Towards protocols for L2 pronunciation training using ultrasound imaging

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Background

- **Second language (L2) pronunciation:**
  - A key element of L2 learning
  - Hard to teach [1]
  - Hard to extrapolate articulation from acoustic input only
  - Not enough time in classroom

- **The eNunciate Project** [2]
  - A collaboration between the Linguistics department and the Japanese language program (Asian Studies department) at University of British Columbia
  - Developing multimodal pronunciation teaching/learning resources

- **Visual feedback using ultrasound imaging** [3, 4]
  - Safe, non-invasive, increasingly affordable
  - Effective in laboratory training

- **Gap between laboratory and classroom**
  - Teachers and students are not necessarily familiar with:
    - Basic articulatory phonetics
    - Ultrasound imaging devices
  - Lack of standardized instructional procedures

- **Proposal: Pronunciation station**
  1. Ultrasound training session for language teachers
  2. Use of online video tutorials on ultrasound imaging and articulatory phonetics (available at the eNunciate website)
  3. A standardized instructional procedure with ultrasound based on previous studies on the use of ultrasound imaging in L2 pronunciation training and in speech language pathology [3, 4, 5]

- **Pilot implementation**
  - **Teaching the contrast between alveolar ([d]za) and alveolopalatal ([d]za) in Japanese**
    - 4 students of Japanese (native Korean speakers)
    - 1 Japanese teacher
    - Items:
    - Design:
      - Day 1: Pre-training recording (5 repetitions of each item)
      - Day 2: 1 (45-60 mins) session at Pronunciation Station
        - Tutorial videos and training
      - Day 3: Post-training recording (5 repetitions of each item)
    - Results:
      - Significant improvement!

References