

A Comparison of Phonetics Courses between before
and after the COVID-19 Pandemic

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Abstract

This paper describes a challenge in an elective course of English Phonetics which has been conducted for eight years at a women's university in Japan. Students' strengths and weaknesses in learning phonetics will be discussed, particularly focusing on phonemes such as vowels and consonants in listening to minimal pairs and discriminating phonetic symbols in reading. Nowadays people wear masks including the teacher and students. Teaching strategies should be paid attention to and renewed with some ingenious devices. It is possible to teach face-to-face with CALL (computer-assisted language learning) on campus in combination with some online tools which were developed as an outcome of remote teaching. Consequently, there must be tendencies before and after the pandemic. Some previous studies including Kido (2019) could be compared with this investigation. Similarities and differences between before and after the pandemic will be discovered. This paper would be profitable as research on actual conditions and an aid to improve students' proficiency for the future.

Keywords: CALL (computer-assisted language learning), consonants, English majors, listening, LMS (Learning Management System), minimal pairs, phonetic symbols, vowels

Introduction

Three academic years have passed since COVID-19 spread. The prospects for resolution still seem gloomy. People live a new normal life although they require attention according to their situation. As for education in Japan, many schools offer primarily face-to-face teaching in combination with online teaching. Though students have come back to campus after almost two years of remote learning, they are forced to wear masks and keep social distance among themselves as well as teachers and

school staff. Class activities are also restricted. Seating should be cautious and discussions in pairs or groups are conducted less frequently. People tend to communicate by talking quietly and making eye contact. There are obstacles to learning even now. However, it is significant to share a sense of unity and belonging when they are in the same space instead of working individually online. In this environment, English education can focus on several methods and activities such as listening, reading, and writing, including vocabulary and grammar. Regarding speaking and pronunciation, how do students cultivate their skills? This study will suggest some teaching plans and observe students' efforts.

Method

Class Style

This paper refers to a course of English Phonetics at a women's university in Fukuoka, Japan. It is a one-semester elective course and has been conducted by the same teacher for eight years since 2015. In the first five years before COVID-19 (2015-2019), it was taught with CALL on campus. The classroom is equipped with a desktop computer for each seat. The teacher can supply activities through CALL so that students can be provided with visual and auditory materials individually and work in pairs with headsets and microphones. In the following two years (2020-2021), it was offered completely online. Students could see their teacher via a video meeting system while they posted comments to exchange opinions, answered questions on the forms, and submitted assignments in the online report box. In any case, students had opportunities to learn basic phonetical knowledge and practice shadowing assignments by means of recording software to develop pronunciation skills on or off campus. The details regarding class activities in the past can be seen in Kido (2016, 2021, 2022).

In the current year (2022), face-to-face teaching is now in operation. CALL is available as it was before the pandemic. The LMS (Learning Management System) is still accessible. Software and applications for online teaching can be introduced to students as tools of assignments as well as for communication between the teacher and students or among students. In the first half of each lecture, the teacher explains a topic and technical terms from a textbook. She is seated at the front of the CALL room. Students' seats are arranged in a group of four so that they can sit

sideways. They can see their teacher who appears on the monitor via the video meeting system without walking around the room. All people wear masks which are an impediment for dealing with phonetics. The teacher cannot show her mouth for instructing articulation. Students also feel difficulty in their utterances. Instead, the teacher tries displaying a mouth model which is used at dental clinics to teach how to brush teeth. She calls it “Mickey Mouth” and holds it like a ventriloquist. She wears a red glove on her hand which plays the role of a tongue in order to show its position in the mouth. This demonstration is effective particularly in teaching some phonemes such as [l], [r], [θ], and [ð]. The other hand wears another red glove to imitate lips which helps her especially teaching [f] and [v]. In addition, there are various useful movies and videos. Not only analogue physical items but also digital tools can be utilized in such a mixture of face-to-face and online classes. Although each teaching style has advantages and disadvantages, one can often redeem the other’s defect.

Participants

The students are second-year or older, majoring in English. Some of them take teaching courses for junior and senior high school or kids’ education. They are Japanese speakers including a couple of overseas students such as Chinese and Nepalese. The number of students who take the course of English Phonetics is shown in Figure 1. The numbers include a few students who disappeared in the middle of the semester without cancelling their registration. The admission quota used to be fifty students until 2017, and it is now sixty. The department had filled their quota till 2021 while it permitted an intake of students over the quota approximately ninety students in 2019. Consequently, the number of second-year students in 2020 is the highest. In addition, COVID-19 forbade students studying abroad so that they had to stay in Japan and most students took the course. The capacity of the CALL room is sixty so that an extraordinary measure was taken to accept those who desired to study phonetics. The class was separated into two and the teacher held the course twice a year. Thirty-five participated in it in the first semester and fifty-two in the second. After adjusting the class, the university decided to offer online lectures instead of teaching on campus according to the government’s decision, that is, a state-of-emergency declaration. It is ideal to teach phonetics including training for pronunciation skills in smaller sized groups regardless of the room capacity. Before COVID-19, many students attended in 2016, 2018 and 2019.

One of the remarkable reasons is that a larger number of third and fourth year students were included: 23 (41.8%) of 55 in 2016 and 24 (50.0%) of 48 in 2018 while 6 (16.7%) of 36 in 2015 and 9 (23.7%) of 38 in 2017. It is probably because most of them studied overseas as second years and seemed to be advised to take this course by their friends who were in the course in the previous year. On the other hand, 13 (23.6%) of 56 in 2019 is exceptional. One of the possible reasons is that this grade was the first generation to widen the admission quota from fifty to sixty. The timetable has remained the same over the years. The course has been held on Wednesday afternoon in the second semester except for the first semester in 2020. In March, students needed to register for classes in the coming academic year. At that time, seventy-five registered for the course, over the capacity. As a strategy for breaking out of this situation, an extra class was prepared by another teacher simultaneously to accommodate all applicants. In any case, the teachers were grateful that many students had a strong interest in phonetics. If the teacher continues teaching with originality and ingenuity, a rumor will spread among talkative female students as word-of-mouth information. Consequently, she can expect to collect a stable number of students.

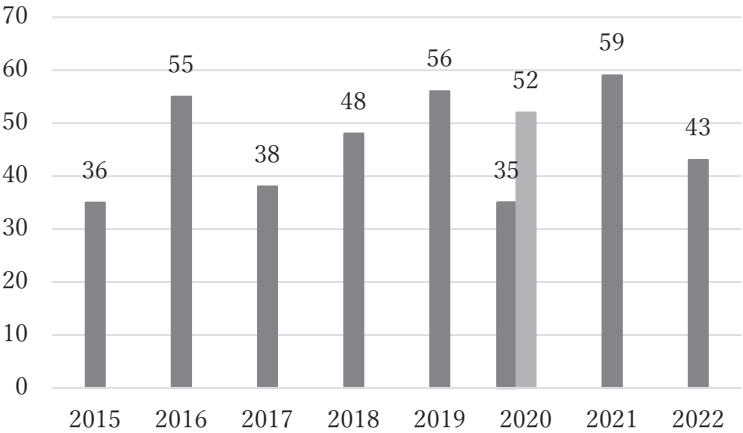


Figure 1. The number of participants in English Phonetics

Previous studies

In Kido (2019), a listening quiz of minimal pairs is focused on. Students

took an exam in the final week of the semester. The results are shown as below (Table 1):

Table 1. The results of a listening quiz (Kido 2019, p.116)

minimal pairs	2016 (34)	2017 (53)	2018 (37)	2019 (47)	Total (171)
cut / cute	34	53	37	47	100 % (171)
not / note	33	53	37	47	99.4% (170)
feel / fell	33	51	37	47	98.2% (168)
my / may	33	53	37	46	98.8% (169)
air / ear	33	53	37	47	99.4% (170)
peak / pick	34	53	37	47	100 % (171)
walk / work	30	49	33	45	91.8% (157)
bag / bug	33	44	32	38	86.0% (147)
hall / hole	23	29	33	42	74.3% (127)
simple / symbol	34	53	37	47	100 % (171)
horse / force	33	52	35	46	97.1% (166)
berry / very	28	44	30	36	80.7% (138)
close / clothe	23	43	13	35	66.7% (114)
size / sides	28	26	28	34	67.8% (116)
sheet / seat	27	36	33	44	81.9% (140)
pledger / pleasure	36	47	29	30	83.0% (142)
race / lace	34	47	11	29	70.8% (121)
sun / sung	28	53	37	8	73.7% (126)
queen / keen	33	53	37	47	99.4% (170)
yen / N	33	53	37	47	99.4% (170)

The percentage of correct answers is extremely high. The teacher read one of each pair in front of the students so that they could choose it. The teacher didn't always read the same words. She read a right word in a certain year and a left one in another year. After practicing sufficiently through a semester, they generally succeeded to answer. Students could see the teacher's mouth when they listened to her. As for vowels, front vowels including 'my / may' and 'air / ear' seem easier than mid or back vowels. Long vowels and diphthongs can be compared with short vowels such as 'cut / cute', 'not / note', 'feel / fell', and 'peak / pick'. On the other

hand, words pronounced in similar length, for instance, ‘bag / bug’ and ‘hall / hole’ are slightly lower. The gap in length is one of the features which can assist students in differentiating vowels. As for ‘walk / work’, students made strenuous efforts.

Concerning consonants, it depends on familiarity in their first language. For example, initials such as ‘horse / force’, ‘queen / keen’, and ‘yen / N’ or medials like ‘simple / symbol’ tend to be successful. There are some pairs with the same difficulty: ‘close / clothe’, ‘size / sides’, ‘race / lace’ and ‘sun / sung’. Such consonants as [ð], [dz], [r], [l], and [ŋ] aren’t used in most students’ first language, Japanese, so they require more attention repeatedly. As for ‘sheet / seat’ and ‘pledger / pleasure’, the teacher emphasizes how to pronounce. She introduces a tongue twister for [ʃ] and [s]: “She sells seashells on the seashore.” In [dʒ] and [ʒ], she explains as follows: the former is an affricate which is a mixture of plosive and fricative, so it is a momentary sound that is pronounced with the tongue tip touching the alveolar ridge while the latter is a fricative continuous sound produced without the tongue touching the alveolar ridge. Another pair ‘berry / very’ shows a lower percentage though it should be quite easy if they see the teacher’s lips. They should be more careful about points of articulation.

Another quiz was given in the exam. Sets of three words having a

Table 2. The results of a quiz for analyzing phonetic symbols (Kido 2019, p.120)

words sharing a phoneme	2016 (34)	2017 (53)	2018 (38)	2019 (47)	Total (172)
any, friend, sweat: /e/	26	38	24	33	70.3% (121)
apple, hand, Japan: /æ/	25	32	24	29	64.0% (110)
each, chief, ski: /i:/	27	37	26	26	67.4% (116)
only, coat, go: /óʊ/	31	40	26	35	76.7% (132)
earn, girl, prefer: /ə/	18	25	21	18	46.5% (80)
zero, thousand, teens: /z/	17	21	17	17	41.9% (72)
chair, future, catch: /tʃ/	19	26	17	18	46.5% (80)
sugar, delicious, fresh: /ʃ/	23	31	16	25	55.2% (95)
win, quiet, language: /w/	20	29	15	16	46.5% (80)
country, school, unique: /k/	21	34	23	28	61.6% (106)
use, yes, nephew: /j/	12	22	8	8	29.1% (50)
juice, magic, college: /dʒ/	9	22	16	19	38.4% (66)

phoneme in common were shown on the paper to answer what phoneme it is without listening. Students were asked to choose and write a phoneme. The results are shown in Table 2. The percentage of correct answers is much lower than that of Table 1. It proves that students have difficulties in recognition of phonetic symbols as well as distinction from spelling. It is too short to master IPA (the International Phonetic Alphabet) in a semester. Table 2 shows questions of vowels in the first five sets and ones of consonants in the last seven sets in the column. In general, the rates of vowels are higher than those of consonants. One vowel resulted in under 50% while five consonants did. The lowest rate in vowels is 46.5%, and that in consonants is 29.1%. The reason might be that they can focus on a, e, i, o, and u for distinguishing vowels. It is easier to find vowels in spelling than consonants which can be spelt in various letters. Particularly, [e] and [óɔ] can be matched with the spellings of e and o. [æ] and [i:] are also linked easily with spelling without trouble. A schwa is the most difficult perhaps because the symbol [ə] isn't used in the alphabet.

There are some factors that can confuse students in recognizing consonants. Some consonants have variations in spelling. For instance, the lowest rate is the set of 'use, yes, nephew' which shares [j] in spite of spelling as u, y, and a part of phew. [j] is particularly tricky. First of all, it is categorized as a semivowel which looks like a vowel, not a consonant. Secondly, the letter 'j' is generally pronounced as [dʒ], so students seem to misunderstand it. Therefore, [dʒ] is the second lowest. Another possible reason could be that the words for vowels include one or two vowels each while ones for consonants include two or more consonants. It might be more clean-cut if students are shown 'joy, magic, edge' for [dʒ] or 'zoo, thousand, peas' for [z]. The words were selected as ones including a common phoneme in initial, medial, and final. The words for medial should be long while ones for initial and final could be changed into shorter words such as one-syllabic words.

These previous studies describe actual conditions before COVID-19. This paper will investigate into the present conditions after the pandemic. Similar activities were conducted in the second semester in 2022. Reading questions such as those shown in Table 2 should be fair to previous and current students. Listening questions were offered by sound files without looking at speakers' faces. It must be a big difference between previous studies and this paper. As expected, it is possible that the general results will be lower than before. On the other hand, these tests were

implemented in different situations: the previous studies in an exam and this investigation in weekly class activities. Students can listen to the sound files repeatedly in class as many times as they want to while they can't turn back to the past questions in the exam as it is held at the teacher's pace. It is quite difficult to say which situation is advantageous. Anyway, it would be significant which phonemes are difficult or easy in comparison with the previous studies.

Analysis

Students learn basic knowledge of English phonetics in comparison with Japanese. All students are Japanese speakers. The course adopts a textbook, Sugimori et al. (2012), which is written in Japanese with considerable examples. In the first sixty minutes, the teacher speaks in English to the class as a whole. She shows slides on a screen to help emphasize important information. After students read an explanation in Japanese, they listen to examples through the ceiling speakers and practice reading them out together by repeating after the teacher. Then they try answering some quizzes. The teacher shows correct answers so that students can check them. In the last thirty minutes, students access their classroom site in the LMS which provides them with assignment forms as self-study and today's review. The questions are based on exercises in the textbook. Students listen to sound files through their headsets and answer the questions such as choosing a correct word in each minimal pair, dictating and filling in the blanks. The teacher constantly monitors through her computer if they are tackling assignments and sometimes walks among students to give advice personally in Japanese. They submit them by the end of class.

Each unit for vowels and consonants in the textbook begins with an exercise of distinguishing minimal pairs. Two words are printed to choose a proper word they listen to. Exercises on vowels were implemented on Days 3 and 4. Ten questions were given each day, twenty questions in total. The results are shown in Table 3:

Table 3. The results of a listening quiz for vowels

Day 3 (42)		Day 4 (41)	
mad / mud	71.4% (30)	boat / bought	43.9% (18)
stuck / stock	52.4% (22)	cold / called	73.2% (30)
tap / top	90.2% (37)	so / saw	70.7% (29)
nut / not	52.4% (22)	hole / hall	36.6% (15)
cat / cut / cot	9.5% (4)	woke / walk	63.4% (26)
burn / barn	90.5% (38)	wait / wet	100 % (41)
fur / far	81.0% (34)	date / debt	100 % (41)
hurt / heart	54.8% (23)	late / let	97.6% (40)
beat / bit	97.6% (41)	mate / met	95.1% (39)
pool / pull	81.0% (34)	gate / get	100 % (41)

In general, the percentage of correct answers is lower than that of Table 1. It seems more difficult to listen to auditory data without seeing a speaker's mouth. Half of them resulted in over 80%. Three pairs collected right answers unanimously. All the three include [éi] and [e] such as 'wait / wet', 'date / debt', and 'gate / get'. Three more pairs resulted in over 95% such as 'late / let', 'beat / bit', and 'mate / met'. The other four pairs range from 81% to 90.5% such as 'burn / barn', 'tap / top', 'fur / far', and 'pool / pull'. It is obvious that [éi] is facile to perceive for Japanese learners. It is also simple to discriminate between a long vowel and a short vowel. As for an open vowel [a], they can distinguish it from a schwa in 'burn / barn' and 'fur / far.' However, it is somehow unmanageable in comparison with [ʌ], for instance, in 'stuck / stock', 'nut / not', and 'cat / cut / cot'. Students seem to lack stability in their competence if it depends on a counterpart.

Another weakness is comparing words including similar vowels in length, for instance, a diphthong and a long vowel in 'boat / bought', 'cold / called', 'so / saw', 'hole / hall', and 'woke / walk'. One of the possible reasons is that there are some variations in spelling, such as [óv] in 'boat', 'cold', 'so', 'hole', and 'woke' while [ɔ:] in 'bought', 'called', 'saw', 'hall', and 'walk'. Particularly, 'bought' can be misconceived as [óv], not [ɔ:] probably because of its spelling. As for 'hole / hall', it was the worst in Table 1 as well. [l] can be confusing which might sound similar to [v]. Though [l] follows the vowel in 'cold / called,' it seems more successful because its right answer is [óv]. Another reason of misunderstanding is influence of loanwords. Some of the

words are used frequently in their daily life such as 'boat race', 'walking', 'cold drink', 'hole in one' and 'concert hall' which all are spelt and pronounced as a long vowel in Japanese. The words are familiar to Japanese speakers, but they should pay more attention to the difference between original words and borrowed words.

Exercises on consonants were offered on Days 6 to 8. Ten questions were given each day, in total thirty questions. The results are seen as below in Table 4:

Table 4. The results of a listening quiz for consonants

Day 6 (42)		Day 7 (35)		Day 8 (39)	
light / right	78.6% (33)	see / she	88.6% (31)	choke / joke	97.4% (38)
lead / read	76.2% (32)	sip / ship	71.4% (25)	rich / ridge	100 % (39)
feet / heat	97.6% (41)	win / wing	97.1% (34)	chin / gin	97.4% (38)
fight / height	92.9% (39)	some / son / song	91.4% (32)	pit / pitch	97.4% (38)
very / berry	83.3% (35)	Kim / kin / king	100 % (35)	world / word	94.9% (37)
vest / best	88.1% (37)	rope / robe	100 % (35)	held / head	100 % (39)
think / sink	92.9% (39)	try / dry	97.1% (34)	square / scare	100 % (39)
tenth / tense	97.6% (41)	pick / pig	97.1% (34)	wheat / eat	100 % (39)
then / Zen	95.2% (40)	let / led	91.4% (32)	yeast / east	43.6% (17)
clothing / closing	83.3% (35)	cart / card	100 % (35)	year / ear	35.9% (14)

The rate of correct answers is higher than Table 3, and favorably compared with Table 1. It means that students can recognize consonants auditorily with great facility. Seven questions recorded perfect: 'Kim / kin / king', 'rope / robe', 'cart / card', 'rich / ridge', 'held / head', 'square / scare', and 'wheat / eat'. Most pairs include voiced and voiceless: [p] and [b], [t] and [d], and [tʃ] and [dʒ]. Some more pairs, including voiced and voiceless also collected high percentages, ranging from 91.4% to 97.4% such as [t] and [d] in 'try / dry' and 'let / led', [k] and [g] in 'pick / pig', and [tʃ] and [dʒ] in 'choke / joke' and 'chin / gin'. A similar pair of 'pit / pitch' also marked a high percentage. It has no problem for students to establish a distinction between a plosive and an affricate.

Another perfect group includes a semivowel [w] in 'square / scare' and 'wheat / eat'. It seems distinguishable that a semivowel appears or disappears in initial or medial. However, as for another semivowel [j], the

results of 'yeast / east' and 'year / ear' are the lowest of all. The reason for different percentages in [w] and [j] might depend on the places of articulation; [w] is a labial which is visible while [j] is a palatal which is inside the mouth. Tanabe (2005) and Kohmoto (2005) point out that [ji] and [ji(:)] are extremely difficult for Japanese speakers. Kohmoto (2005) and Togo (2009, pp.190-191) state that Japanese language uses ya, yu, and yo without yi and ye. They also explain that [j] sounds similar to [i:] because they are articulated in close positions in which a glide occurs. It reveals that learners have difficulty with unfamiliar phonemes and are required to pay attention to them. Surprisingly, students can perceive [m], [n], and [ŋ] because 'win / wing' and 'some / son / song' also reached higher percentages than Table 1. It seems that wearing a headset can cultivate clarity so that they can recognize nasals better than listening through the ceiling speaker.

The other perfect is a pair of 'held / head' which is with or without [l]. The same type of 'world / word' also shows a high percentage. It has no trouble in finding if [l] is added. However, it has some trouble with [l] and [r]. The results of 'light / right' and 'lead / read' recorded slightly lower percentages. It means that students don't understand the features of the two phonemes. It might also make it difficult to answer without a visual check of the speaker's mouth. They need more careful training, for instance, medial ones such as 'fly / fry' and 'play / pray' because the phonemes occur only in initial sounds in this exercise.

Some more high percentages are [f] and [h] in 'feet / heat' and 'fight / height', [θ] and [s] in 'think / sink' and 'tenth / tense', and [ð] and [z] in 'then / Zen'. Pairs of [f] and [h] are quite successful though they are categorized in the same column of the kana syllabary in Japanese. These consonants are articulated far from each other. The former is a labio-dental and the latter is a glottal. The places are in the front and the back of the mouth, which can make an extreme gap. As for 'very / berry' and 'vest / best', both consonants are articulated in the front position of the mouth. [v] is a labio-dental fricative while [b] is a bilabial plosive. They could be confusable because of the close places of articulation in pairs even though they have different manners of articulation. On the other hand, th-sounds are often quoted as difficult points by students. They might have focused on them to overcome their drawback. It would be a great progress after learning technically to differentiate the consonants in initials and endings by listening even if they can't pronounce them appropriately. They should be

more cautious of medials such as ‘clothing / closing’ as well.

The third lowest percentage was recorded in ‘sip / ship’. Another pair of [s] and [ʃ], ‘see / she’ has a higher percentage. Comparing with Table 1, ‘seat / sheet’ showed 81.9% which is between the two pairs. All pairs are followed by a high front vowel. One possible reason is that the correct answers are ‘she’ and ‘sip’. [s] seems less perceptive than [ʃ] because Japanese language uses [ʃi], not [si]. Some students spell ‘si’ for the sound in romaji although others spell ‘shi’. The very same students mistook in the first and second questions: Four students answered wrongly in the two questions while six more students did in the second question. There are some types of students. Some can pronounce these consonants in the right way, but fail to choose appropriate answers in the listening. Others fail both in the listening and pronunciation. They were given assignments for pronunciation skills to do shadowing. The procedure is introduced in Kido (2022). Students read passages to record and submit to the teacher. Some students mispronounce [s] as [ʃ] in ‘possible’, [z] as [dʒ] or [ʒ] in ‘visit’, [dʒ] as [z] or [ʒ] in ‘energy’. A couple of students always pronounce [ʃ] and [dʒ] instead of [s] and [z], for instance, they pronounce both ‘she’ and ‘see’ as [ʃi:] or both ‘G’ and ‘Z’ as [dʒi:]. Others tend to read out carelessly, that is, their pronunciation skills are unstable, sometimes acceptable but sometimes unacceptable.

After they studied about vowels for two weeks, a quiz was implemented. Sets of three words are written. Two of them share the

Table 5. The results of finding a wrong vowel

Day 5		(39)	
ham / tap / cup	69.2% (27)	coat / cold / choice	86.8% (33)
stock / mop /stuff	69.2% (27)	saw / called / cow	61.5% (24)
hood / full / hat	94.9% (37)	near / here / there	79.5% (31)
hard / heart / heard	66.7% (26)	are / car / ear	87.2% (34)
luck / mud / fool	100 % (38)	wait / gate / night	82.1% (32)
lock / top / who'd	94.9% (37)	pure / poor / pair	76.3% (29)
farm / star / fair	79.5% (31)	more / core / cure	92.3% (36)
feet / reach / live	89.7% (35)	toy / boy / buy	89.7% (35)
time / sky / date	79.5% (31)	brown / out / cold	82.1% (32)
four / door / tour	66.7% (26)	air / bear / beer	89.7% (35)

same vowel while the other includes a different vowel from the two. Students choose a word in each set. There are twenty questions. The results are shown in Table 5. All the third words in sets should be chosen as a wrong vowel. The choices in the actual quiz are shown randomly. The percentages are generally higher than Table 2. It is probably because students can open their textbooks in class though they can't in an exam. Additionally, they don't have to answer what vowel it is. Nevertheless, the percentages vary. One question was answered accurately by all students. Ten questions scored over 80% while nine didn't reach it.

Firstly, students tend to rely on spelling. In the higher groups, three sets include the same spelling for the common vowel such as 'luck / mud / fool', 'more / core / cure', and 'toy / boy / buy'. Naturally, these questions are lucid. On the other hand, the lower groups include similar questions such as 'ham / tap / cup', 'stock / mop / stuff', and 'farm / star / fair'. Students seem to be confused about [ʌ] and [ɑ]. As for 'hard / heart / heard', 'four / door / tour', and 'near / here / there', the same letters of '-ear-', '-our', and '-ere' are used in different sounds so that spelling could function as a trap. They might be puzzled by a set of 'saw / called / cow' which includes 'w' in two different sounds. In 'time / sky / date' and 'pure / poor / pair', the spellings of the three words vary which could perplex students. In written quizzes, students seem to believe that spelling should play an important role as visual information.

Inversely, some questions collected accurate answers without misleading students through spelling. A question of 'hood / full / hat' deals with short vowels. The vowels in the three words are spelt in different letters, but most students succeeded to identify the vowels. These words appear as loanwords in Japanese. They are pronounced in a quite different way from English. A long vowel [u:] is substituted for 'hood' while a short vowel is applied to 'full'. A double consonant is added to 'hat'. Students seem to focus on features of vowels without being confused by the loanwords. They are perhaps conscious of the difference between two extremes: a back vowel [ɔ] and a front vowel [æ].

The rest of the questions are treated as long vowels and diphthongs. In 'feet / reach / live', it is facile to notice that the spellings of '-ee-' and '-ea-' share the same vowel which might prompt them to answer accurately. It is also possible that some students read 'live' as a diphthong, not a short vowel. In any case, there is no doubt that most students could discriminate between two kinds of vowels. The set of 'lock / top / who'd' led most

students to choose a correct answer. The contrast with a long vowel should be effective even though students are unconfident that they can realize [a] itself. As for 'coat / cold / choice', students are more successful than in listening to [óv] as seen in Table 3. It seems less difficult to distinguish it from another diphthong [ɔɪ] than a long vowel. The other questions include diphthongs such as 'wait / gate / night', 'brown / out / cold', 'air / bear / beer', and 'are / car / ear'. These words might be uncomplicated in some degree. It would be more difficult if some words were changed such as 'weight' instead of 'wait' and 'near' instead of 'beer'. All things considered, students' comprehension is generally satisfactory.

Regarding consonants, a simple quiz was prepared after voiced and voiceless were introduced. All students have to do is look at consonants and choose if they are voiced or voiceless. There are twelve questions about plosives and fricatives. The results are shown in Table 6 as below:

Table 6. The results of answering voiced or voiceless consonants

Day 7		(35)	
[p]	94.3% (33)	[v]	85.7% (30)
[b]	97.1% (34)	[f]	88.6% (31)
[t]	94.3% (33)	[s]	85.7% (30)
[d]	100 % (35)	[z]	91.4% (32)
[g]	97.1% (34)	[ʃ]	85.7% (30)
[k]	100 % (35)	[ʒ]	94.3% (33)

This quiz shows the extremely high percentage of correct answers in general at first sight, but it is partly irrational. There are six pairs of voiced and voiceless which share the same manner and place of articulation such as [p] and [b], [t] and [d], [k] and [g], [f] and [v], [s] and [z], and [ʃ] and [ʒ]. It would be permissible if a student switched two in a pair mistakenly, for instance, [p] as voiced and [b] as voiceless. However, two students answered voiced for both [p] and [b] while one answered voiceless for both. It seems that such students are slow learners or lack concentration. There are twelve students who made one or some mistakes: Three of the students gave a wrong answer and nine gave two to six.

The left column includes plosives while the right one is for fricatives. It reveals that students are much more perceptive about plosives than

fricatives. Though it should be facile to choose voiced or voiceless, there are merely two questions which all students answered properly: [d] and [k]. Four of twelve didn't reach 90%: [v], [f], [s], and [ʃ]. As seen in Table 4, most students succeeded to identify plosives in listening such as [p] and [b], [t] and [d], and [k] and [g]. It proves that perception of listening can correspond to that of phonetic symbols. A pair of [p] and [b] is the only one in plosives that didn't result in 100%. It might be because [p] is categorized as semivoiced, apart from voiced and voiceless in Japanese language. It means that students tend to rely on preconception brought by their first language. As for fricatives, questions for [f] in listening resulted in high percentages as seen in Tables 1 and 4. It was compared with [h], not [v]. Introduction of these combinations could confuse students in learning manners and places of articulation. A pair of [s] and [ʃ] was also a comparatively tough question in listening as well as reading phonetic symbols. Students seem not to know how to deal with these consonants. It can be expected that students can't realize certain phonetic symbols if they can't perceive them auditorily.

Conclusion

Wearing a mask could be an obstruction to communication. People attempt to surmise how speakers or listeners feel. Reading an expression on a face can play a critical role of understanding a context as nonverbal communication. Teaching phonetics often requires observing a speaker's mouth closely. Actually, prevention of infection spread restricts the way to meet people in public. Some schemes enable students to interact sufficiently in class. There are some digital tools that can assist students in self-study. Class can be activated with a mixture of on and off campus modes. Learners had better not only absorb knowledge but also make use of it. They should be also perennially exposed to both theory and practice. The environment can foster people. Generally, face-to-face education seems to have more advantages than remote teaching. Learners don't have to feel constraint to ask a question to their teacher and help fellow students mutually. Learners can also be encouraged to obtain academic knowledge by reading written information and listening to audio materials so that they can focus on analyzing and observing objectively. Consequently, learners have some tendencies in common before and after the pandemic. They generally rely on not only context but also their first language. In other words, they can discover English phonetical features in comparison

with another language. They need to be cautious about elements unfamiliar to them, especially about matters which don't occur in their own language. It is obvious that it would take time and effort to acquire technical terms and phonetic symbols. Learners are expected to endeavor to learn out of class and after the semester ends. It is significant to promote learners' autonomy with ingenious strategies in any situation.

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