Developing Ultrasound Overlay Videos for SENĆOTEN Learners

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Ultrasound in Pronunciation Instruction

- L2 learners rely on acoustic and articulatory information to acquire new sounds
- Ultrasound has been demonstrated to be an effective biovisual feedback tool
  - Learners are able to directly observe their own articulator movements and compare them with those of a native speaker

Ultrasound Overlay Videos

- Challenges
  - Ultrasound-based pronunciation instruction ...
    - ... is best with single learners or small groups
    - ... requires specialized equipment and
    - ... expertise to interpret ultrasound imagery
- Project aims:
  - Combine ultrasound images of tongue movements with external profile views of a speaker’s face
  - Implemented in online or blended learning paradigms
  - Positive impact on L2 learners’ production and perception of novel contrasts

Ultrasound Overlay Videos: \( \text{Freeze Frame} \)

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References


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Pronunciation in Indigenous Language Revitalization

- Particular hurdles with pronunciation learning in an endangered language
  - Small numbers of L1 speakers
  - Paucity of pedagogical resources
  - Latent speaker inhibitions, particularly in the presence of elders
  - Learners may feel compelled to master pronunciation in order to authentically preserve their ancestral language to pass it on to future generations
  - WSANEC community members discuss the need for developing “SENĆOTEN muscles”

SENĆOTEN

- Northern Straits Salish
- Spoken on Vancouver Island, British Columbia
- Few L1 speakers
- Vibrant language revitalization program

Community Collaboration for Resource Development

- Community-initiated partnership with Language Apprentices in the WSANEC SENĆOTEN IST / University of Victoria Diploma in Language Revitalization Program
- Project aims:
  - Create digital resources for teaching and learning SENĆOTEN pronunciation
  - Build capacity and expertise for language resource development in the community
- Participants: one L1 speaker, four L2 learners (the Apprentices) & two children in immersion
- Recordings: words (selected by the Apprentices) illustrating the challenging sounds and sound sequences (e.g., clusters), as well as early vocabulary (e.g., numerals)
  - e.g. 1, 2, 3, 4, 5: NE-T[E] [nətə], ČEŞE [česə], LIW [lwəm], NOS [nəs], LIḴČES [ləkčəs]

Future Directions

- Continue collaboration with apprentices to produce ultrasound overlay videos
- Build a digital educational resource for use by language learners in the community, and in particular parents whose children are in the immersion program
- Design and implement evaluation measures to assess impact of videos on learners’ pronunciation
- Design and conduct a qualitative / quantitative single participant study that combines real-time ultrasound biofeedback with an L1 speaker along with ultrasound overlay videos

Table 1: Parlour.

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- [Photo credit: UBC Communications]