

Feature Article フィチャード アーティクル

Developing an online environment to enable the independent learning of English pronunciation 英語の発音の自主学習を可能にするオンライン環境の開発



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Abstract: This exploratory study examines an online pronunciation course designed to (a) help university students develop meta-linguistic knowledge about pronunciation, (b) gain familiarity with cognitive and meta-cognitive strategies (c) develop self-monitoring skills, and (d) develop phonological competency individually and at their own pace. 110 low-intermediate, first-year university students in a required listening course completed eight post-module questionnaires and provided feedback on six areas using a 5-point Likert scale. Two additional questionnaires administered at the end of the semester asked students about their perceived improvement, performance, helpfulness of the assignments, and other aspects of the class in general. All questionnaires allowed for open comments. The results showed students desired more guidance with segmentals and preferred Japanese instructions. Open comments suggested the course provided a satisfactory environment for achieving the above goals, but improvements could be made by including more multimedia, more freedom, and more voices.

Keywords: pronunciation learning strategies, metalinguistic, self-monitoring, autonomy, CALL

要旨: この探索的研究は、大学生が(a)発音についてのメタ言語的知識を発達させ、(b)認知ストラテジーおよびメタ認知ストラテジーへの理解を深め、(c)自己モニタースキルを発達させ、(d)音韻論的能力を個別に且つ各自のペースで発達させるのを支援するために作成されたオンライン発音コースについて考察するものである。必修のリスニング授業を受講する初中級レベルの大学1年生110名がモジュール終了後の8つのアンケートに回答し、5段階のリッカート尺度を用いて6つの領域についてのフィードバックを提供した。学期末にさらに2つのアンケートを実施し、学生たちに向上したと思う点、学習への取り組み、課題の有益性、授業全般に関するその他の側面について質問した。すべてのアンケートには自由記述欄を設けた。本研究の結果から、学生たちは分節についてより多くの指導を希望し、日本語による指導をより好むことが分かった。自由記述からはこのコースが上記の目標を達成するのに十分な環境を提供したことが示唆されたが、マルチメディア、自由、そして学生たちの声をより多く取り入れることによって更なる改善が可能だと思われる。

キーワード: 発音学習ストラテジー、メタ言語、自己モニタリング、オートノミー、コンピュータ支援語学学習

Many teachers of Japanese students of English are already undoubtedly aware that many students struggle to accurately perceive and reproduce the sounds of English. According to Pawlak (2010), the complexity of foreign language pronunciation and the difficulty of achieving phonological competence in an EFL environment can be alleviated by fostering learner autonomy. Learner autonomy, as it relates to pronunciation learning, entails being able to self-monitor and self-evaluate so as to set goals, plan the learning process, and choose suitable strategies for improving one's pronunciation (Pawlak, 2011). However, this may prove impossible without a phonetic and phonological awareness of English (Vitanova, 2002) which can be developed through training in pronunciation learning strategies (PLS).

Research into PLS is still in its early stages, and there have been few studies examining what kinds of strategies exist and which would be beneficial to introduce to adult EFL students. Peterson (2000), describes 21 different tactics that her participants—American university students of Spanish—had used when studying pronunciation and organized them according to Oxford’s (1990) classification system. Cognitive and metacognitive strategies, made up of naturalistic and formal practice, learning about and analyzing the sound system, setting goals, planning for language tasks, and evaluating oneself, were the most common PLS used. (For other studies on PLS see Derwing & Rossiter, 2002; Eckstein, 2007; Osbourne, 2003; and Varasarin, 2007.)

Getting students to self-monitor and self-evaluate means explicitly teaching students about specific features of English pronunciation (Vitanova, 2002). In the metacompetence model of phonological acquisition, Wrembel (2008) describes phonological metacompetence as “conscious knowledge of and about the grammar of the language and which may be developed by making the learner metalinguistically aware of L2 phonetics and phonology” (p. 2). Wrembel has proposed an approach for teachers to help students develop phonological metacompetence, made up of basic awareness-raising activities, articulatory control exercises, informed teaching techniques, and the use of multimedia learning aids, which will “equip students with self-monitoring strategies” (p. 2). This strongly suggests that there is value in explicitly teaching pronunciation features even though this has been seen as incompatible with the communicative approach (CA). However, pronunciation teaching has gradually come to focus on the importance of producing comprehensible speech (over nativeness) because it facilitates communication. This means that both segmentals that have a “high functional load” such as vowel sounds found in minimal pairs and meaning-rich prosodic features should be taught so students can develop phonological competency (Celce-Murcia, Brinton, & Goodwin, 1996).

Perception plays a key role in the development of phonological competency, and the L1 greatly influences how L2 sounds are perceived because the perceiver must have enough prior knowledge to identify, interpret, and sometimes even review and reappraise the underlying phonological units in order to accurately process language (Tatham & Morton, 2011). Research has shown that adults can become able to perceive and produce phonemes crucial to communication in the L2 and create new categories for those sounds (for an extensive discussion of this and other aspects of the Speech Learning model, see Flege, 1995). It has also been shown that L2 vowel production is influenced by how L2 vowels are perceived and that non-native subjects’ accuracy is related to their accuracy in *perceiving* the same sounds (Flege, 1997). There is also evidence that perceptual training can lead to improvement in production, even without teacher-instructed articulation practice (Thomson, 2011). For suprasegmentals, Abe (2009) found that providing Japanese university students with instruction about rhythm, linking, assimilation, and elision produced gains in perception and production of those features. (For other studies documenting the effectiveness of teaching suprasegmentals in order to improve perception and production see Derwing & Munro, 1998; Pennington & Ellis, 2000; Tanner & Landon, 2009.)

In the case of Japanese, the influence of the student’s L1 creates serious perception and production problems at both the segmental and suprasegmental levels. Two influential features of Japanese that affect English pronunciation are the lower number of vowel and consonant possibilities and its predominantly consonant-vowel (CVCV) syllable structure. Since Japanese only has 5 vowels and lacks consonants such as *v* (/v/) and *th* (both /θ/ and /ð/), English words represented in Japanese are noticeably different and often far removed from their English equivalents. Also, the syllable structure makes consonant clusters and closed syllables problematic (Rogerson-Revell, 2011).

Unfortunately, the use of katakana as an aid in English reading and the large number of loanwords from English modified to fit the Japanese sound system reinforces these problems (Martin, 2004). Furthermore, there are prosodic differences as well because Japanese is a mora-timed language, which means that almost all sounds represented by the kana syllabary are of the same relative length when spoken. In other words, は (ha) and あ (a) are the same length, but あん (an) or ああ (aa) are actually twice as long. Additionally, stress is distributed equally on each syllable and vowels are seldom reduced, so both rhythm and intonation are markedly different from English (Tsujiyama, 2007).

Although Japanese students’ formal study of English begins in junior high school, most students don’t receive enough pronunciation guidance or extensive exposure to comprehensible listening input before entering university. Historically, the approach to English teaching at the junior high and high school levels has focused on reading and grammar while preparing students for entrance

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examinations, which until recently did not focus on communication and therefore comprehensible pronunciation. In addition, junior high and high school teachers have reported lacking an understanding of English phonetics and phonology as well as training in methods for effectively teaching pronunciation in their classes (Kochiyama, 2011). Naturally, the majority of pre-university Japanese students of English have been exposed to non-Japanese English through popular culture and perhaps access to non-Japanese English teachers at the primary or secondary school levels, but by the time they reach university they still lack extensive experience listening to simple, non-Japanese English with their attention focused on pronunciation features (Nakashima, 2006).

University teachers hoping to assist students in developing students' ability to perceive and produce English more accurately might find it hard to effectively support their students due to large class sizes, time restrictions, curriculum constraints, and individual differences in ability and motivation. As more universities adopt Moodle and similar virtual learning environments, teachers might be attracted to such environments as a way of coping with classroom limitations and start to design and share multimedia content for pronunciation study. Such online environments, especially if they incorporate web 2.0 features allowing for collaboration and interaction, could help to foster autonomy (Bailly, 2010) as students learn to pay deeper attention to English and monitor their own pronunciation.

This paper introduces an exploratory project I undertook to develop an online Moodle environment where students could access explanations and examples in English and Japanese in order to develop their metalinguistic knowledge of English pronunciation, gain familiarity with cognitive and metacognitive strategies in order to develop self-monitoring skills, and explore activities and links to external sites where they could develop phonological competency individually and at their own pace. This project is in its early stages and this preliminary study was initiated to discover if the above goals were being met and in what ways the online environment could be improved. My hope is to create a shared, collaborative space for teachers and Japanese students of English which effectively achieves the above stated goals.

The class

The Moodle course was made up of 8 modules covering, in chronological order: morae, phonemes, syllables, vowels, consonants, ellipses and elision, stress 1, and stress 2. Since Moodle allows creators to hide or show content to course members, pronunciation modules were prepared in advance and hidden until that week's class had finished. At the end of a class, a new module was revealed and students were told to complete it by the next class.

The first three modules - morae, phonemes, and syllables - used a contrastive approach to get students to notice particular features about the English sound system vis-à-vis the Japanese. All three modules included English introductions to the topics with exercises, discussion board activities (for example, posting rhyming words or haiku), and quizzes. Beginning with the vowel module, the remaining modules were delivered using Japanese.

Two modules were created to reintroduce and review phonemes. The vowel module dealt with the differences between Japanese and English vowel sound categories, the physical articulation of vowel sounds, and self-awareness activities such as reporting about the shape of one's mouth when making Japanese vowel sounds. The approach used in the consonant module was similar except students were given instructions to go offsite to a free phonetics lab (<http://www.uiowa.edu/~acadtech/phonetics/>) which has flash animation, video, and native examples. Using these materials, students were asked to report which consonant sounds were difficult to hear and make. Although the morae topic was not reintroduced in Japanese, syllables were reinforced in the remaining suprasegmental modules where possible. The ellipses and elision module used recorded examples and quizzes to introduce students to the elimination of unstressed sounds (ellipses) and the addition of glides (the semivowels /w/ and /j/) between vowel sounds to aid in pronunciation (elision). Stress 1, the most independent module, asked students to select unknown words from the unit vocabulary list and note the word's syllables and stress pattern in their vocabulary journals. It also included a listening activity where students listened to two words and answered whether their stress patterns were the same. The final module, Stress 2, introduced stress differences in noun-verb homophones with word and sentence examples for practice and testing.

Since each module was created after viewing feedback from a previous module, the development of materials and the approach was organic and tried to respond to student needs within the limitations of

the environment. As will be discussed below, the lack of feedback and desire for further guidance were ever-present challenges, so where appropriate I addressed this by making Japanese-language videos and uploading them to the course. Being reactionary, these do not neatly fit into the modules, and could be conceived of as a “review” section added into the following week’s modules. In total, I made 11 videos for the course. Using the information about difficult consonants reported by students, I made 10 videos explaining how to articulate the difficult sounds, indicating where a similar sound might already exist in Japanese, and introducing practice exercises. The final video explained how to notice syllable boundaries using the mouth’s movements.

Additionally, for homework students were responsible for listening to a 15-minute Voice of America (VOA) Special English (<http://www.voanews.com/learningenglish/home/>) short story, completing one video on English Central (EC) (<http://www.englishcentral.com/>), doing the self-study unit from the textbook (*Listen In 1*, Nunan, 1998), and keeping a vocabulary journal of unknown words from a word list from the VOA short stories and textbook.

Participants

The participants in this study were 111 first-year students from a university in western Japan majoring in Law (n=51), Commerce (n=37), Economics (n=29), or Human and Environmental Sciences (n=4). All students were enrolled in English I, a required listening course focusing on TOEIC preparation, which met once a week for 90 minutes, 15 times during the first semester. The TOEIC Bridge was used as a placement test for incoming first-year students, and all students had tested into level 3 (low intermediate), the highest first-year English level at our university. Two classes were made up entirely of students from either Law (TOEIC Bridge average 145; Listening section average 69) or Commerce (146; 68), while the final class serviced the Economics department and Human and Environmental Science (145; 68) department.

Method

Data was collected using Moodle questionnaires (Appendix 1) in which students were asked if they completed the module (P) and for feedback on 6 areas: ease (E), meaningfulness (M), comprehension (C), interest in studying further (I), need for guidance (G), and language (L) using a 5-point Likert scale. They were also given space to freely write comments. The first questionnaire was delivered electronically in class and covered the first three modules: morae, phonemes, and syllables. It was given after a test and all students were able to finish before the end of the period. In subsequent weeks, a questionnaire was available online as the final step of each module and students responded to them on their own. From this data, I tabulated student participation on each module and calculated the means and standard deviations for each area. I then translated, coded, and tabulated open comments.

After the final exam, students completed a final Moodle questionnaire (Appendix 2) in class asking for feedback on course assignments, including the pronunciation modules. Afterwards, they filled out the university’s course survey. Again, students had enough time to complete all of the questionnaires. I was able to instantaneously view responses to Moodle questionnaires and received the analyzed data from the university’s survey along with any open responses after the semester ended. I tabulated the responses from the Moodle questionnaire and then translated, coded, and tabulated all of the open comments from both questionnaires.

Results

Figure 1 shows students’ self-reported progress for each module based on questionnaire responses.

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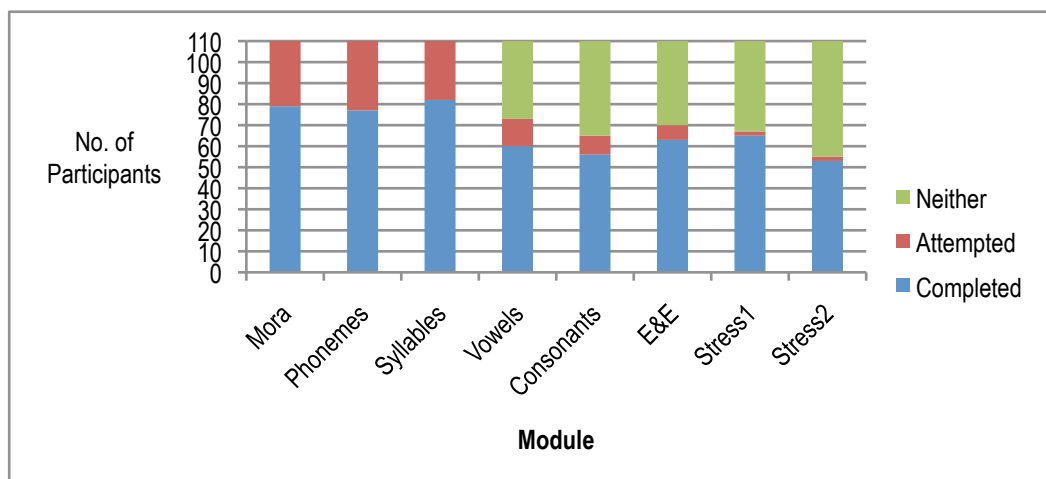


Figure 1: Participation per module

As Figure 1 shows, all students report having either completed or attempted the first three modules (N=110). After the third module, students began to fail to respond to the questionnaire, so it can only be assumed that they did not attempt the weekly activities. The final module was undertaken by only half of the original 110 participants, although the weekly participation is not a simple downward trend. The number of students attempting but not completing the modules does decrease steadily.

In the final Moodle questionnaire at the end of the semester, students were asked if they had completed all of the modules in the pronunciation course and 74% of the respondents (N=108) reported that they always did, 23% reported that they sometimes did, while only 3% said they had not completed one module. Figure 2 shows the distribution of completion numbers based on responses to the module questionnaires.

Modules completed	0	1	2	3	4	5	6	7	8	9	Total
Number of students	5	4	6	17	17	18	15	14	14	10	110

Figure 2: Total number of modules completed

Accordingly, only 13% of students completed all of the modules and 83% completed some of the modules. The questionnaires were voluntary which may account for the large discrepancy.

The means and standard deviations for student responses to the 6 areas investigated are displayed in Figure 3. The greyscale represents the scope of the first questionnaire and (N) is the number of respondents. In the first three modules, only English was used, and language (L) above shows that students had a strong desire to have the modules presented in Japanese, which was subsequently accommodated.

	N	E	M	C	I	G	L
Mora	110	2.81	3.49	3.03	3.05	3.59	3.88
SD		0.87	1.00	1.00	0.97	0.96	0.99
Phonemes	110	2.63	3.27	2.71	2.94	3.49	3.88
SD		0.94	0.82	0.88	0.89	0.88	0.94
Syllables	110	2.82	3.35	3.12	3.05	3.36	3.77
SD		0.94	0.93	0.87	0.92	1.00	1.00
Vowels	73	2.04	3.89	2.85	3.33	3.92	3.11
SD		0.88	1.05	1.08	1.09	1.00	0.97
Consonants	65	2.51	3.88	3.17	3.43	3.74	3.03

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	<i>SD</i>	0.95	1.05	0.94	0.93	0.85	0.86
E&E	70	2.79	3.75	3.31	3.41	3.59	3.15
	<i>SD</i>	0.92	1.07	0.91	0.99	0.81	0.80
Stress1	67	3.22	3.78	3.51	3.49	3.43	3.12
	<i>SD</i>	0.99	1.23	1.00	1.06	0.98	0.94
Stress2	55	3.55	4.09	3.95	3.76	3.56	3.35
	<i>SD</i>	1.02	1.08	1.09	1.03	0.95	0.79

Figure 3: Means and standard deviations for the six areas

E	M	C	I	G
Stress 2	Stress 2	Stress 2	Stress 2	Vowels
3.55	4.09	3.95	3.76	3.92
Stress 1	Vowels	Stress 1	Stress 1	Consonants
3.22	3.89	3.51	3.49	3.74
Syllables	Consonants	E&E	Consonants	Morae
2.82	3.88	3.31	3.43	3.59
Morae	Stress 1	Consonants	E&E	E&E
2.81	3.78	3.17	3.41	3.59
E&E	E&E	Syllables	Vowels	Stress 2
2.79	3.75	3.12	3.33	3.56
Phonemes	Morae	Morae	Syllables	Phonemes
2.63	3.49	3.03	3.05	3.49
Consonants	Syllables	Vowels	Morae	Stress 1
2.51	3.35	2.85	3.05	3.43
Vowels	Phonemes	Phonemes	Phonemes	Syllables
2.04	3.27	2.71	2.94	3.36

Figure 4: Means ranked by area

Two areas, (E) and comprehension (C), were the most variable and did not seem to be related to the language of delivery. The means for meaningfulness (M) were higher once the modules were presented in Japanese. Starting with the fourth module, it can be assumed that only the students who found the pronunciation modules meaningful continued to pursue their independent study. Interest (I) in studying the module topics in greater detail was low when the modules were in English, climbing a little after they were presented in Japanese. Desire for additional guidance (G) was highest with segmentals; however, students seemed to consistently want guidance on other modules regardless of language of instruction.

In Figure 4, the means of five areas—ease (E), meaningfulness (M), comprehension (C), interest (I), and guidance (G)—have been rearranged in rank order from highest to lowest.

Morae, Phonemes, and Syllables could be considered the test phase of the project as the modules were not well received and the results of the questionnaire were taken into immediate consideration to improve the following modules. These areas ranked worst in meaningfulness, comprehension, and further interest. Even though they were in English, they ranked higher in ease than modules covering segmentals in Japanese. Although 110 students completed the questionnaire, comments were received from only 12 students on the Morae module, 10 students on the Phoneme module, and 6 students on the Syllable module. Their responses are recorded in Figure 5 further below

The responses show students had difficulty dealing with unfamiliar topics and they wanted more support in the form of additional explanations, in-class guidance, or Japanese language. The two modules dealing with segmentals, vowels and consonants, ranked low in ease and comprehension,

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high in meaningfulness, and highest in desire for guidance. This suggests that there is something that made the segmental modules difficult and hard to understand while participants believed that the content was important to know. Comments from 17 students on the vowel and consonant modules are summarized in Figure 6.

Although the module had asked students to focus closely on the physical aspects of sound and the desire for more guidance was requested in the articulation, this proved challenging for some students form of in-class teacher intervention and the use of more examples. In response to this, more visual and aural examples were created to help students understand consonant articulation. As a result, students had remarked how much easier the consonant module had been thanks to videos, animations, and recordings.

Comment	Respondents		
	M	P	S
I don't understand.	2	3	2
I want to know more.	1	1	0
Please explain it more.	3	2	2
I don't even understand this topic in Japanese.	1	2	0
I've never studied this before.	0	0	1
Please talk about it in class.	2	1	1
Please use Japanese.	2	0	1
I'm not good with computers.	1	0	0

Figure 5: Comments from Morae, Phoneme, and Syllable modules

Comment	Respondents	
	V	C
Articulating vowel sounds is difficult.	5	
I want more guidance.	5	
I'm trying to pay more attention when articulating vowel sounds.	4	
The vowel charts were helpful.	2	
The recordings were helpful.	1	
The consonant module was easier than the vowel module.		3
It is hard to read/write pronunciation symbols.		3

Figure 6: Comments from Vowel and Consonant modules

The Ellipses and Elision module ranked around the middle in most areas, but low on ease. Both ellipses and elision rely on an understanding of syllable boundaries, with which students were still having a problem. Comments were received from 18 students and are listed in Figure 7 (see below). This time students commented on my Japanese, although more comments were expected because there was no native Japanese input on any of the Japanese language materials produced. In addition, these comments are what lead to the creation of the syllable video with link to additional syllable practice at <http://www.bbc.co.uk/skillswise/game/en01soun-game-syllables-factory>.

Both stress modules were at the top of the rankings for ease, comprehension, and desire to study more deeply, with Stress 2 also ranking highest in perceived meaningfulness. This was reflected in the comments received. The Stress 1 module received comments from 24 people while the Stress 2 module had comments from 15 people. Relevant comments are shown in Figure 8 (see below).

Comment	Respondents
I don't understand syllables yet.	4
I need to practice.	2
This is important in order to sound more native.	2
The audio was helpful.	1
I'm paying attention to vowels and consonants more.	1
Adding w/y makes it easier to say words.	1
The Japanese explanation was helpful.	1
Your Japanese was a little strange.	2
Learning pronunciation is fun, but I want to study in class.	1

Figure 7: Comments from the Ellipses and Elision module

Although the comments allude to why the modules were easy to understand through the use of multimedia resources, they also suggest that the high ratings received for meaningfulness are due to how comprehension can be affected by a lack of proficiency with stress (and syllables). The comments also point to a need for improved use of dictionary skills using IPA.

Comment	S1	S2
I think I need to understand syllables first.	1	
I think stress is important.	1	
If I pay attention to how my mouth opens, I can understand syllables.	1	
The syllable video was easy to understand.	3	
The syllable game helped me to understand better.	3	
The syllable game was fun.	3	
I have a deeper understanding thanks to looking things up on my own.	1	
I don't know how to note stress in my vocabulary journal.	1	
I can now notice that verb-noun homophones have different stress patterns.		5
I will use this new knowledge to monitor my speech and comprehension.		2
I don't know what to do when my dictionary gives me conflicting information about stress.		1

Figure 8: Comments from Stress 1 and 2 modules

On the final Moodle survey at the end of the semester, students were asked if the pronunciation course had been helpful and 81% responded that it had been very helpful with only 5% answering that it hadn't been helpful at all. When asked if their pronunciation had improved, 74% believed that it had improved a lot, while 13% reported that they had felt no change. Of the 55 participants that left comments, 12 specifically mentioned the pronunciation course. See Figure 9 below for their responses.

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As can be seen, the comments were both positive and negative, and the desire for in-class guidance continued to be a theme until the very end. In a class survey given by the university, another 54 open comments were collected, 15 of which focused on the pronunciation course. The comments are presented in Figure 10.

Although these final comments are positive, they should be interpreted holistically with all previous comments in order to serve as catalysts for further improvements to materials, approach, and delivery, as will be discussed in the next section.

Comment	Respondents
The materials were helpful.	3
The pronunciation course was too difficult.	3
I wanted more in-class help with pronunciation.	3
I want to continue working on my pronunciation.	3

Figure 9: Final Moodle questionnaire comments

Comment	Respondents
I can understand pronunciation better than before.	4
The materials were helpful.	4
The detailed explanations were helpful.	2
I liked studying at my own pace.	2
I like that this class focused on pronunciation.	2
I am more aware of my pronunciation now.	1
I liked using the internet to study pronunciation.	1

Figure 10: Comments from end-of-semester class survey

Discussion

This exploratory project was envisioned as a way for students to (a) develop their metalinguistic knowledge of English pronunciation, (b) gain familiarity with cognitive and metacognitive strategies for improving their pronunciation, (c) develop self-monitoring skills, (d) develop phonological competency, and (e) work on goals 1-4 individually and at their own pace. Whether the project has met any of these goals and in what ways is up for debate; however, I think there is a case to be made for this type of environment to support the independent learning of pronunciation.

First, metalinguistic knowledge of phonetics and phonology is gained by learning about the features of not only the target language but also one's mother tongue. Students were exposed to information, through a variety of media, explicitly drawing their attention to pronunciation features. I believe that comments in which students report understanding something better or now being able to understand a specific highlighted feature are evidence that these students are on their way to developing cognitive awareness of English pronunciation that can be put to use in their practice of English listening or speaking. Ideally I think it would be best if future participants in the course were also enrolled in a class that spent some classroom time on communicative activities to supply students with a natural environment for further pronunciation practice.

Cognitive and metacognitive strategies for pronunciation were introduced inductively throughout the modules. These included those cognitive PLS mentioned in Peterson (2000) such as listening to and imitating English speakers, practicing through repetition, talking aloud or silently to oneself, noticing the position of articulators, noticing contrasts between the target language and your mother tongue,

and metacognitive PLS such as learning about phonology and phonetics, focusing on particular sounds, or listening to one's own pronunciation (possible in EC). Although there is some evidence in the comments that students were beginning to use these strategies, I think more research is needed as it is unclear if students had just used the strategies within the limited confines of the online environment or if they had indeed acquired them and started applying them in other learning or communicative situations. Furthermore, since students were not given a PLS battery at the start of the semester, it remains unclear whether some students were already using these strategies especially as they are not often introduced in junior and senior high school.

Monitoring skills are theorized to rest upon phonetic and phonological awareness (Pawlak, 2010; Vitanova, 2002), so it is possible that those students whose metalinguistic awareness of English was strengthened by the pronunciation course could also have developed or strengthened their ability to self-monitor, and again there are a few comments from students who reported actively trying to pay attention to specific pronunciation features. However, more detailed and experimental classroom research is needed to discover if the course really realizes this goal as well as to measure the existence of this skill before the start of the course.

Phonological competency is a very large area and one that takes years to develop. Pennington's (1994) research asserts that "the typical case in L2 acquisition seems to be that learners approach new values for phonological features gradually and piecemeal, rather than as the outcome of a rapid shift" (p.95), meaning that a single lesson is not going to awaken some large and powerful shift in phonological competence. Although it would be difficult to provide evidence of gains in phonological competency as a result of this course; I believe the online course did lay the groundwork for improvement by providing students with an environment in which to develop their metalinguistic knowledge, use of PLS, and self-monitoring ability. With the additional out-of-class work as well as short communicative speaking opportunities in the listening classroom, I am not surprised that 87% of students reported that they felt their pronunciation had improved. Once again, controlled, longitudinal investigation is needed to measure change in both production and perhaps students' personal approaches to pronunciation learning to see how effective the course has been in achieving this goal.

Finally, was this environment conducive to independent learning? Looking at the number of students who completed all or a significant portion of the lessons, I believe it may not have been. My initial approach may have been a contributing factor in dissuading people from undertaking the pronunciation course because students at this level were overwhelmingly unprepared to study the topics in English. The addition of Japanese explanations improved student understanding, but perhaps it was too late. A second reason could be the lack of in-class guidance related to the pronunciation modules of which many students seemed eager for in their comments. Unfortunately, my classroom situation limited the amount of explicit, individualized pronunciation teaching that could be done because our limited class time was already committed to vocabulary and comprehension quizzes and listening and speaking activities. To remedy the lack of individualized feedback, I created a forum on Moodle and encouraged students to ask questions there or come to my office and talk with me, but none used either support line.

As a topic, suprasegmentals seemed to be easier to digest in an online environment, but one of the reasons could be that every week students had a lot of opportunities to hear comprehensible English in EC and VOA assignments and notice the features that were being introduced. Segmentals, especially vowels, proved to be harder, and I have since become aware of an online resource that I would like to introduce to students for improving the perception and production of vowel sounds (<http://www.englishaccentcoach.com/>).

One improvement that needs to be made relates to the degree of freedom students have within the pronunciation course. The modules in the course were required and linear, and a new module was introduced every week. This means students worked at my pace although I had hoped that they would work at their own. This could be alleviated by providing a can-do survey or test related to pronunciation features or to specific goals allowing access to a related module with explanations and activities. Modules also should include more activities, explanations, and materials. Although students did comment that diagrams and charts were helpful, audio recordings that provided students with an opportunity to hear a non-Japanese English speaker and video recordings of Japanese explanations seemed to have had a greater impact on students. However, the non-Japanese samples used in the Moodle course featured only my voice, which could mean that students had grown accustomed to my

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speech and generalized phonological competence could be limited. Therefore, future versions of the course need to provide exposure to a variety of male and female voices from various English backgrounds. Finally, a review module could be made freely accessible for students wanting more guidance and practice in a specific area at any given time.

The original intention for the data collected in this study was to feed back into future modules and incarnations of the pronunciation course, so there are obvious flaws in how the data was gathered and analyzed and a lot of opportunity for future research. Nevertheless, much time and effort went into designing and creating this environment and the research that was undertaken to write this paper has made me feel that the investment has been worthwhile and is worthy of further pursuit. In the future, I hope I can continue to develop the course and design empirical research studies specifically looking at the development of self-monitoring skills and the use of pronunciation learning strategies within this or a similar environment.

Mathew Porter has been working with English learners in the U.S. and Japan since 1999. He currently works at a self-access learning center and is making a transition from classroom teacher to learning advisor, which has been a great opportunity for reflection and growth.

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Appendix 1

I'd like to ask you about the online pronunciation course so that I can find ways to improve it. Please answer the questions below. There is no right answer and your responses are anonymous. Thank you very much for your help.

1. Did you complete the entire module?

2. In the next section, I'd like to ask you how much do you agree or disagree with the statements below. Click on a number from 1 to 5.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree
- 4 = Agree
- 5 = Strongly agree

This module was easy.
I think studying this is meaningful.
I was able to understand.
I want to study this more deeply.
I want it to be explained more.
I want you to use more Japanese (English*).

3. Please use the space below to write any comments or suggestions you have.

*From the fourth module.

Appendix 2

I'd like to ask about your beliefs and behavior in regard to this English 1 course. Please answer the questions below. There is no right answer and your responses are anonymous. Thank you very much for your help.

1. Read the statements below and answer (1) yes, (2) no, or (3) no change.

I think I did better on TOEIC this time.
I think my listening ability has improved.

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I think my vocabulary has increased.
I think I like English more.
I think I have gotten used to listening to English.
I think my pronunciation has improved.

2. Read the statements below and answer (1) always, (2) sometimes, or (3) never.

I did the vocabulary journal homework.
I did the self-study homework from the textbook.
I listened to and read the VOA short story.
I just listened to the VOA short story.
I just read the VOA short story.
I did English Central.
I did the pronunciation homework.

3. Read the statements below and answer (1) yes, (2) no, or (3) no change.

The vocabulary journal homework was helpful.
The self-study homework from the textbook was helpful.
The VOA short story was helpful.
English Central was helpful.
The pronunciation homework was helpful.

4. Complete the statements below with one of the following words: (1) easy, (2) hard, or (3) just right.

The vocabulary journal homework was
The self-study homework from the textbook was
The VOA short story was English Central was
The pronunciation homework was

5. Please use the space below to write any comments or suggestions you have for next semester.