

Another look at the results of an English pronunciation course for Japanese college students

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ABSTRACT

Forty-five Japanese university students received pronunciation instruction over the course of 8 months with a two-month summer break in between. The learners practiced segmentals and suprasegmentals in controlled activities with a focus on the accuracy (focus on forms) and practiced them in meaningful communicative contexts while paying attention to their pronunciation (focus on form). They received a total of 5 hours and 40 minutes of pronunciation instruction. The participants read a diagnostic passage immediately before the instruction (Time 1), after 9 weeks of instruction (Time 2), and at the end of the instruction period (Time 3). Fourteen native speakers of English rated the comprehensibility (ease of understanding) and the accentedness (how different from NS's norms) of the utterances produced by twelve of the learners. An analysis of the ratings showed that the learners showed no statistically significant improvement in terms of comprehensibility or accentedness from Time 1 to Time 3. This paper suggests possible reasons for the lack of the improvement, and future areas for better pronunciation instruction by analyzing some of the participants' pronunciation. It also suggests how 'thought group' and 'sentence stress' seem to play important roles in facilitating pronunciation comprehensibility.

Key words: pronunciation instruction, EFL learners, FonFS, FonF, comprehensibility, accentedness, thought group, sentence stress

INTRODUCTION

Pronunciation instruction for ESL/EFL learners has not received much attention although phonology is a very important element of oral communication. Exploring possible reasons for this, it seems that many educators do not believe that teaching pronunciation will actually impact their learners' pronunciation due to the lack of an extensive empirical research on the effectiveness of the instruction (Taguchi, 2013). The quasi-experimental research I have been conducting might be able to offer evidence to such skeptical teachers that if they spend a certain amount of time for pronunciation teaching in their classes, most students will be able to improve their comprehensibility and accentedness. The previous research (Chiba, 2012) showed that a

balanced-approach seems to be effective in improving learners' comprehensibility¹⁾. Such instruction would take care of both mechanical aspects of pronunciation (place and manner of articulation of segmentals) and messages/meaning that sounds can be conveyed through stress and intonation. In other words, it seems effective when learners practice pronunciation in a meaningful context with other learners (FonF) after learning how they can produce a specific sound or intonation pattern from explicit instruction (FonFS).

The last study I presented was based on an analysis of the speeches produced by learners at Time 1 (pre-instruction) and Time 2 (after 3 hours²⁾ or the 9th week of instruction). This time, I include data of Time 3 speeches (recorded after another 2 hour-40 minutes of instruction, which is an additional 8 weeks) in order to see whether my previous statement is corroborated and the improvement at Time 3 from Time 1 is greater than the improvement at Time 2 from Time 1. I also analyze two of the learners' speeches to suggest how 'thought group' and 'sentence stress' may need to receive more attention in teaching pronunciation, especially in Japanese EFL contexts.

METHOD

The basic method of this study has been outlined in Chiba (2012) and Taguchi (2013).

Research questions

This study explores the following research questions:

1. After receiving FonFS and FonF pronunciation instruction, will respondent comprehensibility improve more at Time 3 than at Time 2 compared to the baseline of Time 1?
2. After receiving FonFS and FonF pronunciation instruction, will the respondent accentedness improve more at Time 3 than at Time 2 compared to the baseline of Time 1?

Hypotheses

Hypothesis 1: The improvement of comprehensibility will be statistically significant ($p < .05$) at Time 3, after receiving FonFS and FonF pronunciation instruction.

When learners received explicit instruction on pronunciation and practiced learned items in interactive

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- 1) *Comprehensibility* is described as a listener's perception of how difficult it was to understand a speaker (adapted from Derwing et al. (1997)). I also measured *accentedness*: a listener's perception of how different a speaker's accent was from a native speakers' (adapted from *ibid.*).
 - 2) In Taguchi (2013) I mistakenly stated the total instruction time was six hours.

activities longer, over the course of 8 months, they would be apt to show more improvement, even though the class met only once a week and there was a two-month summer break.

Hypothesis 2: The improvement of accentedness will be statistically significant ($p < .05$) at Time 3, after receiving FonFS and FonF pronunciation instruction.

As reported in my previous research and in other experimental studies (cf. Munro and Derwing, 1995), accentedness seems to persist, unlike comprehensibility. However, since most EFL students in Japan never receive formal pronunciation instruction, their accentedness will tend to be less strong after receiving balanced pronunciation instruction.

Participants³⁾

The initial sample consisted of 45 first-year undergraduate economics majors at a mid-ranking private university in Tokyo, Japan. This number was reduced to 12 due to low rater reliability in the 2012 listening sessions (Taguchi, 2013), and the lack of raters availability in 2013. The demographics of the student participants are the same as Taguchi (2013), shown in Table 1 below.

Table 1 *A Demographic Profile of the Student Participants in the Study*

Experimental Group		
Number of participants	6	6
Gender	Male	Female
L1	Japanese	

Treatment

Pronunciation Instruction Time

As a part of their weekly 90-minute regular English course, the learners received 20-minute pronunciation lessons over the course of 17 weeks; starting in April 2012 and ending in December 2012, with an 8-week summer break. The total pronunciation instruction time was 5 hours and 40 minutes. A more detailed pronunciation schedule is in the Appendix, and a sample lesson is found in Chiba (2012).

3) Prior to the pronunciation course, informed consents were collected from all the learners. I explained the purpose of the research and the confidentiality of their data in their native language. I also told them that the participation was strictly voluntary and had nothing to do with their course grade. I have not used any speech samples from those who did not sign an informed consent. I also completed an appropriate informed consent procedure for raters according to the raters' university guidelines.

Items Dealt with in the Lessons

The instruction in this study dealt with both segmental and suprasegmentals (Avery and Ehrlich, 2008, pp. 134-138), with a focus on English sounds that Japanese speakers often have difficulty with.

Approach and Materials

As mentioned in Taguchi (2013), pronunciation teaching for ESL/EFL learners is thought to be effective when incorporating communicative activities (FonF) followed by explicit instruction of the target pronunciation and controlled practice (FonFS). Therefore, once again, I used the same textbook *Pronunciation Pairs*. This text includes specific information about the articulation of segmentals and how to convey an intended message through suprasegmental features such as intonation and stress.

Data Collection

To measure the improvement in the participants' pronunciation, a diagnostic passage "Clear speaking test" from *Clear Speech* was recorded before instruction (Time 1, in April 2012), before the summer break (Time 2, in July 2012) and after the last class (Time 3, in December 2012) as indicated in Figure 1.

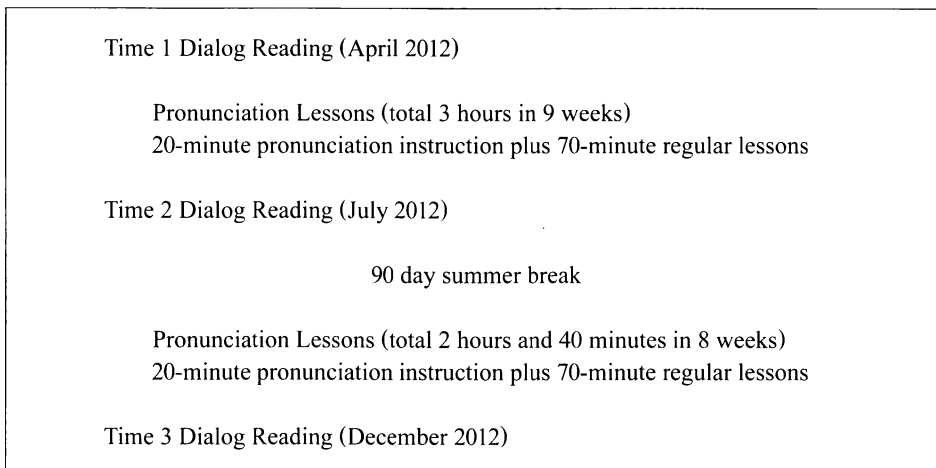


Figure 1. The time frame for this study.

The learners recorded their speeches with an IC recorder individually in a quiet classroom. Before recording, I read aloud the diagnostic passage once, and asked if there were any words they could not pronounce. I asked them to read the text clearly so that listeners could understand them well. After the recording, the texts for the audio files were collected from all the students to reduce any practice effects. The

speeches were not practiced during the course of instruction.

Assessment

Among the Time 1 and 2 speeches evaluated by 18 Americans during the 2012 rating sessions, only those 12 speeches with inter-rater reliability estimates above *Cronbach* $\alpha > .6$ were evaluated in 2013. After all, twelve learners' speeches recorded at Times 1, 2 and 3 were evaluated in the 2012 and 2013 listening sessions by American undergraduate students I recruited from second year Japanese language classes, whose L1 was English

Before the ratings, I explained that "comprehensibility" was how easy they would find a speech to understand, and "accentedness" was how different they would find the speaker's accent from native speakers' in general, as Derwing et al. (1997) suggests. Like the other listening sessions I have been conducting, I tried to get them to reach an agreement about the two categories by playing four sample speeches and asking every rater about their rating of its comprehensibility and accentedness and about specific sounds or sound patterns for their rating so that the group could share others' rating. The raters freely expressed their opinions and discussed their ideas with each other as well. After that, they evaluated learners' speeches in terms of comprehensibility and accentedness according to a 5-point Likert scale.

Table 2 *The Inter-rater Reliability (Cronbach alpha) for the Speeches Recorded at Times 1, 2 and 3*

	Time 1	Time 2	Time 3
Number of speakers	12 (M 6 / F 6)		
Number of raters ⁴⁾ (L1 English)	10	12	6
Comprehensibility	.841	.857	.780
Accentedness	.783	.890	.733

As Table 2 above indicates that the ratings for speeches recorded Times 1, 2 and 3 were within acceptable ranges in terms of reliability, I move on to analyze these sets of data as below.

Speech Analysis

Among the evaluated speeches above, I analyzed two learners' speeches whose ratings changed the most of all the learners in order to see what might cause good comprehensibility.

4) The total number of raters was fourteen because they evaluated speeches from two Times.

RESULTS

Quantitative Analysis

Comprehensibility Ratings

The descriptive statistics for the comprehensibility ratings were on a 5-point Likert scale in which 1 represents “extremely easy to understand” and 5, “extremely difficult to understand.” Table 3 shows the group means and standard deviations for the learners over time.

Table 3 *Group Means, Standard Deviations for Comprehensibility*

n=12	Time 1		Time 2		Time 3	
	M	SD	M	SD	M	SD
	2.80	.50	3.02	.52	2.56	.54

It is difficult to ascertain whether or not some practice effect occurred by the third reading. No practice effect between the first and second reading was detected (Taguchi, 2013).

The ANOVA repeated-measures in Table 4 shows that the improvement of the group was statistically significant, ($F(2, 22)=4.216$, $MSe=.156$, $p=.028$), but not from Time 1 to Time 3, as I hypothesized. I will discuss this later along with its accentedness improvement.

Table 4 *ANOVA (one-way: repeated) Summary Table for Comprehensibility Rating*

Source	SS	df	MS	F	p
TIME	1.315	2	.657	4.216	.028
SUBJECTS	5.453	11	.496		
ERROR	3.430	22	.156		
TOTAL	10.198	35			

Accentedness Ratings

Table 5 shows the group means and standard deviations of the accentedness for the learners over time.

Table 5 *Group Means, Standard Deviations for Accentedness*

n=12	Time 1		Time 2		Time 3	
	M	SD	M	SD	M	SD
	3.58	.39	3.78	.57	3.25	.50

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Like the comprehensibility rating, the ANOVA repeated-measures in Table 6 shows that the improvement of the group was statistically significant, ($F(2, 22)=7.041$, $MSe=.851$, $p=.004$), but that was from Time 2 to Time 3, not from Time 1 to Time 3. You can see this visually in Figure 2 below.⁵⁾

Table 6 ANOVA (one-way: repeated) Summary Table for Accentedness Rating

Source	SS	df	MS	F	p
TIME	1.701	2	.851	7.041	.004
SUBJECTS	5.384	11	.489		
ERROR	2.658	22	.121		
TOTAL	9.743	35			

Both the comprehensibility and the accentedness ratings fell at Time 2 and rose at Time 3, even to a higher point than Time 1, with the result that the improvement from Time 2 to 3 is considered to be statistically significant.

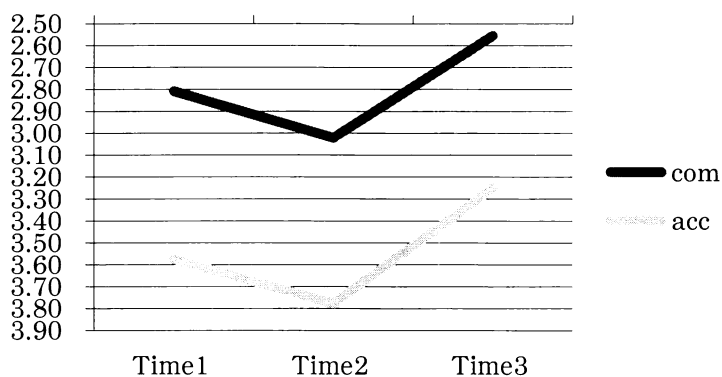


Figure 2. Group means on comprehensibility and accentedness ratings over time.

Note. com=comprehensibility; acc=accentedness

Qualitative analysis

Based on an assumption that qualitative analysis of the participants' speeches would reveal factors

5) Post-hoc pairwise comparisons also confirm that the difference between Time 2 and 3 are significant both in terms of comprehensibility and accentedness ratings.

especially influencing comprehensibility, I analyzed speeches recorded by two learners, one of which is called Learner A (male), and the other Learner B (female). I choose these two participants because I assume that investigating those whose comprehensibility ratings improved the most from Time 1 to Time 3 of all the learners (Figure 3) might offer a clue as to factors that would affect comprehensibility.

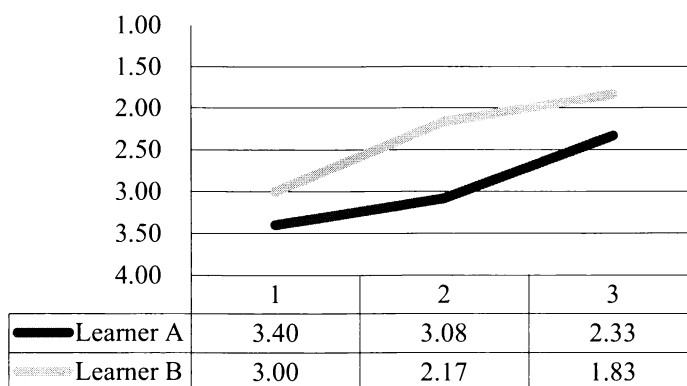


Figure 3. The comprehensibility ratings of Learners A and B at Times 1, 2 and 3.

Speech Analysis

The two learners' recordings at Times 1 and 3 reveal that segmental aspects seem to stay the same over time while obvious errors, especially repeating a whole word or a part of it, stand out in their Time 1 speeches (Table 7).

Table 7 Reading errors at Times 1, 2 and 3 by Learners A and B

Learner A (comprehensibility rating)	Repetition	Omission	Insertion	Wrong vowels
Time 1 (3.40)	where 's, the them	books, can't	(sound)s	sailing(selling), selling(ceiling)
Time 2 (3.08)	some, you can, mea(ning)		(sound)s	
Time 3 (2.33)			(sound)s	there(they)
Learner B	Repetition	Omission	Insertion	Wrong vowels
Time 1 (3.00)	di(rectly), di(fferent), di(fferent), mix(ed), wi(ll), la(st)	studying, economics, economics	(sound)s	sailing(ceiling), measure(major)
Time 2 (2.17)	boo(ks), at, what are			sailing(ceiling)
Time 3 (1.83)	di(fferent), econo(mics)*3 – same place		need(to)	sailing(ceiling)

Note. The words in the table are words the learners pronounced while reading. Di(rectly) means that the learner repeated the first syllable of "different" twice. Sailing(selling) means the learner said "sailing" while he should have read "selling."

[Errors]

We might suspect that the more errors made by students, the lower their comprehensibility ratings were. However, the situation does not appear to be completely linear: the sheer number of obvious errors does not seem to tell us whether a speech is more comprehensible or not. Learner B's comprehensibility ratings at Times 2 and 3 are better than Learner A's at Time 3, who made only two errors.

[Thought Group]

To conduct a further investigation into factors influencing comprehensibility, I used a software program called SUGI SpeechAnalyzer, which visualizes speech patterns. As a result, most of both speakers' segmental features and word stresses seemed to remain the same at Times 1, 2 and 3 while their comprehensibility ratings improved. What seems to have changed over time is whether they inserted appropriate pauses. The next several paragraphs offer a brief summary of how Learner A inserted pauses between words.⁶⁾

If you examine how he pronounced the sentence, "It's on the corner of Main Street and Selling Road" on the first recording (Figure 4), you may notice that the two function words, 'of' and 'and' were separated from their headwords, 'Main Street' and 'Selling Road' respectively. As the result, this person failed to group words effectively into one thought group.

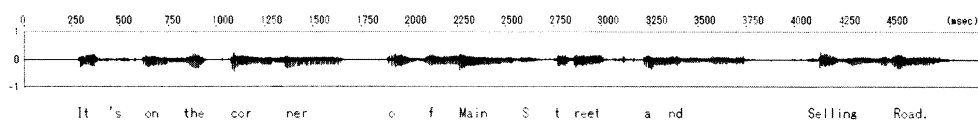


Figure 4. Sound waves of a short English sentence by Learner A at Time 1.

Although the segmental features remained almost identical, at Time 3 this reader was better at de-emphasizing the function words and connecting words.

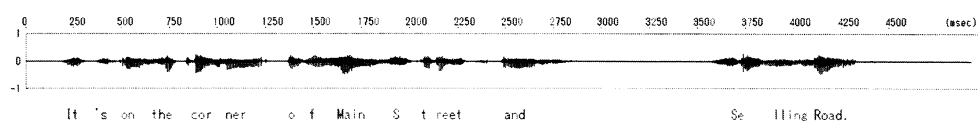


Figure 5. Sound waves of the same English sentence by Learner A at Time 3.

6) Since most of the segmental features remain the same over time, I choose to use regular fonts to transcribe the sounds, instead of IPA.

The following (Figure 6) is that of an American English speaker, in which function words were reduced to connect surrounding content words. Notice how this contrasts with how a native speaker read the same sentence:

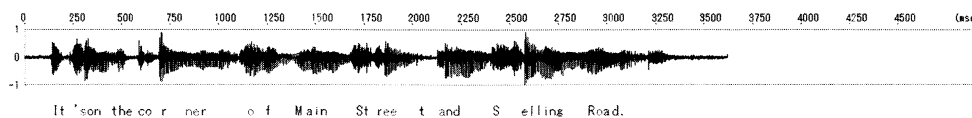


Figure 6. Sound waves of the same English sentence by a native English speaker.

If you fail to group words into an idea, listeners may have a hard time understanding what was spoken (Gilbert, 2005b, p.60). A *thought group* is described as “a group of words that belong together” (Gilbert, 2005a, p.129). This is a grammatically and semantically coherent group (Celce-Murcia, Brinton & Goodwin, p. 221), and in order to form a group, a speaker needs to know which is a focus word. The speaker also needs to know how to stress it by making it longer, louder, and higher in pitch (Avery & Ehrlich, p.240). He/she also needs to de-emphasize words surrounding the focus to make a contrast. And he/she has to use appropriate pauses to distinguish other thought groups. In other words, an adept speaker needs to be able to perform almost all the suprasegmental pronunciation skills.

The same patterns found in his reading (“I need to buy some books for my classes.”), where at Time 1, all the underlined function words were not connected to their head words (‘to’ should be connected to ‘need,’ and ‘some’ should be connected to ‘books,’ for example) while he de-emphasized those function words and connected to appropriate head words at Time 3 (Figures 7 and 8).



Figure 7. Sound waves of “I need to buy some books for my classes.” by Learner A at Time 1.

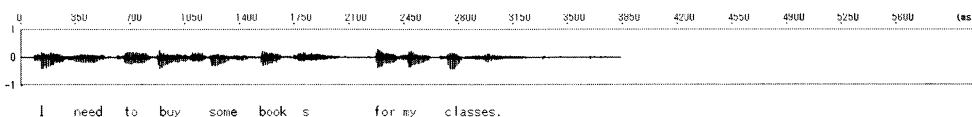


Figure 8. Sound waves of the same sentence by Learner A at Time 3.

[Sentence Stress]

In addition to using effective pauses, appropriate pitches also influence comprehensibility ratings. Notice how ‘can’t’ is pronounced in the sentence, “You can’t buy books at the library.” The fundamental frequency (F0) in Figure 9 shows Learner B failed to stress at Time 1, while she raised a pitch to emphasize the word at Time 3 (Figure 10).

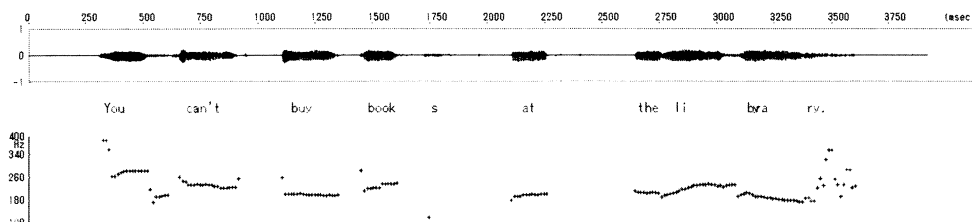


Figure 9. Sound waves and F0 of “You can’t buy books at the library” by Learner B at Time 1.

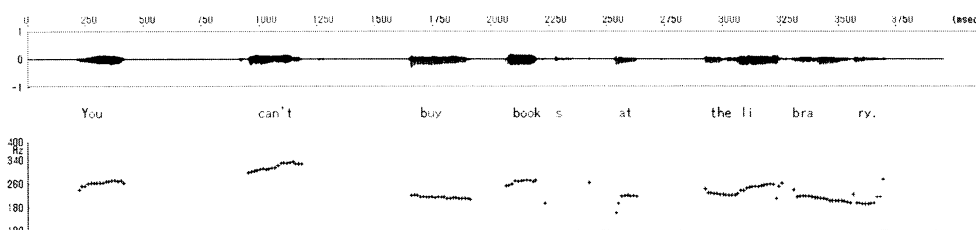


Figure 10. Sound waves and F0 of the same sentence by Learner B at Time 3.

Since “can’t” always has to be pronounced with a strong stress (Baker & Goldstein, 2008b, p.21), a listener would not be able to understand a speech easily if ‘can’t’ is pronounced like Learner B at Time 1 in Figure 9.

Forming an appropriate thought group and using effective sentence stress is difficult for many Japanese EFL learners because Japanese is a mora-timed language rather than a stress-timed language (Avery & Ehrlich, 2008, p.134). Although I have to keep in mind that it is impossible to know the exact cause of the improved ratings of their comprehensibility, ‘thought group’ and ‘sentence stress’ seem to be one of the main causes, and therefore may need to receive more attention in English classrooms, especially for Japanese learners.

DISCUSSION

I have thus far attempted to follow up on my previous studies as to whether FonFS and FonF pronunciation instruction appears to improve some Japanese college students' English pronunciation. The results here suggest that neither of the comprehensibility or accentedness improvement was statistically significant.

Similar to my previous study, these results here contrast with my 2010 results as reported by Chiba (2012). That study suggested that the experimental group did show a statistically significant improvement in terms of their comprehensibility. I stated possible reasons for the lack of improvement in Taguchi 2013 in details, but among them, the instruction period seems to play an important role in enhancing learners' comprehensibility and accentedness. Due to some curricular constraints, most teachers usually cannot allocate the whole class time solely for pronunciation teaching. In other words, every aspect of English pronunciation cannot be taught or learned. The analyses above show that teaching students 'thought group' and 'sentence stress' would improve their comprehensibility. This can be incorporated into grammar teaching, which still dominates most EFL classrooms in Japan.

Although investigating only several speeches by just two speakers does not allow us to make any definitive statement regarding comprehensible speeches, the above analyses might be able to offer a general idea about current Japanese college English learners' speeches and implications for effective pronunciation instruction to such learners. If features of Learners A and B are common to most Japanese English learners, it seems preferable for pronunciation instruction to focus more on 'thought group' and 'sentence stress', including de-emphasizing (or reduction) of function words, rather than to start with teaching segmental features such as differences between /r/ or /l/ or /i/ or /t/, which are often hard for Japanese learners to acquire, both in production and perception. Teachers may not need to pay much attention to segmental features in teaching Japanese learners, not only because English segmental features are very difficult to acquire, but also because failing to acquire them might not cause serious comprehensibility problems in many cases. This is still within my speculation, but it may be worthwhile to change the order of features to deal with in pronunciation instruction, from starting with vowels and consonants as you see in many textbooks, to teaching forming words into a meaningful group. This would in turn emphasize that learning English is learning a means of communication.

AREAS FOR FUTURE RESEARCH

The statistical analysis showed that the 8-month instruction made no positive changes in the participants' comprehensibility or accentedness as a group. The factors that have been suggested in Taguchi (2013) would

account for this again: (1) participant characteristics (voluntary vs. required), (2) class size differentials, and (3) instructional length (20 hrs. vs. 5 hrs. 40 mins.). Future studies should consider these factors to improve classroom teaching.

A close look at the two learners' speeches revealed that it appears preferable to focus on teaching effective use of pauses and sentence stress in order to improve learners' comprehensibility relatively in a limited time frame of English courses. Then how can we teach learners to make appropriate pauses and stresses effectively? As I mentioned above, it would be realistic to incorporate teaching 'thought group' and 'sentence stress' into grammar teaching or almost any skill teaching. Teachers may be able to explain what should be emphasized or de-emphasized when they introduce/review a grammatical point and tell how a sentence changes its meaning by shifting a sentence stress. In teaching listening, teachers may be able to point out how native speakers use pauses to make their speeches comprehensible. In this study, my pronunciation instruction dealt with segmentals and suprasegmentals hand-in-hand, and teaching 'a thought group' and 'sentence stress' came rather later in the course. I would like to investigate whether to prioritize such features and consistently repeat teaching them in different contexts not only when dealing with listening and speaking, but also grammar and reading, would improve learners' comprehensibility to a larger extent.⁷⁾

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7) Thanks are due to Tim Newfields for proofreading this text and for providing "native" English speaker speeches.

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APPENDIX

Pronunciation Instruction Schedule 2012

	Month	Date	Content	Units in Pronunciation Pairs
Time 1 Recording				
1	April	21	1 / iy /, stressed syllables in words	1
2		28	2 / ɪ /, stress in numbers	2
3	May	12	3 / e /, falling and rising intonation	3
4		19	4 / ey /, stress in sentences	4
5		26	5 / æ /, the most important word	5
6	June	2	6 review	6
7		9	7 / ʌ /, strong and weak pronunciations	7
8		16	8 / ə /, 'can' and 'can't'	8
9		23	9 / əɪ /, intonation in choice questions	9
Time 2 Recording				
Summer Break				
10	October	6	Phrase groups	10
11		13	Using stress and intonation to show a contrast	11
12		20		Review 10&11
13		27	Stress in compound nouns	16
14	November	10	Sentence rhythm and timing	17
15		17	Intonation in lists	22
16		24	Linking a final consonant	24
17		30	All the features the students learned throughout the course (April – November)	Review
Time 3 Recording				