Selective teaching of L2 pronunciation

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The pronunciation of a second or foreign language is often very challenging for L2 learners. It is difficult to address this topic in the classroom, because learners with different native languages (L1) can have very different challenges. We have therefore developed a Computer-Assisted Listening and Speaking Tutor (CALST) which selectively offers exercises for listening and pronunciation training depending on the learner's native language (L1). At present, CALST can be used to learn Norwegian pronunciation (www.calst.no), but it can easily be extended to other languages by making language content available.

Exercises are selected on the basis of a contrastive analysis of the target (L2) and native language (L1) of the learner. The contrastive analysis can be carried out for many L1s (and any L2, to support other target languages), since it is based on open-source databases which contain phonological information, e.g. on sound inventories (UPSID), syllable phonotactics (LAPSyD) or word stress (StressTyp2).

Exercises for single sounds and for consonant clusters are currently available. An example of an exercise for single sounds is that for the vowel /ʏ:/. Learners unfamiliar with this (front, high, rounded) vowel are given exercises to discriminate the Norwegian word <sky> from a similar word <ski>, with a front, high, *un*rounded vowel. By practising several words demonstrating this vowel opposition, learners can familiarize themselves with the new Norwegian sound. Both listening, pronunciation and spelling exercises are available in CALST. Learners who already have the vowel /ʏ:/ in their L1 automatically skip this exercise.

Exercises for syllable phonotactics focus on consonant clusters. Some languages have consonant+vowel as their maximum syllable (e.g. Tukang Besi) and thus do not allow consonant clusters. Others may only allow a single consonant at the end of a syllable, e.g. Mandarin Chinese allows only /n/ or /ŋ/ in this position (cf. English <kin> and <king>). Learners of these languages have to learn to pronounce sounds in unfamiliar positions, and they have to learn to pronounce consonant clusters within a syllable. As for single sounds, unfamiliar phonotactic restrictions are detected by a contrastive analysis of the L1-L2 pair. Since it is impossible to predict the repair strategy/ies which L2-learners use to adapt L2 structures to the restrictions which apply in their L1, CALST offers exercises to learn to overcome strategies like simplification of clusters (e.g. <bunt → bunn>), replacement of sounds in clusters e.g. <flott → plott> and metathesis within clusters (e.g. <hets → hest>. In the future, we hope to use automatic speech recognition to also detect prosthesis (insertion of a vowel before a consonant cluster, e.g. the addition of /ɛ/ before a word like <stol> by Spanish learners) and epenthesis (insertion of a vowel between consonants in languages which do not allow consonant clusters in a syllable).

We shall also develop exercises for words stress and will soon add lexical tone and intonation exercises, so that CALST covers all the main areas of pronunciation training. CALST is also a research tool, since logged exercise results can be used for linguistic analysis.