson, the number of students in a class naturally had to be constrained. For this reason, the enrollment of the online courses was capped at 12, but there was often greater demand.

Proposed Revision to the Curriculum

The present study proposes to adopt instructor-less RTSs as a new practice format. The following positive effects can be expected from the new synchronous session format on language learning in the online course.

First, students can have more opportunity to have a spontaneous conversation with peers in Japanese. Although the aim of the RTSs is to provide an opportunity for spontaneous conversation practice, in an instructor-led session, students may just wait for directions from the instructor and complete the provided tasks closely guided by the instructor. The previous format of RTSs did not encourage interaction among students. In order to accomplish the purpose of the RTSs, students should be able to practice by themselves using their knowledge gained from self-learning.

Second, students will be encouraged to become independent learners. When the instructor always supervises all RTSs, students may come to completely rely on the instructor. According to White (2008), independent language learning (ILL) requires learners to develop responsibility for their learning, awareness and knowledge of themselves, and their learning needs and preference. It is important to provide students with opportunities to self-assess their oral ability in an unprompted environment. In the new RTS format, they will be able to have more spontaneous conversations with peers to proceed with the session in the target language so that they will be able to know what they can do and cannot do.

Third, students can feel a sense of community while they are working with peers. Since the online course does not provide a chance to meet and communicate with other peers compared to the in-class course, students' awareness of the learning community was limited. If the RTSs contained only the instructor-led sessions, students do not have many chances to interact with their partners unless the instructor asks them to do so. Zhao & Xu (2014) found that learners' intention to continue online learning is dependent on their sense of community, and it plays an important role in determining leaners' perceived usefulness of online language learning. In the new RTS format, students must communicate and collaborate with their partner to work on the assigned activities. Proceeding with and completing the activities by themselves without the instructor would certainly give them confidence, a sense of accomplishment, and eventually, a sense of community.

In the present study, instructor-less RTSs were employed in addition to the previous RTS. Students attended the RTS once a week and the two RTS modes were conducted alternately. During the instructor-less mode, students were required to complete a set of provided tasks with a peer partner. The session had to be recorded and submitted to the instructor so that the instructor was able to monitor how they proceeded with the tasks and gave some feedback when it was needed.

METHODOLOGY

Overview

In this study, in order to examine the effectiveness of real-time sessions (RTS) without an instructor, the study compared two datasets from online Japanese courses: one collected in the spring semester in 2017, and another collected in the fall semester in 2020.

In both years, 30-minute RTSs were conducted once a week and there were two students per session. In 2017, instructor-led RTSs were conducted throughout the semester. In the present study, an instructor-led RTS and an instructor-less RTS were carried out alternately.

This study employed a pre-post test design, and the pretest was administered in the first week of the semester and the posttest was administered during week 14. After the posttest, the students were asked to complete an online survey to examine their perceptions of the RTSs. Figure 2 is an overview of the design and procedure of the study.
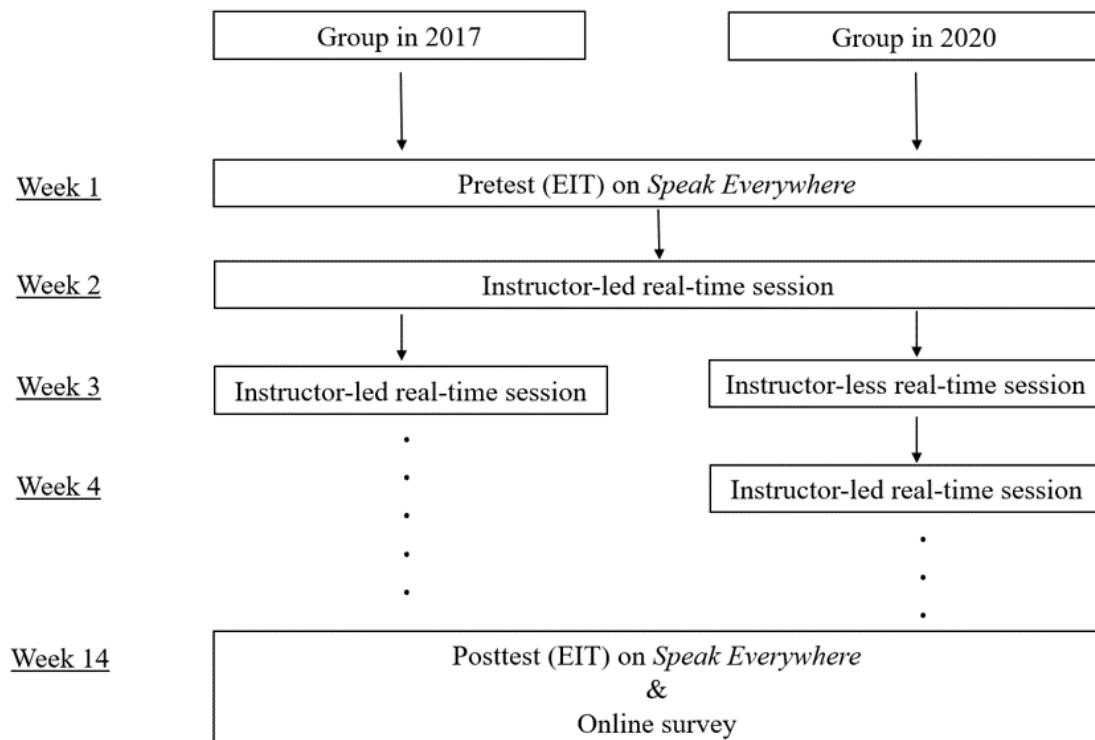
Figure 2. Overview of the present study

Subjects

There were two groups of subjects: one from 2017 had 11 students enrolled in JPNS 102 online, and the other from 2020 had 13 students enrolled in the same course. The background of each group is summarized in Table 1 and Table 2.

Table 1. Backgrounds of Participants in 2017

	Sex	Year in School	Age	First Language	Major
1	Male	Senior	24	Korean	Electrical Engineering
2	Female	Sophomore	19	English	Genetics
3	Male	Senior	21	Chinese	Electrical and Computer Engineering
4	Female	Senior	21	Chinese	Mechanical Engineering
5	Female	Senior	22	Korean	Chemical Engineering
6	Male	Senior	26	Korean	Building Construction and Management
7	Male	Senior	21	Chinese	Computer Engineering
8	Male	Junior	22	Chinese	Computer Engineering
9	Male	Senior	21	Chinese	Mechanical Engineering
10	Male	Senior	22	Chinese	Mechanical Engineering
11	Male	Senior	21	Chinese	Electrical Engineering

Table 2. Backgrounds of Participants in 2020

	Sex	Year in School	Age	First Language	Major
1	Female	Junior	20	Chinese	Mechanical Engineering
2	Female	Freshman	18	English	Psychology
3	Male	Sophomore	22	Chinese	ECE
4	Female	Freshman	18	English	Medicine
5	Female	Sophomore	19	English	Computer Science
6	Male	Sophomore	19	English	Actuarial Science
7	Female	Senior	43	English	Psychology
8	Female	Freshman	18	Spanish, English	Japanese, Russian
9	Male	Sophomore	20	3Chinese	Applied Mathematics
10	Female	Freshman	19	English	Computer Science
11	Female	Freshman	18	English	Hospitality & Tourism Management, Japanese
12	Male	Senior	23	Chinese	Game Development
13	Male	Freshman	18	English	Engineering

Materials

The details of materials used for this study are as follows.

EIT

An EIT was administered in order to measure the students' improvement of oral skills. Both pre- and posttest were administered on *Speak Everywhere* with the instructor proctoring (Figure 3). The students listened to stimulus sentences one at a time and repeated them after a pause followed by a beep sound.

There were 10 stimulus sentences for the pretest, and all the grammar structures and vocabulary items used came from the first six chapters of the course textbook *Nakama 1 Introductory*

Japanese: Communication, Culture, Context (Hatasa, Hatasa, & Makino, 2015) which were covered in JPNS101. The students were required to take it in the first week of the semester. For the posttest, another set of 10 stimulus sentences was provided but the content was different from the pretest. It contained grammar and vocabulary newly introduced in JPNS102. Sample EIT items are provided in Figure 4.
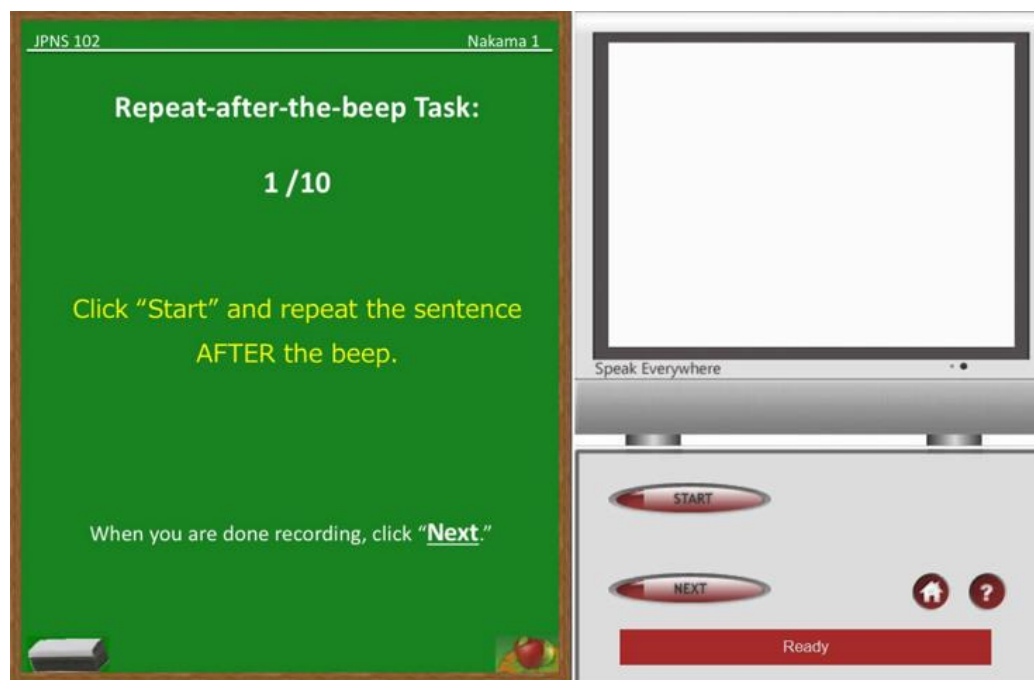
Figure 3. EIT screen on *Speak Everywere*

これは英語で何と言いますか。	How do you say this in English?	(item 1 of the pretest)
シドニーは今午後七時半です。	It is 7pm now in Sydney.	(item 2 of the pretest)
一か月に一冊本を読みます。	I read a book a month.	(item 1 of the posttest)
バナナを百本食べたことがあります。	I have eaten 100 bananas.	(item 2 of the posttest)

Figure 4. Sample items of EIT

RTS Activities

During a RTS, students were required to complete provided tasks within 30 minutes with or without the instructor. Activities identical or similar to those used in 2017 were utilized to

keep RTSs as equal as possible. Each RTS contained few practice activities such as Q & A and role-play, and one final conversation practice. See Figure 5 for an example set of activities.

Task 1: Question word + か ／ Question word + も + 〜ない

Ask the following questions to your partner. Make sure you continue the conversation with some follow-up questions.

(a) Did you go out anywhere during the summer break?
(b) Did you see anyone during the summer break?
(c) Did you eat anything this morning?
(d) Did you drink anything last night?

Task 2: 〜から／けど

<Person A>
You want to invite your partner to watch a movie together this Friday. Make sure you ask your partner's favorite genre and suggest a movie to watch.
<Person B>
You will go to Chicago to see your family on Friday. Suggest your partner this Sunday as an alternative plan. Then, be ready to answer your preference for movie using "〜けど".

Task 3: 会話のれんしゅう

<Person A>
Invite your partner to go out for dinner on the weekend. Make sure you ask his/her favorite food and suggest restaurant to go.
<Person B>
Answer with your own answers!

Figure 5. Sample set of RTS activities

Post-experimental Perception Survey

At the end of the semester, the students were required to answer an online survey to investigate their perceptions of RTSs. There were eight questions about their preference, sense of community, helpfulness, and independent learning, and they were to respond on a five-point Likert-scale (1 as "Strongly disagree", 5 as "Strongly agree"). The survey was conducted

anonymously, and the web-based survey tool *Qualtrics* was utilized. See Appendix for the whole survey.

Procedures

In Week 1, the students took a pretest (EIT) on *Speak Everywhere* (*SE*). They recorded their responses on *SE*, and the instructor graded their performance after all students successfully finished the test.

In the present study, there were 12 RTSs in total including 5 instructor-less RTSs and 7 instructor-led RTSs. Each chapter contained two RTSs: one was instructor-less (RTS1), and the other was instructor-led (RTS2). Prior to every RTS, they completed all assigned homework (both speaking tasks and writing tasks) and submitted them to *SE* and LMS. For the first chapter, since it was the first RTS, the instructor supervised the RTS1 in addition to the RTS2. From the second chapter on, RTS1 was done without the instructor throughout the semester.

At the beginning of RTS1, the instructor joined the meeting for 2-3 minutes to check their attendance and whether or not they have any questions. After confirming that, one student started screen sharing, the instructor left the RTS and students began the activities. When they finished a RTS, the one that recorded video sent the video link to the instructor via email, and the instructor watched it immediately to give feedback as needed.

At the end of the semester, students took a posttest (EIT) on *SE*. There were 10 sentences to repeat and students were required to record their responses under the supervision by the instructor on *Zoom*. In addition to the posttest, students took a post-experimental perception survey online.

To examine the homogeneity of the two groups before the students received treatment, the independent *t*-test was employed. The mean scores of the pretest were compared to see whether there was a significant difference or not between the two groups: the group that received the previous curriculum, and the group in the present study. Once the posttest was completed, a one-way analysis of covariance (ANCOVA) was conducted to compare the posttest scores between the two groups while taking the pretest scores into consideration. For the statistical analyses, the statistical analysis software application *Statistical Package for Social Science* [SPSS] 16.0 was utilized. For this study, the level of significance α was set to 0.05.

RESULTS AND DISCUSSION

In this chapter, the present author will present the results of the present study and discuss what we found in the following order: 1) improvement of oral proficiency, 2) students' perception, and 3) students' behaviors and productions.

Improvement of Oral Proficiency

Research Question 1 : Is the instructor-less synchronous session as effective as the instructor-led session in improving students' speaking skills?

In order to examine Research Question 1, the present study tested the following hypothesis.

- Hypothesis 1: The control group's posttest mean score is not significantly different from the experimental group's posttest mean score.

Analysis of Pretest Scores

Before the statistical analysis of the posttest was done, an analysis of the pretest scores was undertaken to test the homogeneity of the two groups. The pretest scores of the 13 students who took the course in 2020 were compared to those of the 11 students in 2017 using the Independent Samples t-test. Table 3 presents descriptive statistics of the pretest scores.

Table 3. Group Statistics

Group	N	Mean	Std. Deviation
2017 (Control)	11	76.63	20.67
2020 (Experimental)	13	90.07	13.23

The results of the Levene's Test indicated that equal variances can be assumed, fulfilling the requirement of the *t*-test.

Table 4. Levene's Test for Equality of Variances

F	*p*
2.388	.137

The Independent Samples *t*-test was performed comparing the pretest scores between the two groups. The results showed that there was no significant difference, as seen in Table 5.Table 5.

Table 5. Results of Independent *t*-test

	t	*df*	*p*	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
pretest	-1.927	22	.067	-13.44056	6.97510	-27.90603	1.02491

This confirms that the oral proficiency of the two groups were the same at the beginning of their respective semester.

Analysis of Posttest Scores

The posttest was conducted during the 14th week of the semester. Table 6 presents descriptive statistics of the posttest.

Table 6. Descriptive Statistics of Posttest

Dependent Variable: posttest

group	Mean	Std. Deviation	N
2017	70.0000	22.36515	11
2020	80.6154	16.40396	13
Total	75.7500	19.67397	24

Next, the results of the posttest were analyzed using ANCOVA. Before conducting ANCOVA, the present author tested whether or not the results meet the following assumptions for ANCOVA: 1) Normality, 2) Homogeneity of Variance, 3) Homogeneity of Regression Slopes, and 4) Linearity.

First, the present author tested whether or not the posttest scores are normally distributed within each group. The results (Table 7Table 7) indicated that they are normally distributed.

Table 7. Tests of Normality

	group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	p	Statistic	df	p
posttest	2017	.189	11	.200[*]	.941	11	.529
	2020	.177	13	.200[*]	.904	13	.153

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Additionally, Figure 6 demonstrated that there were no outliers in each group.
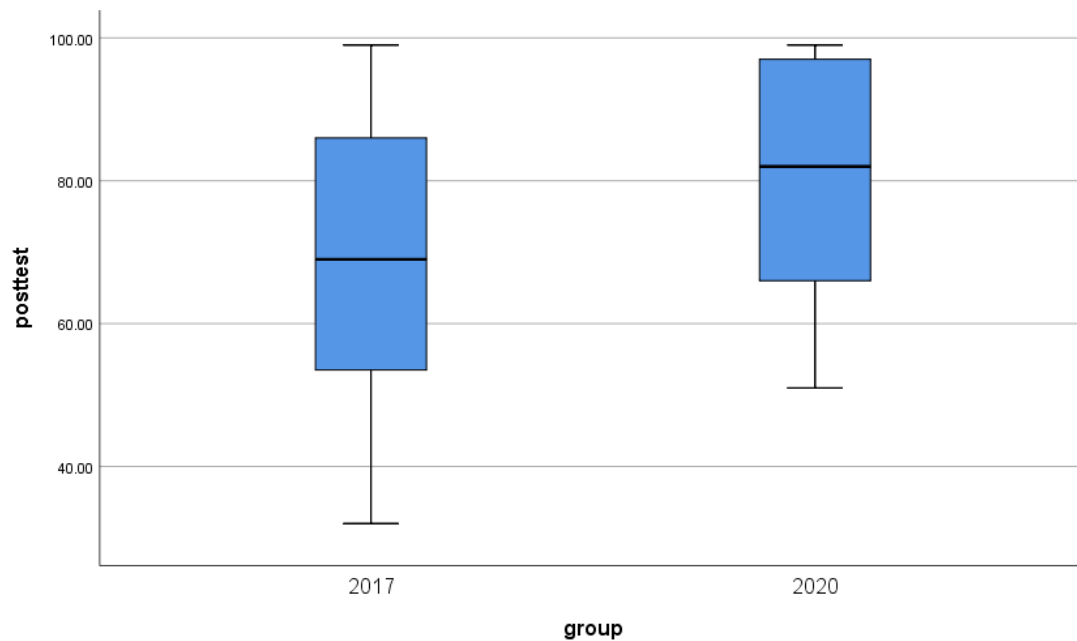
Figure 6. Box Plots of the Posttest Scores

Second, Levene's Test of Equality of Variances was conducted in order to test the homogeneity of variance assumption. The result was not significant ($p = .598$), and it can be assumed that the data has met the assumption of homogeneity of variances.

Table 8. Levene's Test of Equality of Error Variances

Dependent Variable: posttest			
F	$df1$	$df2$	p
.286	1	22	.598

Third, the present author tested the association between the pretest scores and the posttest scores is equal within each group. Table 9Table 9 indicated that the relationship between pretest and posttest is similar in the two groups ($p = .973$). It means that the data have met the third assumption.

Table 9. Tests of Between-Subject Effects

Dependent Variable: posttest

Source	Type III Sum of Squares	df	Mean Square	F	p	Partial Eta Squared
Corrected Model	6014.629[a]	3	2004.876	13.885	.000	.676
Intercept	1.034	1	1.034	.007	.933	.000
group	1.272	1	1.272	.009	.926	.000
pretest	4740.457	1	4740.457	32.830	.000	.621
group * pretest	.168	1	.168	.001	.973	.000
Error	2887.871	20	144.394			
Total	146616.000	24				
Corrected Total	8902.500	23				

a. R Squared = .676 (Adjusted R Squared = .627)
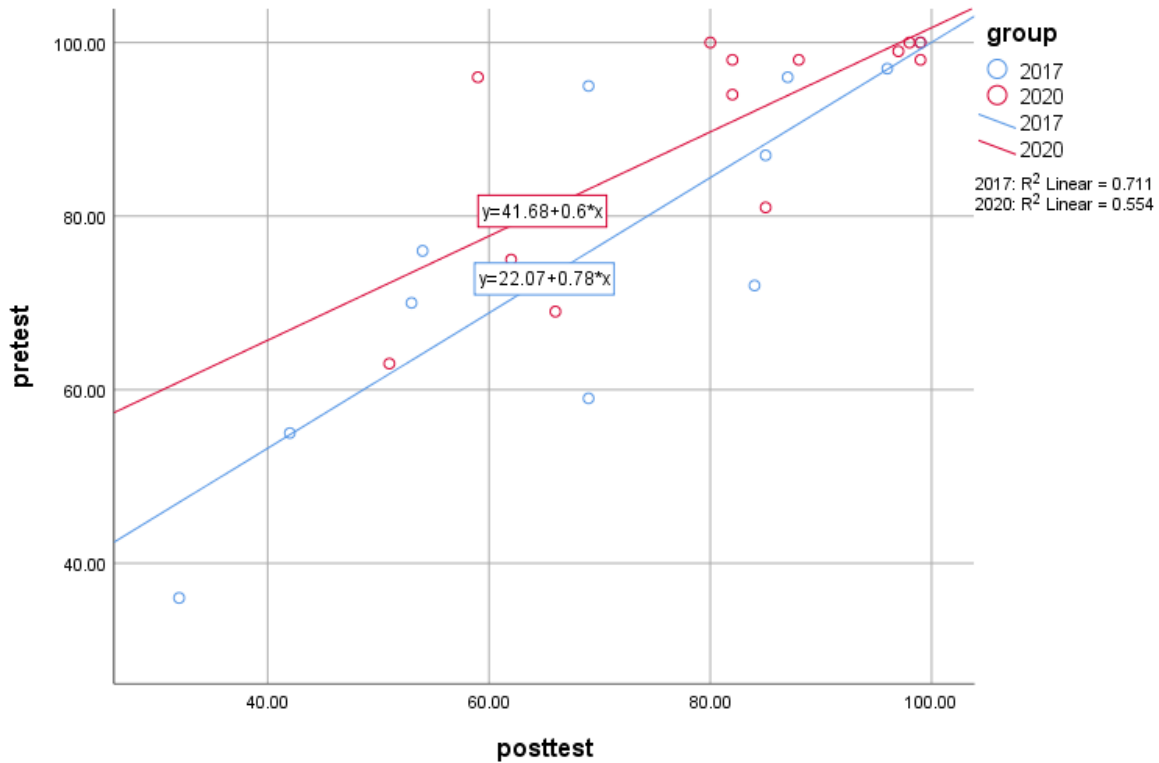
Figure 7. Homogeneity of Regression Slope

Forth, from this result, it can be seen that the last assumption is also confirmed because there are no deviations from linearity.

Results of ANCOVA

Finally, Hypothesis 1 was examined. A One-way ANCOVA was conducted to determine a statistically significant difference between the 2017 class and the 2020 class (independent variable Group) on their posttest scores (dependent variable) controlling for their pretest scores (covariate). Table 10 shows the ANCOVA results and the p-value for the independent variable Group is .639 and is not significant. The present study thus fails to reject Hypothesis 1 and must accepts that the two groups do not differ on their posttest mean, which would mean that the instructor-less synchronous session is as effective as the instructor-led synchronous session in improving students' speaking skills.

Table 10. The Results of ANCOVA

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	25132.793	2	12566.397	20.854	.000	.665
Intercept	1.695	1	1.695	.003	.958	.000
Pretest	22615.975	1	22615.975	37.532	.000	.641
Group	136.671	1	136.671	.227	.639	.011
Error	12654.165	21	602.579			
Total	660213.000	24				
Corrected Total	37786.958	23				

Students' Perceptions

Research Question 2: Does the instructor-less synchronous session help students develop learner autonomy and a sense of community?

To examine Research Question 2, the following hypotheses were tested.

● Hypothesis 2 : The students felt that the instructor-less synchronous session encouraged them to be independent learners.

● Hypothesis 3: The instructor-less synchronous session made the students realize the importance of independent learning.

● Hypothesis 4: The instructor-less synchronous session made them feel a sense of community working on tasks with a partner.

First of all, the participants were asked whether or not they enjoyed the instructor-less sessions, and whether they thought the sessions were helpful for their speaking practice in Japanese. The results (Table 11) indicate that approximately 80% of the students thought that they enjoyed the instructor-less sessions, and the sessions helped them to practice speaking Japanese.

Table 11. Results of the Perception Survey: Helpfulness

Item	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	M
I enjoyed the peer work sessions	10	1	1	-	1	4.5
The peer work sessions helped me to practice speaking Japanese.	10	2	-	-	1	4.5

Second, they were asked whether or not they thought they spoke more Japanese during the instructor-less sessions. Almost half of the students answered that they felt they spoke more Japanese in the instructor-less sessions than in the instructor-led sessions, while only one student disagreed.

Table 12. Results of the Perception Survey: Use of Japanese

Item	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	M
I spoke more Japanese during the peer work sessions than during instructor-led sessions.	2	4	6	1	-	3.5

Third, in order to test Hypothesis 2 and Hypothesis 3, the present author asked them whether they thought the instructor-less sessions made them realize the importance of independent learning or not. Also, they were asked whether or not they felt that the instructor-less sessions forced them to become an independent learner. Their responses, summarized in Table 13, showed that more than half of them felt that they realized the importance of independent learning throughout the treatment. This result confirms Hypothesis 2. Most students answered that they thought the instructor-less sessions forced them to become an independent learner, and Hypothesis 3 was also confirmed. These data demonstrated that the instructor-less online synchronous sessions have positive effects on students' awareness as independent learners.

Table 13. Results of the Perception Survey: Independent Learning

Item	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	M
The peer work sessions made me realize the importance of independent learning.	8	3	2	-	-	4.4
The peer work sessions forced me to become an independent learner.	9	4	-	-	-	4.6

Lastly, in order to test Hypothesis 4, the survey included an item asking them whether or not they felt a sense of community while they were working on tasks with a partner. As can be seen in Table 14, their responses showed that all but two of the students felt a sense of community. Hypothesis 4 was also confirmed.

Table 14. Results of the Perception Survey: Sense of Community

Item	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree	M
I felt a sense of community working on tasks with my partner.	6	5	-	1	1	4.0

Additionally, the survey included a question asking them which synchronous session mode they preferred. The results showed that 30% of the students responded that they liked the instructor-less RTSs better, while approximately 70% stated that they preferred the instructor-led RTSs (Table 15).

Table 15. Results of the Perception Survey: Preference

	Peer sessions	Instructor-led sessions
Which did you like better, peer work sessions or instructor-led sessions?	4	9

In terms of the preference, numerous reasons and comments were collected. Some students mentioned that they found themselves less pressured during the instructor-less RTSs. Interestingly, there was a student who pointed out that he wanted to have more instructor-less RTSs for spontaneous conversation practice. Also, several students answered that the instructor-less RTSs helped them to get to know their partners in Japanese.

Some students commented that they preferred the instructor-led RTSs because they cannot ask about grammar or vocabulary when they wanted to make sentences in Japanese in peer sessions. There was also a student who answered that the instructor-led RTSs were more convenient when they faced something that they were unsure about.

The results of the online survey provided additional evidence for the efficacy of the online synchronous session without the instructor. It shows that only slightly fewer than half of the students thought they spoke more Japanese in the instructor-less RTS than in the instructor-led RTS. The results indicate that the present study can confirm that the instructor-less synchronous session help students develop learner autonomy and a sense of community, affirming Research Question 2. In the next section, the present author investigated the participants' productions to see whether or not they actually used more Japanese.

Students' Behavior and Utterances

Research Question 3 : Do students use more Japanese in the instructor-less session than   in the instructor-led synchronous session?

To examine our Research Question 3, the following hypothesis was tested.

- Hypothesis 5: Students spoke the target language more in the instructor-less synchronous session than in the instructor-led synchronous session.

Their recorded conversations were analyzed to see their behaviors during instructor-less RTSs. There were mainly three findings from the analysis.

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1. Students spoke more Japanese in instructor-less RTSs

  In order to investigate students' productions of Japanese, 12 recordings from the instructor-less sessions in the last two chapters were collected, as well as 12 recordings of the instructor-led sessions in the last two chapters. First, the author computed the average length of each type of session (minutes). Second, the length of students' productions of Japanese (seconds) were measured excluding fillers and pauses. Lastly, each session type's average length of production of Japanese was divided by each session type's mean length to find how many seconds they produced Japanese per minute. Table 16 indicates the average length of Japanese production during each session.

Table 16. Students' Production of Japanese

	Instructor-led RTS	Instructor-less RTS
Use of Japanese /minute	26 seconds	40 seconds

  The data from the recordings showed that the students spoke more Japanese in the instructor-less RTSs than the instructor-led RTSs. In the instructor-led synchronous sessions, the students used Japanese for 26 seconds per minute on average, while they spoke Japanese for 40 seconds on average in the instructor-less sessions. These results confirm Hypothesis 5, and the answer for Research Question 3 is affirmative.

  Although the perception survey indicated that more than half of the students could not say that they spoke more Japanese during the instructor-less sessions, but in reality, the average data showed that the students used more Japanese when the session excluded the instructor.

2. Students did not use English unless it was necessary.

  During the instructor-less RTSs, students spoke mostly in Japanese. They used English when they discussed unsure grammar or vocabulary, but most students could proceed with the provided tasks in Japanese. Since some useful phrases such as "Can you scroll down?" and "I will ask you questions first" were provided for their information in advance, they actively used these phrases during the instructor-less RTSs.

3. Students completed tasks actively.

In the instructor-less RTSs, they were able to successfully complete tasks with their partners without the instructor. They managed to decide who starts a conversation, what to ask, and how to end the conversation. In the instructor-led RTSs, students could afford to be and many of them actually were passive because they could just wait for prompts and instructions from the instructor. However, compared to the instructor-led RTSs, students proceeded through the session actively in the instructor-less RTSs. As some students mentioned in the perception survey, they felt that they could speak more freely without any pressure when they interacted with their peers by themselves.

Another interesting behavior was that students taught each other when the partner faced problems. This could not have happened during the instructor-led RTSs because the instructor could have helped and given them solutions. Although a few students mentioned that they preferred the instructor-led RTSs because they could ask questions anytime, they could actually solve problems with peers when they were encouraged to be independent learners.

In sum, the findings provided evidence that the instructor-less online synchronous sessions have numerous positive effects on online language learning, specifically on oral proficiency, learners' awareness of independent learning, and a sense of belonging to a learning community.

CONCLUSION

This chapter presents a summary of the results, and discusses limitations of the present study, and future directions.

Summary of the Results

The present study examined the effectiveness of the instructor-less RTSs and it has confirmed that the new RTS format is as effective as the previous RTS format.

The study also examined the participants' perceptions and the results of the online post-experimental perception survey indicated that approximately 80% of the students enjoyed the new RTSs, and they thought the instructor-less RTSs were helpful for their speaking practice. Also, the results showed that they thought the new RTSs helped them to become independent learners, and most students seem to have realized the importance of independent learning under the circumstances. Although more than 70% of the students answered that they preferred the instructor-led sessions, the results found that they thought the instructor-less sessions facilitated learners' independent learning. Also, they thought that collaborating on speaking activities together in Japanese made them feel a sense of community.

Additionally, the students' behaviors in the recorded instructor-less RTSs were analyzed. Expectedly, students used more Japanese in the instructor-less RTSs than in the instructor-led RTSs. The use of English was limited to situations where it was necessary. Most of the pairs helped each other when they were faced with a problem. Interestingly, they helped the partner using their own knowledge in the instructor-less session. No such instances were found in the instructor-led RTSs.

Limitations of the Present Study

The present author is aware that the present study has at least two limitations.

First, the number of the participants was small. Each group contained just over 10 students so that the generalizability of the results is limited. Unfortunately, it was not possible to collect data from a larger number of participants in the present study. It is hoped to replicate the study with a greater number of students not only at the Japanese 102 level but also in higher-level courses in the future.

Second, the participants' backgrounds were different between the two groups. In the control group, 90% of the students were senior students, while there were many freshmen in the experimental group. Furthermore, their native languages were different. More than 70% of the participants in the control group were Chinese native speakers, while 70% of the experimental group' participants were native speakers of English. In future studies, the efficacy of the instructor-less synchronous session with groups that have similar language backgrounds should be examined.

Future Directions

It is fundamental that we develop an efficient online language learning curriculum for both educators and learners. As we discussed in Chapter 2, online language learning tends to focus less on peer interactions, but students should be able to feel a sense of community in online courses as in face-to-face courses. The newly developed online course curriculum with an instructor-less RTS should encourage students to interact with peers in the target language. In the present study, one session contained only two students in order to compare to the control group. However, in future studies, investigation of group interactions is necessary. Specifically, what if one session contains more than two students? Will they communicate in the target language as in the present study? Would it be as effective as the previous study? Future investigation of online group synchronous sessions involving three or more students should be pursued.

Also, since the present study aimed to examine the efficacy of the instructor-less synchronous session in terms of students' improvement of oral proficiency, the study employed EIT for the measurement. As discussed earlier, many researchers and language testers

demonstrated the validity and the reliability of EIT in language testing. The present study found a considerable number of findings not only about their improvement of oral proficiency, but also in terms of students' behavior and interaction among peers in the target language. The investigation of peer-peer collaboration in online language learning should be continued in future studies. In particular, does the instructor-less RTS have a positive effect on students' communication skills in the target language? Will students be more confident in themselves in terms of communication in the target language after the treatment? Would it be different if we employ an interactive test such as an interview test (Q & A, Role-play) for a measurement? In future studies, it is hoped to test students' improvement of interaction skills and confidence after the treatment.

APPENDIX A. EIT ITEMS

Item	Stimulus Sentence
1	これは英語<ruby>英語<rt>えいご</rt></ruby>で何<ruby>何<rt>なん</rt></ruby>といいますか。
2	シドニーは今<ruby>今<rt>いま</rt></ruby>午後<ruby>午後<rt>ごご</rt></ruby>七時<ruby>七時半<rt>しちじはん</rt></ruby>です。
3	山田<ruby>山田<rt>やまだ</rt></ruby>さんの専攻<ruby>専攻<rt>せんこう</rt></ruby>は経営学<ruby>経営学<rt>けいえいがく</rt></ruby>です。
4	全然<ruby>全然<rt>ぜんぜん</rt></ruby>コーヒーを飲<ruby>飲<rt>の</rt></ruby>みません。
5	この辺<ruby>辺<rt>へん</rt></ruby>に銀行<ruby>銀行<rt>ぎんこう</rt></ruby>はありますか。
6	図書館<ruby>図書館<rt>としょかん</rt></ruby>は本屋<ruby>本屋<rt>ほんや</rt></ruby>のとなりにあります。
7	このりっぱなかばんはスミスさんのです。
8	学生会館<ruby>学生会館<rt>がくせいかいかん</rt></ruby>で日本<ruby>日本<rt>にほん</rt></ruby>の映画<ruby>映画<rt>えいが</rt></ruby>があります。
9	鈴木<ruby>鈴木<rt>すずき</rt></ruby>さんの大学<ruby>大学<rt>だいがく</rt></ruby>は有名<ruby>有名<rt>ゆうめい</rt></ruby>じゃありません。
10	家<ruby>家<rt>うち</rt></ruby>から学校<ruby>学校<rt>がっこう</rt></ruby>までバスで十三分<ruby>十三分<rt>じゅうさんぷん</rt></ruby>ぐらいかかります。

Item	Stimulus Sentence
1	一ヶ月<ruby>一ヶ月<rt>いっかげつ</rt></ruby>に一冊<ruby>一冊本<rt>いっさつほん</rt></ruby>本を読<ruby>読<rt>よ</rt></ruby>みます。
2	バナナを百本<ruby>百本<rt>ひゃっぽん</rt></ruby>食<ruby>食<rt>た</rt></ruby>べたことがあります。
3	日本語<ruby>日本語<rt>にほんご</rt></ruby>の授業<ruby>授業<rt>じゅぎょう</rt></ruby>は難<ruby>難<rt>むずか</rt></ruby>しそうです。
4	リーさんは目<ruby>目<rt>め</rt></ruby>が茶色<ruby>茶色<rt>ちゃいろ</rt></ruby>くて髪<ruby>髪<rt>かみ</rt></ruby>が長<ruby>長<rt>なが</rt></ruby>いです。
5	ちょっと苦<ruby>苦<rt>にが</rt></ruby>いけど日本<ruby>日本<rt>にほん</rt></ruby>のお茶<ruby>茶<rt>ちゃ</rt></ruby>が好<ruby>好<rt>す</rt></ruby>きです。
6	暇<ruby>暇<rt>ひま</rt></ruby>な時<ruby>時<rt>とき</rt></ruby>は一日<ruby>一日<rt>いちにち</rt></ruby>に二度<ruby>二度<rt>にど</rt></ruby>犬<ruby>犬<rt>いぬ</rt></ruby>の散歩<ruby>散歩<rt>さんぽ</rt></ruby>をします。
7	日本語<ruby>日本語<rt>にほんご</rt></ruby>の先生<ruby>先生<rt>せんせい</rt></ruby>はとても親切<ruby>親切<rt>しんせつ</rt></ruby>だと思<ruby>思<rt>おも</rt></ruby>います。
8	そのアパートはきれいじゃなかったけど安<ruby>安<rt>やす</rt></ruby>かったです。
9	よく赤<ruby>赤<rt>あか</rt></ruby>いジャケットを着<ruby>着<rt>き</rt></ruby>ている人<ruby>人<rt>ひと</rt></ruby>がアリスさんです。
10	母<ruby>母<rt>はは</rt></ruby>はりんごが嫌<ruby>嫌<rt>きら</rt></ruby>いなのでオレンジを九<ruby>九<rt>ここの</rt></ruby>つ買<ruby>買<rt>か</rt></ruby>いました。

APPENDIX B. ONLINE PERCEPTION SURVEY

RTS

Q1
I enjoyed the peer work sessions.

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

Q2 The peer work sessions helped me to practice speaking Japanese.

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

Q3 I spoke more Japanese during the peer work sessions than during instructor-led sessions.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q4 The peer work sessions made me realize the importance of independent learning.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q5 The peer work sessions forced me to become an independent learner.

○ Strongly agree (8)

○ Somewhat agree (9)

○ Neither agree nor disagree (10)

○ Somewhat disagree (11)

○ Strongly disagree (12)

Q6 I felt a sense of community working on tasks with my partner.

○ Strongly agree (1)

○ Somewhat agree (2)

○ Neither agree nor disagree (3)

○ Somewhat disagree (4)

○ Strongly disagree (5)

Q7 Which did you like better, peer work sessions or instructor-led sessions?

○ Peer work sessions (1)

○ Instructor-led sessions (2)

Q8 Why?

_____

_____

_____

_____

_____

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