L1 variation in foreign language teaching: challenges and solutions

To become an active user of a foreign language, pronunciation is a key skill which lays the foundation for effective communication. Pronunciation problems typically vary depending on the native language of the learner. This requires an individualized approach, which often is not feasible in typical classroom situations.

Language labs do offer the possibility of individual instruction. At NTNU, we have developed a Computer-Assisted Listening and Speaking Tutor (CALST) based on a contrastive analysis of segment inventories. The segment inventories are stored in a database which is based on UPSID and implemented as a wiki. It presently contains over 500 languages and can easily be extended with new languages. Contrastive analysis results are visualized as IPA charts in our L1-L2*map* tool for comparing languages. Segments are color-coded, with red sound symbols indicating L2 segments which do not occur in the learner's L1 and may therefore be challenging. L1-L2*map* can be used interactively or as a server-client system which returns information to a computer-assisted pronunciation training (CAPT) system.

Unfamiliar L2 segments are linked to sound contrast exercises in CALST. We shall discuss the selection of exercises from a large set of relevant contrasts for a given unfamiliar sound, and present a pragmatic approach to differential substitutions.

CALST has been developed for Norwegian. Because Norwegian does not have an accepted pronunciation standard, learners must select one dialect as their pronunciation target, while becoming perceptually familiar with all other dialects. We shall demonstrate how this is solved in different types of vocabulary training exercises (Listen&Click, Listen&Speak, Listen&Write) as well as two different types of exercise to train sound contrasts which are not familiar from the user's native language (ABX, Minimal pairs/sets).

We shall also explain how the system can be integrated into CAPT systems for other languages.