

## A Phonological Analysis of the Japanese University Students' Oral Performance in English

Kasumi Arciaga<sup>1,\*</sup> Eden Regala-Flores <sup>2</sup>

<sup>1</sup> *De La Salle University, Manila*

<sup>2</sup> *De La Salle University, Manila*

*\*Corresponding Author: kasumi\_arciaga@dlsu.edu.ph*

**Abstract:** The construct of World Englishes (WE) establishes a prevalent understanding, acceptance (Kachru, 1985), and even institutionalization of English varieties (e.g., Indian English, Philippine English) among native and nonnative speakers of English. Despite this, however, descriptions of the phonological features of speakers of an English variety still need to be undertaken to provide a more informed discussion, comprehensive understanding, and deeper appreciation of the production of English segments and suprasegmental features among speakers of English varieties. Guided by Kachru' (1985) paradigm, and Flores' (2014) research approach and design, this study attempts to describe the phonological features of twelve Japanese university students' oral performances in English. The discrepancies in the production of the English vowel and consonant sounds by the participants vis-à-vis the speech models used in their English course may be attributed to the influence of the segmental features of their mother tongue as they heavily relied on their knowledge of loanwords and produced some of the words in *Katakana yomi*. As for the suprasegmental features of their oral performance, the participants are able to observe the English rising intonation in *wh*-questions, and insertions of stops within the sentence whenever adverbs are present. Implications for both traditional and distance-learning platforms of pronunciation instruction are provided in the light of this descriptive analysis

**Key Words:** phonological features; Japanese university students; World Englishes; English education; Japanese English

### 1. INTRODUCTION

World Englishes (henceforth, WE) has become a salient phenomenon that English as a second (ESL) or a foreign language (EFL) learners do not need to sound like native speakers. Kachru (1985) argued that some of the common errors made by non-native speakers of English be acceptable as long as they are comprehensible. For example, non-native speakers often have a difficult time pronouncing /θ/ and /ð/. Kachru (1985) mentioned that even if non-native

speakers pronounce the word "think" as /sInk/ or /tInk/, instead of /θInk/, native speakers can understand and make sense of that word's meaning from contexts in which that word was used. At present, there are more non-native speakers who use English who are not expected to sound like their British, American, or Australian counterparts. In fact, this notion provided an impetus for research to describe the phonological features of these non-native English in order to describe how they pronounce the English vowel and consonant (segmental) sounds and their adherence to English intonation and stress

(suprasegmental) patterns. Studies regarding English pronunciation of Arabic, Persian, Thai and Japanese speakers of English reveal that their mother tongue or first language (L1) structure is one of the predictors of their English pronunciation (in)accuracy (Suter, 1976), foreignness (Rognoni & Busa, 2014; Saito, Trofimovich, & Isaacs, 2017)), and accentedness (Kang, 2010) of English sounds. These studies seem to indicate that the participants' first language is greatly correlated with their English pronunciation and its comprehensibility. They also suggest that the phonology of native languages has a significant effect on one's phonological competence in second language (L2).

Interestingly, studies involving non-native speakers who have lived in or have migrated to English-speaking countries reveal that no matter how long they have stayed in these countries or have used the language for a considerable period of time, they still have distinguishing phonological features attributed to their first language (Trofimovich & Baker, 2006).

Despite the numerous studies regarding Japanese speakers of English – allegedly the most notorious and most difficult to be understood by many native and non-native speakers – (Purcell & Suter, 1980), most of these, however, focused on identifying the major potential misunderstandings brought about by the mispronunciation of English sounds that caused comprehensibility and intelligibility problems and issues (see Tomita, Yamada, & Takatsuka, 2010; Saito, 2011; Nagamine, 2011; Smith, 2012; Kashiwagi & Synder, 2014; Suzukida & Saito, 2019). Since most of the studies focused on identifying the participants' pronunciation errors vis-à-vis native English speakers', this paper responds to Gardiner and Deterting's (2020) challenge to look at these phonological aspects as unique features of Japanese English and provide some inputs with regard to this under-represented group of speakers of English.

This present study aims to provide a simple description of segmental and suprasegmental features of select Japanese university students learning English as a second language. Specifically, it aims to answer the following questions:

1. How may Japanese university students' English oral production be described in terms of segmental features such as vowel and consonant sounds??
2. How may their English oral production be described in terms of suprasegmental features such as lexical stress and intonation patterns?

## 2. METHODOLOGY

### 2.1 Participants

Former students of one of the researchers from a university in Kanagawa, Japan (F=3, M=9) gave their informed consents to participate in this study. All of them are Japanese nationals and at the time of the recording which took place in the early 2020, they were in their freshman year, and are between the ages of 18 and 19. All of them finished their basic English education from 5<sup>th</sup> to 12<sup>th</sup> grade, with a total of eight years as prior. They attended the mandatory class, *Beginners' Listening Course*, usually with 25-29 students. The students came from different degree programs such as, business management, economics, and so on.

### 2.2 Data Collection and Analysis

The data used in this study were part of the course activity where students were asked to choose a video from English Central.com, and to audio-record their reproduction/imitation of the speech. The audio recordings were done between November 2019 and January 2020. The videos run for 30 seconds to a minute, thus, their own audio has the same length. English Central.com was chosen for video selection because it allows various learning tools for L2 students, and most of the features on the website are for free use. All the videos are graded from beginner to advanced levels topics range from business, media, economy, and entertainment. Students can select any of the video from the site, adjust its speed, and access its transcripts. It also provides quizzes for the unknown vocabulary within the videos, and, and has application for smartphones. All the materials from English Central are academically appropriate; thus, were chosen for the assignments.

The transcripts of the students' audio recordings are transcribed using the IPA Phonetic Alphabet (2015/2005), followed by the analysis and descriptions of the distinctive phonological features of the students based on the imitated speeches from the videos.

## 3. RESULTS AND DISCUSSION

### 3.1 Segmental analysis of the data

#### 3.1.1 The vowel sounds

Ohata, (2004) identified five basic vowel sounds in Japanese, compared to English 12 vowel sounds. Vowels in the participants' transcriptions show four main variations: *vowel addition, extension,*

deletion, and change of vowels. Table 1 describes the findings from the students' transcription in this present study.

Table 1. Vowel sounds produced by the participants

Vowel addition	Vowel extension	Vowel deletion	Change of vowel
(9)	o (1)	a: (1)	æ >ɔ: (2)
(8)	ʊ		ə >æ (2)
(2)	ə		ɪ >y
(2)	ɪ		ə >a
(2)	a		i: >ei
(1)	ɒ		c >u a >ɜ a >ɒ e >i a >æ i: >i ɔ >ɒ ɪ >e

\*Number shows the frequency of occurrence

1. **Vowel addition** – Students showed frequent addition of vowels after consonants which could be an L1 transfer since in Japanese language, all the words end with vowels. For example, addition of /o/ occurred nine times as they say, /sma • to • fon/ for smartphone.

2. **Vowel extension** – Vowel extension occurred in the word “ali babə” from student E’s speech. The word “babə”, if extended as in /ba:bə/, means an old woman or grandmother in Japanese. It could be that her L1 knowledge of this particular word made her extend these vowel sounds.

3. **Vowel deletion** – The vowel deletion in the data: /æ/ in /weɪr'æz/ (whereas), and it could have been because it was the first word in the speech, the student may have just missed reading the word.

4. **Change of vowel** – Vowels were changed 15 times which could be due to lack of vowel variations in Japanese. For example, /ə/ does not exist in Japanese, hence, was replaced with /a/. The central middle sound of /ə/ was replaced with /æ/ which is placed in front low position. Since Japanese vowel sounds do not involve the central position of mouth movement at all (except for /a/ in a lower position), the students produced /æ/ which is a more familiar mouth movement for the students.

All of the students show variations in vowel’s pronunciation in their imitation speech. Many studies support that Japanese L2 learners have a difficult time producing correct vowels because of the lack of variation of vowels in Japanese. It seems that this dilemma applies to Japanese university students in this study as well.

### 3.1.2 The Consonants

As there are obvious differences in vowels in the two languages, significant variations in consonants are expected. Ohata (2004) noted that there are more consonants in English than in Japanese, and that there are no positions of labiodental, interdental, and alveolar productions in Japanese.

First, certain consonants were replaced with other consonants. Second, consonants were added. Third, certain consonants were deleted. See Table 2 for the occurrences of these in the data.

Table 2. Consonant sounds produced by the participants

Noted Changes	Addition	Deletion
θ - > s (6)	r (1)	r (3)
v -> b (6)	d (1)	w (2)
ð -> z (3)	z (1)	θ
ð -> d (2)		
r -> l (2)		
ʃ -> t (1)		
s -> z (1)		

1. **Change of consonant** - This variation occurred the most in the participants' oral production. The most frequent change was done in fricative of /θ/ replaced by fricative /s/ in alveolar position. This was followed by the voiced fricative /v/ which was replaced by /b/, a voiced stop. Finally, fricative /ð/ was replaced by /d/, another voiced stop. The change of /r/ into /l/ can be explained by the unspecified position of the Japanese /r/ sound. These instances are also seen in Saito's (2011) study where /f, v, θ, ð, w, l, ɹ/ are the most difficult consonants Japanese speakers of English have a hard time producing.

2. **Consonant addition** - This phenomenon occurred twice when they pronounced the word clothes /kloʊz/ as /kloʊz·iz/, adding /iz/ at the end. Because of the spelling of the word "clothES", Japanese students tend to pronounce it as it is spelled.

3. **Consonant deletion** - The most frequent deletion was with the final /r/ sound in the words, "war", "counter", and "gangster. Again, most Japanese words do not end with consonants, and the deletion of /r/ in their oral production is no exemption as noted in Riney, Takada & Ota's (2000) study.

### 3.2 Suprasegmental features

#### 3.2.1 Stress/Pitch

In English, putting the correct stress in a multisyllabic word is important to communicate clearly one's ideas. Japanese language, however, puts more emphasis on pitch accent, or the relative highness and lowness of a tone assigned to a syllable in a word. The examples below (Anderson-Hseih, 1996, p. 317) illustrate this, where "L" represents a low pitch or tone and "H" a high pitch or tone:

L H H	L H H L	L H L
/taka ra/	/kaga ribi/	/ko koro/
"treasure"	"bonfire"	"heart"

Students in this study stressed mostly the middle parts of the words as seen in the words below. Martin (2004) argued that this could be a *Katakata* effect since these words exist in Japanese vocabulary as loanwords; thus when they pronounce them they

sound like Japanese words already. Koike (2014) mentioned that once pitch goes up within a Japanese word, it either stays the same or falls down, unlike in English where stress uses pitch, length, and loudness. All of these words ended with addition of vowels, except for the word, *Alibaba* and *America* which already end in vowels.

#### American speakers

1. dy · na · 'mic
2. 'Ali · baba
3. 'ro · yal · ty
4. 'ro · mance
5. 'pass · port
6. A · 'mer · i · ca

#### Japanese students

1. 'dy · na · mic
2. Ali · 'ba:ba
3. ro · y'al · ty
4. ro · 'mance
5. pass · 'port
6. A · me · 'ri · ca

#### 3.2.2 Intonation

Intonation in English and Japanese have some common characteristics such as final rising intonation in yes-no question, commands, statements, and wh-questions. Compared to English intonation, Japanese has less pitch variations in intonation which is used to mark stress on the word level (Avery & Ehrlich 1992). MacCarthy (1978) mentions that because of this, Japanese English speakers may sound flat which may affect their intonation patterns.

It is interesting to note that three out of the seven participants were able to replicate accurately intonation patterns used by speaker in the model video. The rest showed some distinguishing features in their intonation. Avery and Ehrlich (1992) pointed out the importance of pitch ranges in constructing intonation patterns. In the original video where the sentences ended with a falling intonation for questions, the participants showed a rising intonation at the end. Following are the selected samples from the data to illustrate this point:

##### 1. Rising intonation in wh-questions

In the original video, the speaker used a falling intonation in these two particular questions, yet this Japanese participant after several attempts to

copy the model, still produced a rising intonation at the end as seen in the following:

So what happens when the rest of us get access?  
So what happens now when we all have the internet?

On another instance, a student successfully replicated falling intonation used in the first sentence by the English speaker in the model video, yet failed to observe the rising intonation pattern used in the second statement. In fact, all of the questions in his imitation speech ended with a falling intonation pattern contrary to the observed patterns in the original video (see the examples below). This can be explained by Koike (2014)'s study of mora-timed rhythm which leads Japanese to produce unnatural rhythm in L2.

How about watching animations?  
Do you want to see a Sci-Fi movie?

## 2. Unnatural stops after adverbs

There is also a noted unnatural stops within the sentences produced by the participants where pauses were made after adverbs. The arrow signs indicate a stop between the words which in the examples above, are after the adverbs, "completely" and "exactly". Since in most cases in English where adverbs could come at the end of sentences, it could be argued that the students' pauses at this part of the sentences may indicate that they are anticipating or expecting a start of a new sentence.

And what we see now is exactly the same city in the eighteenth century.

Three: the lack of a desirable mobile phone in its portfolio,  
which leaves it completely dependent on others as more shopping moves to  
mobile.

## 3. Pitched/Falling intonation in statements

Another interesting finding is that when a wh-question marker was inserted in a sentence, two instances of a marked high pitch and falling intonation within the words were observed from the data.

This intonation pattern may have been produced due to the participants' assumption that wh-

question markers often indicate the beginning of a new sentence. This occurrence can also be explained by the use of high pitch to mark a stress in the word level in Japanese. See examples below:

See how ten dramatic years defined our world.

One: slow international growth particularly in China where it's failed to  
make meaningful headway against Chinese e-commerce giant Alibaba  
and other local players.

## 4. CONCLUSION & IMPLICATIONS

The present study attempted to describe the phonological features of twelve Japanese university students as they tried to replicate English speakers' oral production as part of their requirements in their freshman English course. In terms of segmental features, the data reveal the participants' tendencies to add, delete, extend, and change both the vowel and consonant sounds in their production of English words. These are attributed to the features of their Japanese language. In describing the suprasegmental features where stress and intonation were examined, they also tend to stress the middle syllables of the words. This could be affected by the inclusion of these loanwords in *Katakana* reading texts which have become part of their vocabulary, but pronounced in the Japanese way. For their intonation patterns, rising intonation in *wh*-questions was noted with slight deviations from the English versions, and unnecessary stops or pauses made within the sentence after the adverbs were evident. However, given the limited number of the participants, the description provided in this study may not fit the general characteristics of Japanese English, and that further studies with larger scale of corpus will reify concrete definitions of segmental and suprasegmental features of Japanese English. Nevertheless, WE paradigm establishes various received pronunciation and recognizes comprehensibility as a common ground. Gardiner and Deterding (2020) likewise argues that the speech style is constantly evolving from robust interaction across nations and unlimited access and exposure to the Internet.

In light of these findings, explicit pronunciation instruction on English loanwords is needed as misplaced stress on syllables within certain English words may lead to miscommunication. It might also help to pay attention to Suarez and Tanaka's (2001) survey results where 40 per cent of Japanese students felt that there was not enough instruction on pronunciation in their English instruction. This can be resolved by adapting explicit instructions on pronunciation activities such as the imitation speech activity used in this study which can/should be moderated/appropriated to enable learners to be aware of their own speech features vis-a-vis the target segmental and suprasegmental features of English. It should be emphasized, however, that the aim is not necessarily to sound like a native speaker, but to instruct them to be aware of their comprehensibility in that language, and to teach pronunciation as a resource in negotiating meaning. Such activities can also be carried out in the format of distance-learning modules in which students can be responsible for choosing their own authentic materials from various online sources, which will promote self-autonomy along with learning empowerment (Anthony, 2021).

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