

Training Spanish vowels

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TEST
FRIDAY!

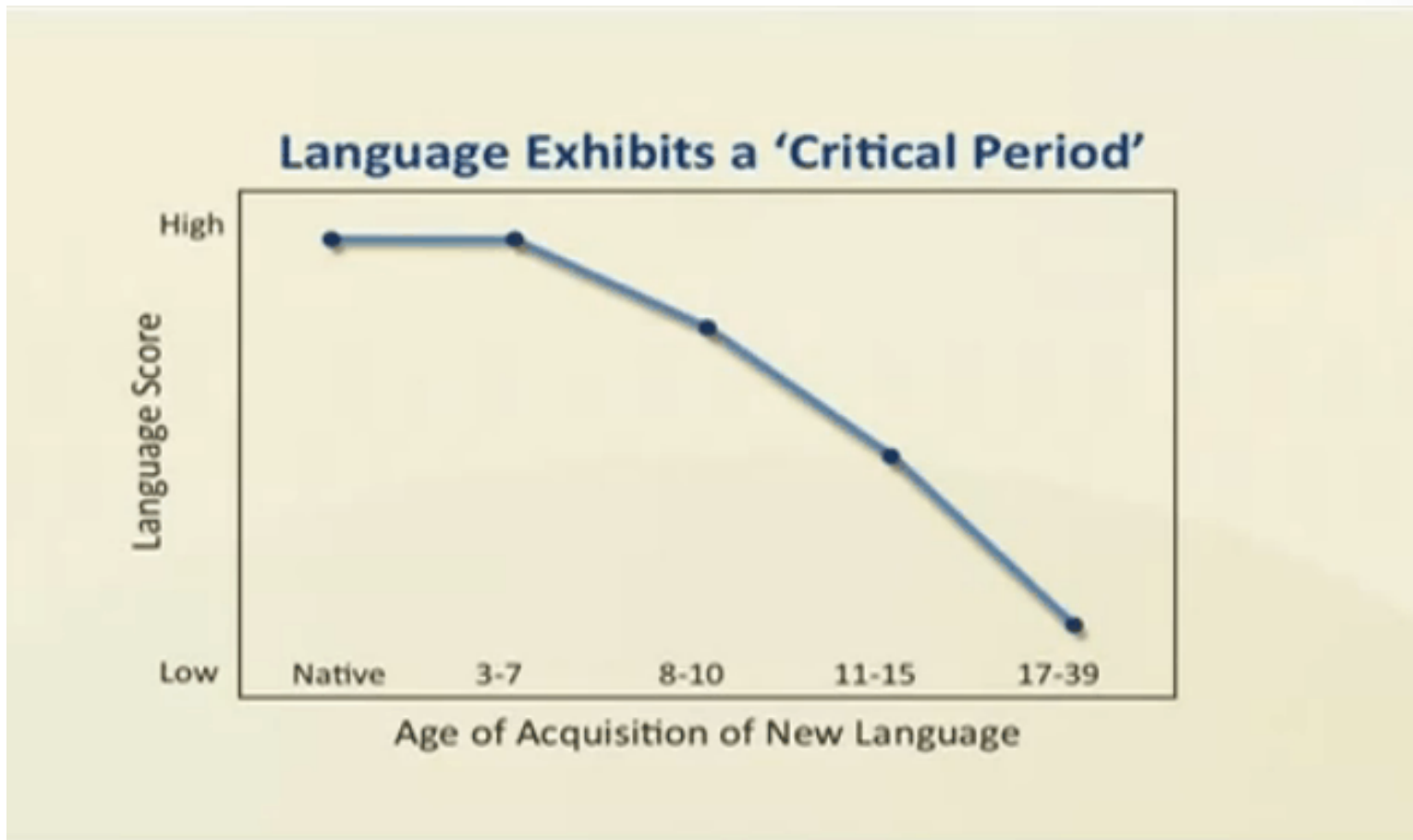


**“Class, I’ve got a lot of material to cover,
so to save time I won’t be using vowels today.
Nw lts bgn, pls trn t pg 122.”**

Problem

- Challenging task for L2 learner acquiring new vowel sounds: requires time and individual attention from teacher.
- Native like production of L2 sounds only when learner becomes proficient in perceiving the target sounds → L1 vowel system is persistent.
- Articulatory properties difficult to describe and
- Vowel articulation is difficult to observe without special instrumentation.
- Critical period.

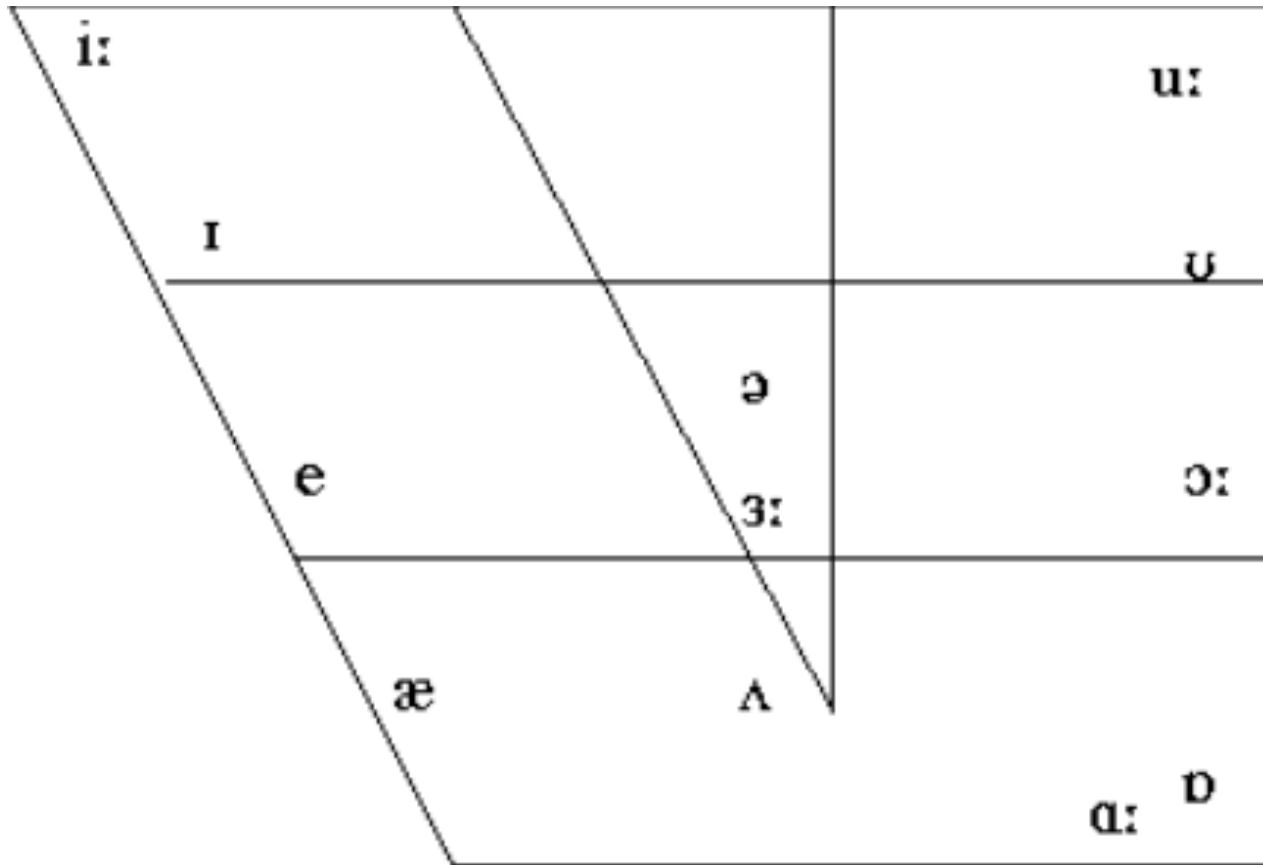
Infants lose the ability to discriminate nonnative contrasts



(Kuhl, 1991)

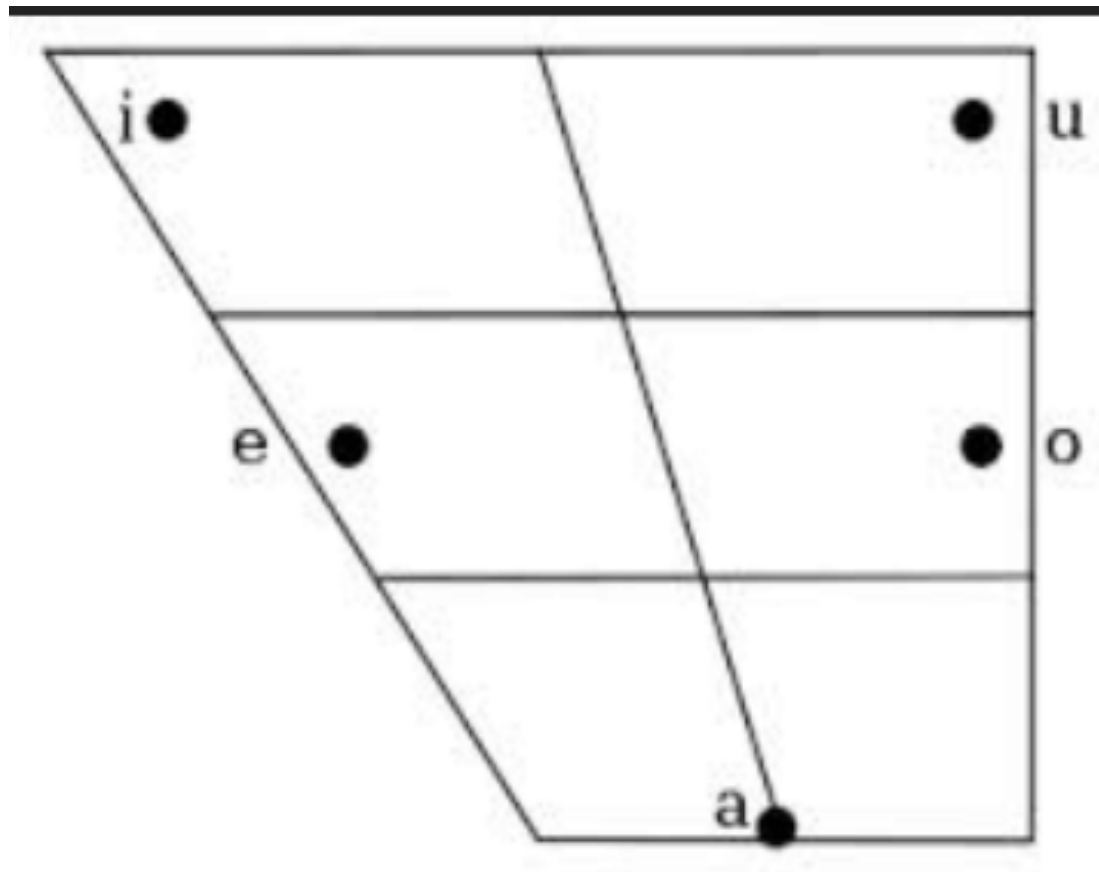
English vowel system

12 monophthongs



Spanish vowel system

5 monophthongs



Predictions:

Multiple Category Assimilation (Morrison 2006)

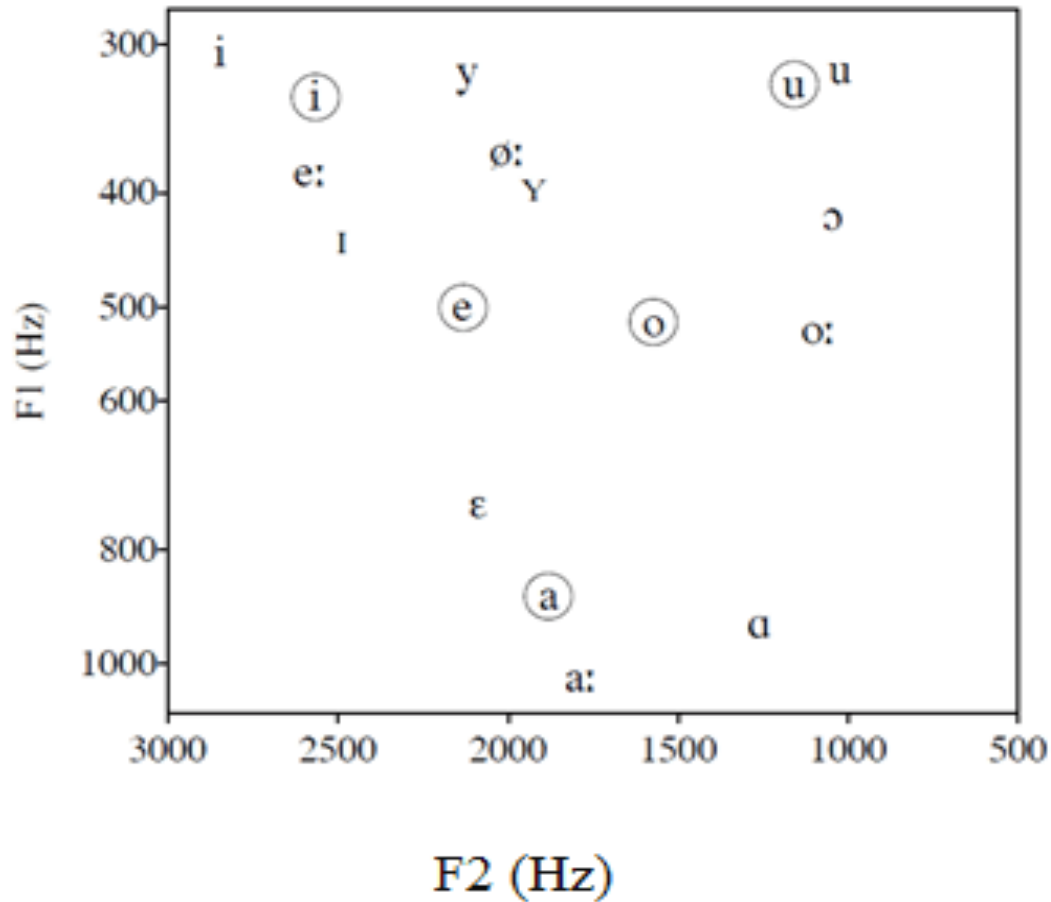
| L2 | L1 |
|---------|---------|
| Spanish | English |

| | |
|-----|-------|
| /i/ | → /i/ |
| | → /ɪ/ |
| /e/ | → /ɛ/ |

| | |
|-----|--------|
| /a/ | → /a:/ |
| | → /ɑ/ |
| | → /æ/ |

| | |
|-----|-------|
| /o/ | → /ɔ/ |
| /u/ | → /u/ |

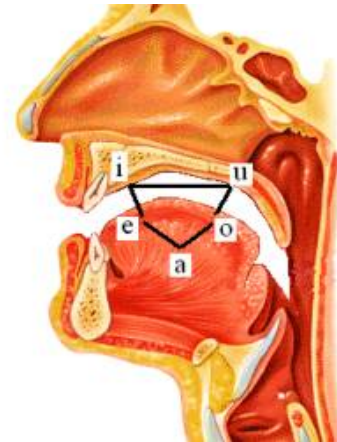
Production



Solution

- The *Fix Your Vowels* program: hear and see the vowels.

- Shows how and where vowels are formed in the mouth.



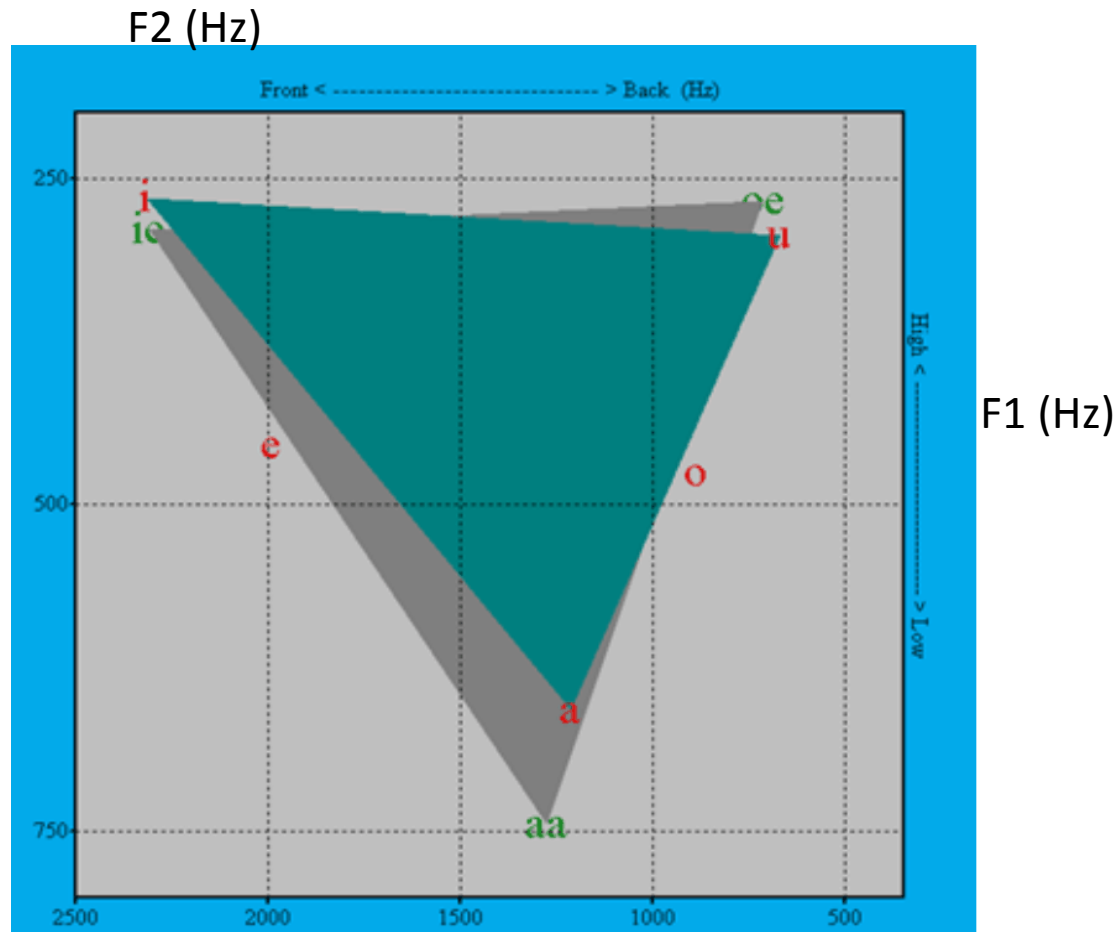
- Like playing darts with your voice.



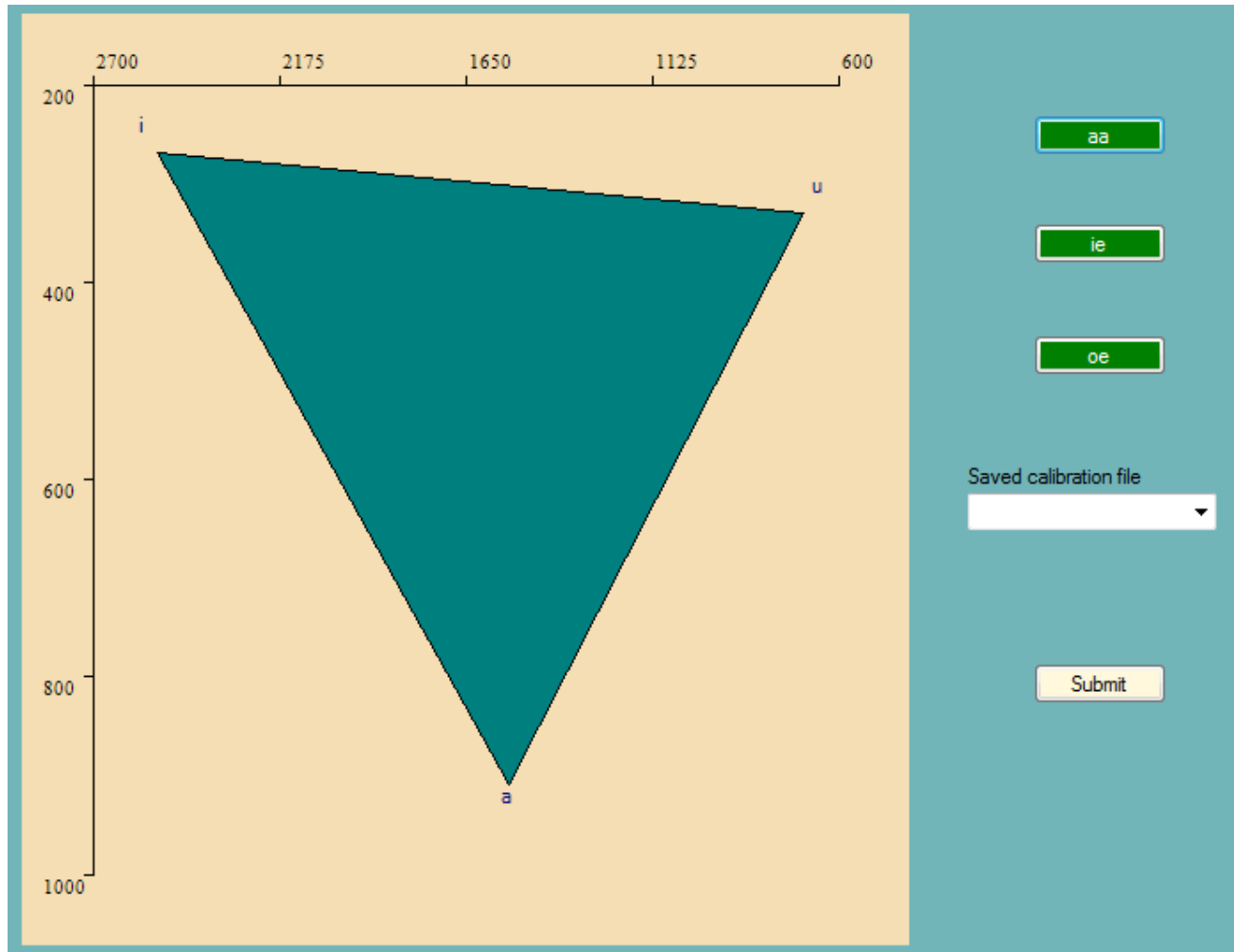
The architecture of *Fix your vowels*

- Map of F1 en F2 frecuencies (F1 - F2) → pinpoints your vowel on the triangle.
- Formant values differ per individual → calibration procedure = vowel normalisation (Lobanov 1971)
- Feedback: higher/lower (**F1**) and forward/backness (**F2**)
- 200 Spanish words: different male and female speakers
- Student's voice is recorded as wav files.

Program *Fix your vowels*

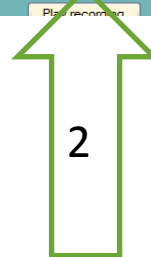
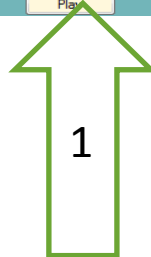


Calibration



Pronouncing *Dónde*

The screenshot displays the 'dónde' software interface. On the left is a vowel chart with a horizontal axis for frequency (2700, 2175, 1650, 1125, 600 Hz) and a vertical axis for pitch (200, 400, 600, 800, 1000 Hz). A teal triangle represents the vowel space, with a darker brown triangle inside. Vowels are marked with 'i', 'e', 'a', 'o', 'u'. Red circles with numbers 1 and 2 are placed on the chart. To the right are two audio waveform windows: 'Native' (red) and 'User' (black). Below the waveforms are playback controls: 'Navigation' (with a search box containing '15'), 'Playing' (with 'Previous', 'Next', 'Play', and 'Play all' buttons), and 'Recording' (with 'Record play', 'Record', and 'Mic open (no recording)' buttons, plus a volume slider). A 'Remove blanks' checkbox is also present.



**[http://uvafon.hum.uva.nl/
dirk/ed/](http://uvafon.hum.uva.nl/dirk/ed/)**

FIX YOUR VOWELS 1.7 . RAR FILE

Steps to start the program:

1. Click on the directory *Fix Your Vowels 1.7 dec. 2013*.
2. Open *Fix Your Vowels.exe*
3. Insert surname, initials, student number (8 digits) and gender.
4. Start **calibration** for your personal vowel triangle: click on the buttons and pronounce an /a:/, /i:/ and /u:/.
5. First practice with the CVC and CVCV nonsense words, after this you can try the real words. You will find the exercises under the button EXPERIMENTS (left at the top of the page)

Thank you.

