Ultrasound-integrated Pronunciation Tutorials

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June 18, Thursday
at the 35th Annual Society for Teaching and Learning in Higher Education.
Achieving Harmony: Tuning into Practice
Westin Bayshore hotel, Vancouver

Round Table Discussion 32.
1:45 pm–2:05 pm Roundtable Discussions – Round 1 (20 mins.)
2:25 pm–2:45 pm Roundtable Discussions – Round 2 (20 mins.)
Collaboration of Linguistics and Japanese program

“Multimodal approaches to the empowerment of pronunciation teaching and learning: Creating online interactive tutorial videos” (PI: Bryan Gick)

ARTICULATORY PHONETICS [Linguistics]

eNunciate (Visible Speech Project)

TEACHING LANGUAGE [Japanese program]

Teaching pronunciation is difficult, due to lack of time, method, materials

Speech Ultrasound to visualize speech
Goals of the presentation:

- To show how phonetics/phonology (how science of linguistic sounds) is tuned into practice in our project.
- To inspire the educational development of pronunciation teaching

You will

- get the experience that students had in Japanese class
- discuss the value of the pronunciation education for the further direction
1 eNunci ate (website, open to public)

Go to http://enunci ate.arts.ubc.ca/
eNunciate (open to public)

- Home
- About
- Japanese
- Linguistics
eNunciate (site, open to public)

- Japanese site
  - Introduction
  - Challenging Sounds (production lessons)
  - Let’s Test Yourself (perception test)
eNunciate (site, open to public)

**Challenging Sounds**

- Voiced vs. voiceless
- ra, ri, ru
- tsu vs. su
- rya, ryu, ryo
- shi vs. si
- za vs. zya
- tsu vs. chu
eNunciate (site, open to public)

- Instructional video
- Exercise videos
- Perception test
Use of ultrasound in linguistics

L2 pronunciation (applied linguistics)
- English [r][l] for Japanese speakers (Gick et al., 2008)
- French [y][u] for Japanese speakers (Pillot-Loiseau et al., 2013)

Speech therapy (clinical linguistics)
- Adults with hearing impairment (Bernhardt et al., 2003)

Documentation of endangered/understudied languages (field/anthropological linguistics)
(Gick 2002)
35.3% of Japanese program in UBC are international students. Bilinguals are 47%, and multilinguals are 40.1%. The top three native tongues are: 1 Chinese, 2 English, 3 Korean. The interference of students’ L1 was considered for the instructional videos.
Technology
Animation and Ultrasound Overlay

The hand drawn animation was made in Flash. It took several hours for each animation.

Bubble shows the stream of air flow.
2. Ultrasound Overlay

Double-simultaneous recording

Advanced editing in Adobe After Effects

Overlay

Each finished video was posted on eNunciate site, together with a compendium of links to related content.
3 Pilot Implementation
RARIRU
Activity 1 based on the contents of videos

1. Video watching (assignment)
   - "Introduction to Phonetics 1, 2"
   - "RARIRU for English speakers"

2. Grouping
   Form a group of 3-4. Try to find someone whose first language is different from yours.

3. Pronunciation check
   Instructor gives them a list of words and sentences. Students read it aloud.

4. Feedback
   If you find a group mate’s "RARIRU" is not correct, give advice from what you learned from the video.

5. Discussion
   If nobody in your group is incorrect, then discuss how you could teach RARIRU to someone who cannot articulate RARIRU correctly.
Watch RARIRU video

http://enunciate.arts.ubc.ca/japanese/lets-practice/rariru/

Watch RaRiRu video
Video: 3:18min
Read them aloud. Check your pronunciation with your neighbor

ramen ‘ramen noodle’

arigatoo ‘Thank you’
Explain the difference between English R and Japanese R. (3 min)

The answers we want to hear here is:

For Japanese Ra, the tip of the tongue is [...]. It touches [...].
Activity 2 based on the contents of videos

1. Video watching (assignment)
   - “Introduction to Phonetics 1, 2”
   - “RARIRU for English speakers”

2. Perception Quizzes
   Students hear correct and wrong pronunciation and answer which one is correct.

3. L1 interference
   Instructor talks about typical L1 bias according to L1.

4. Understanding check
   An instructor gives them a list of graphics of several tongue shapes, and asks them which shape represents Japanese /r/.

5. Ultrasound demo
   A student volunteer comes to the front, records the pronunciation of /r/ sound with ultrasound imagings. The instructor compares ultrasound imagings of Japanese /r/ and English /r/ and discusses the difference.
Comments about autonomous learning outside class

- We only have 4 hours of class each week, and I don’t think that is enough time to learn a new language.
- It’s hard to practice Japanese speaking in class because we have limited time.
- By providing resources for learning pronunciation outside of the classroom, it really helps the students to learn Japanese and work towards fluency.
- Having a reference… was very nice.
- Can always go back to it whereas in class, we would only be able to see it once.
Student Survey

Q. The instructional video “Japanese RARIRU for English speakers” helped you identify problems in your pronunciation. (n=57)
Q. **Ultrasound overlay** of the side face of a person in the instructional video “Japanese RARIRU for English speakers” helped you understand how to pronounce challenging Japanese sounds and words. (n=57)
Q. The instructional video “Japanese RARIRU for English speakers” helped you achieve the correct Japanese pronunciation. (n=57)
Q. After watching the videos on the eNunciate! website, how much do you think your pronunciation has improved?  \((n=57)\)
Comments about in-class activity

- Pronunciation needs lots of independent practice and it’s easy to think your pronunciation is good when everyone is talking/pronouncing at the same time.

- We are able to get instant feedback from other classmates and ensure that our pronunciation is correct.

- It was good to receive pronunciation feedback from the instructor during in-class activities.

- It was fun working in a group trying to figure out how to teach somebody Japanese pronunciation because I was able to get feedback on my ideas and gather other ideas.
Comments about the connection between autonomous learning and in-class activity

- It was good way to review what we did at home together.
- It was good reinforcement and allowed processing of the materials learned outside of class so that there was no feeling of having learned in isolation of the rest of the course.
- It reiterates material, which helps with clarification.
What did you think about our videos?  
Any suggestions?
Thanks!

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If you have further questions, please contact Noriko Yamane
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References