The Impact of Synchronous Online Foreign Language Teaching on Student Satisfaction and Motivation

Hiroyuki TODA

1 Introduction

The sudden outbreak of COVID-19 in early 2020 forced educational institutions around the world to stop providing lectures in their classrooms and shift their educational method to online teaching due to the closure of their premises. Undergraduate foreign language courses in Japanese universities, which are generally required for graduation, were not exceptions. While the crisis imposed an overwhelmingly stifling experience on students, teachers had to overcome their own challenges as well because they had little prior experience of teaching online: 84% out of some 70 attendees responding to a survey conducted during an online conference hosted by the Kanto Chapter of JACET (Japan Association of College English Teachers) answered that they had never taught online. (JACET Kanto, 2020) Although some studies conducted across a variety of subjects before the crisis suggest that shifting of face-to-face classroom teaching (hereafter "F2F") to partial or complete online teaching does not negatively impact academic performance or substantially compromise motivation or satisfaction (Francescucci & Foster, 2013; Francescucci & Rohani, 2018; Islam, 2019; Motycka, Onge, & Williams 2013, and Skylar, 2009), these classes were taught with sufficient preparation and in the absence of any immediate threat of a pandemic or a natural disaster, and were for subjects other than foreign language education (such as teacher training, marketing, pharmacy, reading method, and nursing). As foreign language classes often involve simultaneous oral activities such as pair work, group discussion, peer review, and immediate feedback from the instructor, switching from F2F to online teaching may have

different effects. In addition, few studies on the impact of this switch were carried out in Japan. This research, therefore, aims at clarifying these issues by analyzing quantitative and qualitative data collected from some 300 university students in Japan attending foreign language classes.

Even before the COVID-19 crisis, online teaching had been around for some time in Japan under the category of so-called "media lectures" or remote lectures. They have been approved as an official substitute for F2F ever since March 1998, when the Standards for Establishment of Universities was amended; 30 out of 124 credits required for graduation became earnable by attending media lectures. This was followed by another amendment of the Standards allowing an additional 30 (to a total of 60) credits in March 1999. "Media lectures" are defined as those delivered by using different media such as satellites or optical fiber and involving text, audio, still or moving images in an integrated manner, assuming that they are done synchronously and bilaterally and that responses from the instructor are readily available if not simultaneously. However, universities in Japan had been reluctant to use media lectures as the replacement for F2F even though it had become technically feasible. Another amendment of the Standards for Establishment of Universities in March 2001 allowed media lectures to be delivered through the internet. This made it possible for the universities to offer internet-based synchronous and bilateral courses and for the students to learn from home using their personal computers. Yet the fact remained that it was legally required that 64 out of 124 credits still needed to be earned by attending physical classes. Graduation from universities (except correspondence courses) solely by learning online had not been legally possible.

This situation changed dramatically with COVID-19. Many universities that had been hesitant to introduce media lectures stopped questioning whether to implement them to replace F2F but rather started to ask how to implement them. They were forced to deliver what is called "online lectures" because it was no longer possible to provide F2F and they were still required to keep providing their classes without compromising the quality of education. Faced with this challenge, many schools introduced three forms of online teaching: synchronous online teaching (hereafter "SOT"), asynchronous online teaching (also called

"on-demand classes" in Japan and hereafter "OD"), and assignment-submission type of instruction (hereafter "AS"), in which assignments in text or printed form were sent from instructors to students via each school's learning management system, email, or other written form of communication online. According to a survey by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT), as of July 1, 2020, out of 1,069 universities and specialized vocational high schools in Japan, 896 were providing some form of online instruction, of which 254 were solely relying on online teaching; most educational institutions in the country started to implement online teaching (MEXT, 2020). (While it is still required by law to attend classroom lectures, MEXT seems to have been obliged, at least temporarily, to lift the regulation that "media lectures" can only offer up to 60 credits).

SOT uses video conferencing applications such as Zoom, Google Meet, or Webex, which allow the real-time exchange of information and verbal communication between the instructor and the students or among students. The applications tend to have various functions which aim at duplicating a classroom environment, such as online chat, screen sharing, whiteboard, breakout rooms, or polling. Asynchronous teaching or OD typically involves uploading audiovisual teaching materials such as pre-recorded lectures from the instructor to the students and having students submit assignments to the instructor after reviewing the materials. The former involves direct and interactive exchange of messages with learners, while the latter often does not. In AS, the third option, students rarely (if ever) have the chance to see the face or hear the voice of the instructor. Some classes are conducted by combining the three teaching methods.

What is the optimal form of online classes to maintain or even improve the quality of education provided by F2F? While one of the most important factors in answering this question is the contribution of the teaching mode (whether online or offline, synchronous or asynchronous) to the academic performance of the participating learners, it is equally important to measure their contribution to student satisfaction and motivation. The purpose of this study is to measure the effects of fully online instructions, both synchronous or asynchronous or a combina-

tion thereof, on these psychological aspects when compared with traditional classroom instruction. This research also aims to identify the type of instructions/classes suitable for online teaching, especially focusing on foreign language education in Japan, in which the researcher is mainly engaged.

2 Literature Review and Research Questions

2.1 Online Teaching

Well before the outbreak of the COVID-19 crisis, some researchers conducted studies on preferences, level of improvement in understanding instructional content, satisfaction, motivation, and engagement on the part of students by type of teaching.

Skylar (2009) conducted a 10-week hybrid teacher training course combining two on-site classes, four synchronous online classes, and four asynchronous online classes (AS type), in which the students took synchronous and asynchronous classes alternately between the 2nd and 9th week. The result of a student satisfaction survey showed that 73.2% of the participants would prefer to take synchronous web-based classes over text-based classes. Approximately 80% of the students felt that they had an increased understanding of the material and attained better performance on quizzes after attending synchronous online classes. Francescucci and Foster (2013) conducted a survey in an urban university in Canada and compared two groups of marketing students: a group of students who attended VIRI (Virtual, Interactive, Real-Time, and Instructor-Led) and face-to-face classes alternatively and a group who took F2F throughout the academic semester. In this study, the former group showed higher interest in the subject. Motycka, Onge, and Williams (2013) reviewed studies done in six universities in the U.S. and two universities in the U.K. and reported that the University of Florida College of Pharmacy decided on a blended approach mixing synchronous and asynchronous online teaching with traditional classroom teaching. Francescucci and Rohani (2018) confirmed that a completely synchronous online marketing course achieved the same level of academic performance results as a completely face-to-face course with slightly less interest in the subject on the part of the student. Islam (2019) indicated that synchronous web

conferencing classes combined with asynchronous text-based lecture materials increased the learners' understanding of the course material in a reading course at a graduate school in a U.S. university.

In Japan, there was little research before the crisis and only some post-COVID-19 surveys are available. One of them at Shonan Fujisawa Campus of Keio University conducted in 2020 both to the faculty and the students (117 faculty members and 377 students) in the middle of the outbreak of the COVID-19 crisis disclosed that students were relatively more favorable than faculty members to online classes, and approximately half of the faculty members and 70% of the students expressed their desire that the university would continue to provide online classes even after the crisis (Ueda, 2020). Another survey was conducted in the middle of the Corona period by eLearning Strategy Research Institute, a private research institute, in June 2020 (eLearning Strategy Research Institute, 2020). This survey was conducted with teaching faculty from 100 universities in Japan, with each faculty member representing their respective universities. The survey reported that many faculty members predict that blending online (whether synchronous or asynchronous), and traditional face-to-face teaching will be the trend in university education in the years ahead.

2.2 Student Motivation

Many studies have been conducted on the relation between foreign language education and student motivation. Ichikawa (1995) suggested that identifying learners' motivational patterns could help design a suitable instructional method for them. As this research is cited by many other scholars exploring this issue surrounding foreign language education in Japan, including Wistner and Sakai (2012), the present study also uses it as a reference point. Ichikawa developed a model of learning motivation by collecting comments from university students on their reasons for studying and classified them into six motivational categories from the standpoint of two factors: the degree of importance of the learned content, and its utility. Based on these two factors, those motivations that emphasize the importance of the learned content are fulfillment motivation, training motivation and practicality motivation, whereas those that place emphasis

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on the utility of the learned content are relation motivation, self-respect motivation and practicality motivation. Each of these is defined in Table 1. Ichikawa interpreted the first three motivations as intrinsic motivations and the latter as extrinsic motivations and he acknowledged that it was intrinsic motivations rather than extrinsic motivations that more strongly drive learners' willingness to study. Ichikawa's 1995 paper was published in Japanese and the definitions listed in Table 1 have been translated by the current author.

Table 1. Types of Motivation (Based on Ichikawa, 1995)

Motivation Category	Definition
Fulfillment motivation	The tendency of learners to become motivated because of the joy they feel in studying.
Training motivation	The tendency of learners to become motivated because of their desire to train their intellectual ability.
Practicality motivation	The tendency of learners to become motivated because of their desire to use the learned content for their work and everyday life.
Relation motivation	The tendency of learners to become motivated because of their relationship with their peers; they want to study because others are making efforts as well.
Self-respect motivation	The tendency of learners to become motivated because of their desire to win a competition or earn the respect from their peers.
Reward motivation	The tendency of learners to become motivated because of their expectation that learned content can help them earn rewards.

2.3 Research Questions

All of the studies on online teaching before the crisis above covered the areas of interest of the researchers involved, not foreign language education for university students in Japan. Two surveys conducted during the crisis in Japan did not focus on any specific subject. Ichikawa's research on motivation did not attribute the emergence of online teaching as a source of raising or lowering student motivation. Therefore, the purpose of this research is to explore the impact of online teaching on the satisfaction and motivation of the students who learn foreign

languages in Japan. Accordingly, this research investigates the following three research questions:

RQ1: How do students evaluate synchronous online foreign language classes compared to other online teaching methods from the point of their satisfaction?

RQ2: Do students think synchronous online teaching is suitable for foreign language classes and on what criteria?

RQ3: Do synchronous online foreign language classes affect student motivation to study further?

3 Methods

3.1 Foreign Language Courses

During the spring semester (April to August) in 2020, this researcher provided 13 synchronous online foreign language courses to approximately 300 students in four different private universities in Japan. The courses ranged from some focusing on acquiring business (business in general and finance) concepts while aiming at improving the students' English proficiency; some aiming at brushing up public speaking skills while enhancing the students' reading capacity in English; some focusing on elementary English related to medical professions; some focusing on upgrading scores in TOEIC, a standard English test; and others focusing on teaching the basics of business email writing in English.

In all of the classes taught, the researcher used Zoom, a video conferencing application, as the main tool for instruction, using various functions supported by the application including chat, whiteboard, breakout rooms, polling, mute (both audio and visual), and lecture recording. In all of the courses except the ones focusing on business-related topics and business email writing, the researcher focused on raising students' awareness of the phonetic aspects of English and encouraged the students to speak in front of fellow students by asking each one of them at least one question or having them read texts aloud during a lecture. In business-related courses, to raise the awareness of the importance of acquiring fundamental technology skills for online learning, this researcher requested the learners to deliver group presentations on Zoom, which required them to commu-

nicate using a variety of communication tools in order to complete the assignment by the due date. Google Classroom, a learning management system developed by Google, was used to distribute learning materials on an asynchronous basis to supplement the coursework done in synchronous classes as well as to announce homework assignments and other information to the students. Those materials included YouTube links, PowerPoint slides, extracts from the assigned textbooks, and information on course scheduling. Recorded classes and accompanying notes were also uploaded to help the students review the classes afterward or catch up with the classes in case they had missed the classes. Every lecture was followed by the submission of online review sheets using Google Forms, which students were asked to submit shortly after each lecture. The comments in the review sheets were used by the lecturer to respond to their inquiries in the following lecture, accept and address the requests, and modify the content of the instruction as needed. Throughout the semester, about 4,000 comments were collected.

3.2 Post-class Survey

Towards the end of the semester, an online survey was conducted using Google Forms with 300 students who participated in the classes above, after 12 to 15 classes had been conducted in each course. The purpose of the survey was to review what students had experienced about the classes in comparison with other types of courses provided during the same semester (by other instructors) as well as with traditional face-to-face classroom instructions that had been experienced in the past. Students consented to respond to the survey and were assured that the survey was conducted anonymously and that their responses would not affect the evaluation of their academic performance. Close to 80% of the 300 students responded to the survey, of which 52.3% were male and 47.7% were female. The participants were composed of 57% first-year students, 16% second-year students, 21% third-year students, and 5% fourth-year students.

The questions in the survey focused on the impact of student satisfaction and motivation with regard to the synchronous online instructions provided and used a substantial part of the questions used in Francescucci and Foster (2013) with some additions and modifications to adjust to the purpose and circum-

stances surrounding this research. Assuming that many specific features available in the web-conferencing application could be relevant to learner satisfaction, the questionnaire included various questions concerning those features. In addition, in order to measure changes in aspects of student motivation, the questionnaire also incorporated questions used in Ichikawa (1995). Finally, the survey was followed by interviews conducted with the students who attended this researcher's classes.

3.3 Analysis

Based on the survey, post-lecture online review responses, and interviews, both quantitative and qualitative analyses were done. The quantitative analysis used the numerical information gathered via Google Forms and the qualitative analysis used the information collected from the comments of the students in the survey. The comments and feedback were categorized by using an informal coding system developed by the author for this study.

4 Results

4.1 Student Satisfaction

In the post-class survey, the students were asked to express their level of satisfaction on SOT in five levels from "Strongly Agree" to "Strongly Disagree". The evaluation on various aspects were measured with the mean based on a 5-point Likert scale (5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree). Overall evaluation was rather favorable, with over 90% of the respondents replied that synchronous classes were useful for their foreign language study (Mean = 4.35) as shown in Table 2. Close to 80% answered that they enjoyed the class and around 70% (Mean = 4.12) answered that they found the class motivating (Mean = 3.91). On the suitability of SOT to foreign language classes, over 70% of the students replied in favor of SOT (Mean = 4.04). While around two-thirds of the respondents expressed that they would consider taking a course with SOT, some indicated that SOT may not be appropriate for other subjects (Mean = 3.82). Close to 90% of the respondents said that they found it easy to connect or login to the online classes (Mean

= 4.50) and close to 80% replied that it was easy for them to keep track of the coursework (Mean = 4.16).

Table 2. Mean and Number of Respondents

	Score					
	Mean	5	4	3	2	1
Synchronous online classes were useful for my foreign language study.	4.35	109	113	20	1	0
I enjoyed the synchronous online foreign language classes.	4.12	93	97	43	9	1
Synchronous online foreign language classes were motivating.	3.91	66	105	58	11	3
Synchronous online teaching is suitable for foreign language classes.	4.04	94	84	44	20	1
I would consider taking a course with synchronous online teaching.	3.82	73	87	52	28	3
I would prefer taking synchronous online teaching classes other than foreign language classes.	3.46	54	69	72	30	18
I found it easy to connect/ login to the online classes.	4.50	160	52	24	6	1
I found it easy to keep track of when classes were online.	4.16	111	74	46	10	2

5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree

4.2 Supporting Functions

The respondents were requested to evaluate various videocon-ferencing functions used in the classes. They responded in five levels from "Strongly in favor of the function" to "Strongly against the function". The evaluation of the various aspects was measured against the mean based on a 5-point Likert scale (5 = Strongly in Favor, 4 = In Favor, 3 = Neutral, 2 = Against, 1 = Strongly Against). As Table 3 indicates, students generally favored the usage of various functions used in the classes with all the func-tions scoring a mean over 4. Audio and video mute were the most popular among all.

Table 3. Evaluation of Videoconferencing and Other Functions

	Mean	5	4	3	2	1	DK
How do you rate the chat function?	4.23	107	78	35	8	1	14
How do you rate the breakout room function?	4.07	91	46	40	11	5	50
How do you rate the poll function?	4.11	75	49	44	0	4	71
How do you rate the whiteboard function?	4.10	74	57	28	7	5	72
How do you rate the screen sharing function?	4.53	156	67	12	7	1	1
How do you rate the lecture recording function?	4.46	140	57	28	2	1	1
How do you rate the audio mute function?	4.71	185	39	15	0	0	4
How do you rate the video mute function?	4.66	165	44	12	1	1	20
How do you rate hand raise function?	4.10	86	45	51	5	2	54
How do you rate the "like" function?	4.20	101	48	52	3	1	38
How do you rate the "applause" function?	4.17	90	50	44	4	2	53
How do you rate material distribution by Google Classroom?	4.16	117	70	37	13	5	1
How do you rate online quizzes?	4.13	77	55	31	6	4	70

5 = Strongly in Favor, 4 = In Favor, 3 = Neutral, 2 = Against, 1 = Strongly Against, DK = Don't Know

4.3 Comparison of Four Teaching Methods
— What Quantitative Data and Transcriptive Data Show

The questionnaire asked the students to compare and rank four types of learning methods from various aspects. Overall popularity was measured by the mean of the ranking of each teaching style as shown in Table 4. Four points were allocated to the 1st rank and accordingly three points to the 2nd, two points to the 3rd, and one point to the 4th, respectively.

Table 4. The Popularity of Teaching Methods Measured by Mean

Rating Criterion	Ranking Score	Ranks according to Mean			
		1 4	2 3	3 2	4 1
Learning was enjoyable.		F2F	**SOT**	OD	AS
Mean		3.41	**3.03**	2.20	1.32
Learning was effective.		F2F	**SOT**	OD	AS
Mean		3.35	**2.77**	2.34	1.57
It was easy to attend		OD	**SOT**	AS	F2F
Mean		3.05	**2.74**	2.57	1.83
It was less stressful.		OD	**SOT**	F2F	AS
Mean		3.01	**2.54**	2.45	2.04
It was easy to ask questions and make comments.		**SOT**	F2F	OD	AS
Mean		**3.12**	3.01	2.20	1.66
I would prefer to attend this type of teaching.		F2F	**SOT**	OD	AS
Mean		3.22	**2.76**	2.55	1.56

4 = 1st Rank, 3 = 2nd Rank, 3 = 3rd Rank, 1 = 4th Rank

4.3.1 Evaluation of SOT

The analysis of transcriptive data revealed that the popularity of SOT mainly comes from its convenience. 148 comments pointed out that the respondents liked the fact that they did not have to commute to the campus and that they were able to stay in bed until a few minutes before the commencement of their classes. Although many expressed their preference for F2F over SOT, they were fairly content with the capacity of SOT in replicating F2F; 46 respondents commented that the classes succeeded in nearly duplicating the quality of F2F classrooms. According to the comments, the reasons behind this evaluation in favor of SOT include synchronicity of communication, verbal corrections, and comments from the instructor, group discussion capability offered by breakout room function, online presentation using the screen sharing function. Also, 47 comments indicated that the private chat function attached to Zoom, the videoconferencing application, had facilitated interactive communication between the students and the instructor even better than F2F classes. Most of the respondents expressed that they had felt much easier

to ask questions by way of private chat function rather than in a F2F environment due to confidentiality.

The respondents also answered that SOT classes were far less stressful than F2F; they did not have to worry about being late for the class, about their attire, make-up, and posture during the class. Thirty-five comments were expressing this view. Audio and video mute functions contributed much to lessen the stress level of the students as well due to the anonymity they provided (11 comments).

Other advantages of SOT over other teaching methods include the following points: simultaneous information sharing is easy and convenient with screen sharing function and the ability to upload links directly to chat (22 comments); the lecture recording function made it possible for the students to review classes after the class or catch up on the classwork in case of absence (18 comments); breakout rooms brought group dynamism to the lecture enabling the students to socialize with each other, become aware of new ideas from peers, and nurtured class spirit (17 comments).

Sixteen respondents answered that SOT helped them concentrate on the lecture content partially because of the mute function, which enabled them to focus on what the lecturer or other students were saying, as the instructor tended to mute the voices of all the students except the ones who were responding to questions. Another reason for which SOT was effective in making the learners focus on the lecture was that they did not have to worry about copying the writings on the whiteboard as the post-lecture recording was usually available (16 comments). The students seemed to have felt proximity with the teacher. As they were sitting in front of their personal computers, they felt the actual distance from the instructor to be closer than when they were in a classroom. This made them focused on the instruction and made them feel like sharing the content of the coursework with the instructor rather than receiving it from them (13 comments).

SOT helped the students to maintain discipline and rhythm of their lives because they had to regularly "show up" to the classes (8 comments). One student commented that they were able to regard the course as an occasion to become accustomed to the latest IT technology, which could become very useful for

the post-COVID-19 era.

4.3.2 Evaluation of F2F

Overall, F2F seemed to be the top preference of the respondents. Many specifically pointed out the advantage of actually seeing the teacher face-to-face, and the consequent ease of communication in the classroom. A total of 152 comments referred to this. In F2F teaching, the instructor can conduct the classes while testing the reactions of the learners and try to increase or maintain the student engagement accordingly as appropriate. Also, students are able to use non-verbal cues such as eye contact, facial expressions, or gestures (77 comments). As they can acknowledge each other, they also felt a sense of participation and reality (11 comments) as well as proximity with each other (8 comments).

The second benefit of F2F that a total of 68 students referred to was its socializing function. In contrast to the online environment, where they are unable to start casual conversations with or ask questions to the peers, F2F provides them with the opportunity to do so. The classroom is a very important place for students to build a relationship with their peers.

This is closely connected to the third advantage of F2F: easiness of asking questions. In a face-to-face environment, the instructor can monitor the reactions of the learners and foster psychological safety among the students to enable them to feel that they should not be hesitant to ask any questions.

Another benefit of F2F is the group dynamics it offers. During the COVID-19 crisis, it seems that students felt dissatisfied with the fact that online teaching was not capable of offering group experiences and the joy of learning together, even if it was synchronous and provided the students with the opportunity to conduct group works such as breakout rooms (29 comments). Collaborative work also offers the learners the opportunity to be stimulated and motivated by their peers.

Other advantages mentioned by the respondents in the survey included the effect of F2F classes forcing them to concentrate on the subject at hand and learn in-depth without being annoyed by Wi-Fi lag or other connectivity issues, which increased the pure joy of learning. As in the case of SOT, some students commented that F2F helped them to maintain discipline and rhythm in their lives because they had to regularly show up to the

classes.

4.3.3 Evaluation of OD

Comments concerning the flexibility of OD far outnumbered the other comments. One hundred and fifty-one comments on this point from the students referred to the advantage of OD to allow them to study whenever and wherever they like. Many students pointed out that this flexibility of OD helped them manage their learning schedule. The comments on the flexibility were followed by 79 comments on the ability of OD to allow the students to review the coursework repetitively. Many students responded that this helped them deepen their understanding of the course content. Thirty-four comments were on the ability of OD to let them study at their own pace. As the pre-recorded course materials could be repeatedly played as many times as the students wished, this function enabled them to feel secure in their understanding of the materials.

4.3.4 Evaluation of AS

While AS was the least popular method among the four with 44 respondents replied that they did not see any advantages, many answered that AS promoted a deep understanding of the coursework due to the proactive research activities required to complete the assignments. At the same time, 20 students commented that the time to complete the assignment was generally much shorter than class hours. Asynchronicity worked well with the students because it allowed them to complete assignments anywhere and anytime, enabling them to budget their time according to their convenience. Other advantages of AS pointed out by the students include that it was not stressful unless they postpone the completion of many assignments until the due dates, and that it is immune from connectivity issues.

4.3.5 The Suitability of SOT for Foreign Language Classes
4.3.5.1 Synchronicity and Interactivity

The survey included a question that specifically asked the respondents if SOT was suitable for foreign language courses they took. As previously mentioned, 71.6% of the respondents replied that they thought SOT was suitable. When analyzed qualitatively, the number of comments in favor of SOT's suitabil-

ity for foreign language courses centered around some of their major expectations about the courses they attended. One is immediate responses and feedback from the instructor during the class, including pronunciation or other phonetic aspects of phrases and the level of understanding of the texts read. The students wanted to have immediate answers to their questions from the instructor. The second expectation was the audiovisual aspect of the courses. Many respondents replied that the mastery of foreign language proficiency required a considerable amount of actual speaking and listening practices. Those practices can be done most efficiently by using audiovisual tools and SOT can provide just that. The third aspect is a group experience. The students appreciated group discussions organized through the breakout room function provided by the videoconferencing application; they commented that they were motivated by listening to the excellent delivery of their peers, and that they became aware of new ideas and different perspectives, which helped them deepen their learning. The fourth aspect was repetitive practice, which is another requirement to master a second language. Repetitive practices as part of the coursework and recorded class activities (when offered as supplementary) helped them achieve this goal. The factor encompassing all six aspects above is synchronicity and interactivity. Many comments implied that F2F is the best option from this perspective. However, missing this option during the COVID-19 crisis, many respondents evaluated that SOT worked rather satisfactory as a replacement for F2F due to its capacity to offer synchronicity and interactivity.

4.3.5.2 Added value - Mute Functions and Proximity

Some of the functions of the videoconferencing applications offered a better environment compared to that in F2F. One such function was private mute, which made it easier for the students to ask questions compared to a normal classroom environment. The audio and video mute functions appeared to have allowed them to feel less self-conscious or nervous when making deliveries in front of all the classmates. The respondents also felt a proximity to the PC screen, which made them feel much closer to the instructor and the classmates than they are in a classroom, and this made it easier for them to read or see the materials com-

pared to a blackboard in the classroom.

4.3.5.3 Ubiquity

Further analysis revealed that the respondents found some of the functions that SOT provides were capable of supplementing some shortcomings of F2F. The primary advantage is that it is ubiquitous; the students can attend the class wherever they are except that it did not offer face-to-face communication (due to the requirements from most of the institutions to make video muting mandatory), that the course activities were occasionally disrupted by poor internet connection and that it did not sufficiently offer group dynamics equivalent to that provided by F2F.

4.4 Impact of SOT on Student Motivation

This research investigated whether SOT classes that the researcher conducted during the 2020 spring semester had any impact on the motivation of the students. To examine the effect of online teaching on each of the motivational categories described in 2.2 above, the questionnaire included statements as indicated in Table 5, with regard to which the questionnaire asked each respondent to what extent they agreed before (pre-semester) and after the semester (post-semester).

The answers were scored according to the degree of agreement on a 5-point Likert scale to each question (from Strongly Agree to Strongly Disagree). The scores for each question in the same motivational category were averaged and the resulting figure was used as the score for each motivational category. The pre-semester scores and the post-semester scores were compared by conducting a two-tailed t-test with a level of significance of 0.05 to investigate whether there were any changes in each motivational category. The result indicates that all six motivational categories showed differences that are statistically significant as indicated in Table 6. This suggests that SOT teaching by the researcher did have some impact on the motivation of students. The averages for two extrinsic motivations—relation and self-respect motivation—were lower, while the rest (one extrinsic motivation and three intrinsic motivations) were higher after the semester.

Table 5. Statement Relating Motivation Used in the Questionnaire

Motivation Type	Statements
Fulfillment	1. I study because I want to know new things. 2. I study because I want to be a person with rich knowledge.
Training	1. I study because I can train myself. 2. I study because I can know how to study.
Practicality	1. I study because I want to use what I learn in the future. 2. I study because what I learn will be useful in my life.
Relation	1. I take studying for granted as others do so. 2. I study as I would like to do it with my friends.
Self-Respect	1. I study because I can feel superior to others if my academic performance is better than others. 2. I study because I will be respected by my peers if my academic performance is better than others.
Reward	1. I study because I can have an allowance if my academic performance is better than others. 2. I study because my parents and the teachers praise me if my academic performance is better than others.

5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree

Table 6. T-test of Student Motivational Factors

Motivation Type	Q	Pre-semester Mean	SD	Post-semester Mean	SD	P
Fulfillment motivation	1	4.10	0.53	4.25	0.65	<0.01*
Training	1	3.39	0.97	3.62	1.06	<0.01*
Practicality	1	4.08	0.74	4.22	0.73	<0.01*
Relation motivation	1	2.86	0.97	2.64	1.00	<0.01*
Self-respect motivation	1	2.59	1.14	2.42	1.35	<0.01*
Reward motivation	1	2.01	1.03	2.42	1.35	<0.01*

Note. Q = Question, SD = Standard Deviation. **$p < 0.05$.
5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree, 1 = Strongly Disagree

5 Discussion

5.1 RQ1: The Impact of SOT on Student Satisfaction

This research attempted in the first place to identify how students evaluate SOT foreign language classes compared with F2F

as well as with other online teaching methods. The results show that they still regard F2F as the best option, mainly because it enables them to have direct face-to-face communication with the instructor and their peers. For them, the classroom is the place to deepen their learning as well as to build their relationship with faculty members and their fellow students. Having friends not only allows the students to reinforce knowledge accumulation by mutually asking questions but offers other benefits including the pure joy of engaging in the classroom activities, group experiences that allow them to acquire collective knowledge and be stimulated by others to generate motivation. Even though SOT can replace the teaching functions of F2F for the most part, it cannot provide this engaging and socializing feature sufficiently.

However, the results of this research revealed that the students are not so reluctant to accept SOT as a satisfactory replacement for F2F. Many students even preferred SOT to F2F in reducing hesitation around posing questions and making comments in the class, thanks to the various functions included in the videoconferencing application. Specifically, the private chat function worked very effectively to keep the communication between the instructor and individual student strictly confidential.

Another major reason for this support for SOT is the convenience it provides, especially the fact that it does not require commuting. If SOT adds more features that facilitate engagement and socialization among the students, it could become more attractive to the students. While waiting for vendors to develop new features in videoconferencing applications that allow higher student engagement and socialization, faculty members are recommended to expand their knowledge and skills to take advantage of existing resources to create new methods and techniques to achieve the same goal. Organizational support from the relevant educational institutions is also strongly required. Technical issues—including internet connectivity, Wi-Fi lag, and insufficient technical skills on the part of students as well as instructors—are impediments to a comfortable learning environment that can be mitigated at the institutional level. While independent efforts to acquire the skills and knowledge on the part of instructors and students are desirable, institutional support should be provided by measures such as

training opportunities for faculty members and students and allocating dedicated technical staff members "as a 'help desk'." If these measures are missing, the instructors are obliged to deal with the technical issues themselves, which can be a substantial additional burden on their shoulders. During the COVID-19 crisis, the changes were so drastic that most of the universities were not ready to offer sufficient organizational support.

Other strengths of SOT are its ubiquity and invulnerability to the environment; instructors and students are capable of participating in the class from anywhere and instructors do not need to cancel classes even in case of bad weather and other challenging circumstances. When F2F is unavailable, as in the case of 2020, students prefer SOT over others in general. This is probably because they regard SOT as the best, if not ideal, alternative for F2F. Under very unusual emergency situations such as the outbreak of infectious disease, SOT functions as the only real alternative. The time when faculty members and students were deprived of access to F2F due to COVID-19 served as an occasion to compare different online teaching and learning methods and appreciate the benefits and advantages each offers. This may lead many to conclude that combining F2F and online teaching methods optimally would better serve to achieve the goals of higher education, rather than relying on a single method. For example, in foreign language education, which this research focused on, synchronicity is a crucial component of instruction.

Combined with the features of SOT or OD which were more preferred than those of F2F, F2F classes could become more enjoyable and could offer a more productive educational environment. Through this experience, it could be said that SOT is likely to become a core component of higher education in the near future and will no longer be a supplement or contingency plan for F2F. Teachers need to make more efforts to make the classes more engaging by utilizing available resources and developing new methods or tools to improve the socializing role of SOT. It will be also necessary to identify optimal combinations of teaching methods with respect to many aspects of higher education including but not limited to the nature of subjects taught, learning styles of the learners, class sizes, and locations.

5.2 RQ2: Is SOT Suitable for Foreign Language Classes?

As for the second research question, student responses are rather favorable to SOT. Judging from the comments by the respondents in the survey this research conducted, the students seemed to support the idea that communicative features of foreign language classrooms can be best served by synchronous and interactive media; synchronicity and interactivity are the keys to foreign language acquisition. One typical example is that the recorded classes provided the learners to repeatedly review the coursework and make up for absence from the class. For a situation in which the premises of educational institutions are closed, SOT can play a very important role if courses taught require synchronous and interactive activities, which is typically the case for foreign language classes. Another key component of a foreign language class is the effective use of audiovisual aids. While SOT and OD can provide this feature, AS cannot. Because typical foreign language classes demand synchronicity and audiovisual features, it could be concluded that the best alternative to the F2F for foreign language classrooms is SOT.

5.3 RQ3: How do SOT Foreign Language Classes Affect Student Motivation?

Lastly, as for the third research question, the analysis indicated that the SOT English classes taught by the researcher made students more motivated. The learners had reduced tendencies to be motivated by the influence of external factors. The cause of their motivation to study seemed to have changed to more internal factors such as the joy of studying, the desire to train their intellectual capacity, the desire to use learned content for their everyday life and future career, and their expectation to earn higher compensation. It is possible that this result may have been caused by an unintentional side effect of SOT learning, that students are kept from being in contact with each other compared with F2F classes. Of course, there was no comparison with F2F or other types of online classes, so it is not known whether this change would have been greater or less in F2F classes or other types of online classes. However, at least as far as these classes are concerned, there was some improvement.

While this research was not specifically designed to identify

the reasons for differences in motivation, comments from the students provide some clues as to why it served to uplift the motivation of the learners. Many commented that they were stimulated by hearing others perform extremely well in delivering their work in the class. Others indicated that they became aware of the importance of repetitive practice to enhance their English proficiency after learning from the instructor various practicing methods. Some others mentioned that they became aware of their lack of required skills when they were performing pair work or group discussion using breakout rooms. In business English classes, many students voiced the difficulties of communicating with others in an unusual environment when they have to rely on communication tools other than face-to-face talks. Others said that going through English pronunciation practices and correction sessions made them aware of room for improvement because they had never had such learning experiences in the past. In sum, it is possible that the SOT foreign language classes taught by the researcher offered the opportunity to raise student awareness of the gap they have to fill.

Those findings could be leveraged to promote more motivational foreign language classes. The instructor may be able to provide more interesting and engaging materials to let the students discover or rediscover the joy of learning and to raise their awareness of the practicality of the learned content. They may be able to help the learners to set their own learning goals, or to offer them tangible rewards to evoke their willingness to study. They may also be able to share many study skills so that the students become willing to voluntarily train themselves continuously, which is very important to brush up their foreign language proficiency. It should be noted that innovative devices need to be implemented to promote the socializing environment of a classroom to lift the relation and self-respect motivation of the learners such as providing the opportunities to evaluate and compliment each other.

5.4 Other Issues: Fatigue Issues for Teachers and Students

Lastly, apart from the responses to the research questions above, the research provides ample findings. One of the challenges for many of the parties involved, instructors as well as students, were fatigue issues. There are many comments from the respon-

dents to the survey mentioning the stress of sitting in front of a computer all day. Foreign language education, especially undergraduate foreign language education, is heavily dependent on part-time lecturers. The COVID-19 crisis illuminated the heavy technical and administrative burdens on their shoulders, including the necessity to adapt to new environments, the obligation to create new teaching materials for online teaching, and to use different learning management systems provided by the schools where they teach. A colleague of this researcher complained that he had to spend one whole day preparing the OD materials used in each class throughout the semester and he had to do it for the four classes he was responsible for.

Students were also very exhausted. Faced with sudden changes in the learning environment in 2020, many students were stressed out; some due to substantially increased volume of assignments because of the changes in evaluation criteria, and some due to excessively long exposure to their computer screen. Many were bombarded with a significant increase in the regular amount of assignments for all of the courses they took. Solutions to this fatigue issue need to be provided institutionally as well as individually. Teacher training issues need to be addressed. Each teacher should aim at striking a good balance between their heavy teaching duties and their health to make their teaching activities sustainable. They should be also aware of not imposing an excessive burden on the students.

6 Conclusion and Limitations

The purpose of this research was to explore the impact of synchronous online teaching on student satisfaction and motivation when traditional face-to-face classroom teaching was not available. The magnitude of the impact was measured quantitatively and qualitatively by analyzing the responses both numerical and transcriptive to a questionnaire to students participating in the classes the author provided. The findings reveal that the students were fairly satisfied with synchronous online teaching while still considering face-to-face classroom teaching to offer the best learning environment for them due to its superiority over synchronous online teaching in offering socializing opportunities. They also regarded synchronous online teaching as the

best alternative to face-to-face classroom teaching for foreign language courses among various online teaching methods mainly because of the synchronicity and interactivity it provides along with its capacity to leverage audiovisual tools extensively and its convenience offered by its ubiquity. The result of this study also showed that synchronous online teaching can significantly increase student motivation, and that students may become less vulnerable to the external environment and more driven by their own internal aspirations.

This research focused mainly on the impact of synchronous online teaching on student satisfaction and motivation during the COVID-19 crisis. As all the students in the survey for this research attended the classes offered by the author, the findings may not be generalizable to other instructors and other disciplines. Also, these findings, especially those related to motivation, may not have been obtained if it were not for COVID-19, because under the circumstances of the pandemic the students had no choice but to accept online teaching.

Academic performance of the students was also not considered, either. Examining the impact of synchronous online teaching on academic performance and its relationship with the changes in motivation could be a subject for further study. As was the case in studies before the crisis, the comparison between different methods of teaching is necessary to discover an optimal combination of online and classroom teaching methods as well as the suitability of each combination to different teaching and learning settings including those in the sub-categories of foreign language education in Japan.

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