Empowering Pronunciation Teaching and Learning

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The speech visualization software tools were developed by the project team for the TLEF project “Multimodal approaches to the empowerment of pronunciation teaching and learning: Creating online interactive tutorial videos” (2014, PI: Dr. Bryan Gick)

The precursor to this project is “Visible Speech Project” (2013, PI: Kathleen Hall)
Objectives

Pronunciation is an integral part of communication, but it has proven to be one of the most challenging aspects to incorporate into language pedagogy and to implement in the classroom.

Our project addresses these problems, and gives learners control and autonomy over their own learning.

Our tools and resources draw on ultrasound and other speech visualization technology and its application in articulatory phonetics.

Evidence-based approach:
We evaluate and report on the impact of our resources on teaching and learning; 9 presentations and publications to date, others forthcoming.
Have you ever struggled while *learning* or *teaching* how to pronounce sounds in a foreign language?
Uses various tools and resources to aid in the learning and teaching of pronunciation such as:

- Multimodal tool to visualize speech
- Interactive and autonomous training
- Biovisual feedback for pronunciation training
- Ultrasound kit for customized resources
Do you think that allowing students to see the articulatory mechanisms underlying different speech sounds can help with learning pronunciation?
# Interactive International Phonetic Alphabet Chart

## Sounds of the World’s Languages

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<th>Bilabial</th>
<th>Labiodental</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Postalveolar</th>
<th>Retroflex</th>
<th>Palatal</th>
<th>Velar</th>
<th>Uvular</th>
<th>Pharyngeal</th>
<th>Glottal</th>
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Consonants

Alternative Airflow Consonants

Vowels
Educational resources enable students to visualize speech sounds of the world’s languages.

High-quality animations present stylized representations of speech mechanisms.

Ultrasounds overlay videos combine mid-sagittal images of tongue movements with external profile views of a speaker’s head.
How do you think interactive and autonomous training will benefit students learning a new language?
Japanese Pronunciation Tutorial website offers learners opportunities for self-directed, interactive pronunciation training.

Learners have control and autonomy over their learning, engaging with site in a way that mimics one-on-one interactions with speakers. Tutorial consists of instructional videos, practice exercises, and quizzes. Content developed based on Japanese instructors’ knowledge of pronunciation challenges and linguists’ understanding of speech production.
Student surveys reported that learners’ understanding and pronunciation of Japanese sounds improved. Future developments include websites for other languages including French, Spanish, German, and Chinese.
Do you find it difficult to implement the essential repetition and feedback for pronunciation training in a classroom setting?
The use of **biovisual feedback** using visualization technology can improve pronunciation for language learners and other populations.

Ultrasound-based tutorials allow learners to get feedback on their pronunciation of challenging sounds.

Online prosody visualizer allows students to record utterances and compare with model speaker.
Are you interested in customizing these resources for the languages you are teaching or learning?
“Tongue visualizer” software enables language instructors and other users to develop customized ultrasound overlay videos

Language teachers will be able to produce custom resources focusing on specific pronunciation challenges in their own languages. Particularly useful for the sounds of BC’s First Nations languages.

Custom videos in development for:
- Cantonese (final obstruents, vowels)
- Upriver Halq’emeylem (dorsal sounds)
- SENĆOŦEN (full alphabet; created by community language apprentices)
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REFERENCES


