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Awareness is the key? Perspectives on the role of phonetic awareness in L2 pronunciation learning

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Early interest

- PhD on L2 pronunciation and phonemic transcription in 2004
  - → those participants who were good at transcribing were able to improve their English pronunciation skills the most during a university-level pronunciation course
  - The deep orthography of English creates challenges for Finnish EFL learners, whose native language has shallow orthography where graphemes and phonemes have a more straightforward relationship.
- Today: discussing one older related study and a series of recent experiments, mostly unpublished

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Background 1/3

- Phonetics and pronunciation teaching is an essential part of EFL teaching as it raises the learners' awareness of the target language sound system and the phonological forms of words
- The role of consciousness, becoming aware or noticing certain features of the target language, is important in language learning
  - Schmidt's (1990) noticing hypothesis
- Teaching phonetics has been discovered to facilitate pronunciation learning in a foreign language (e.g., Lord 2005; Pourhosein Gilakjani 2012)

Background 2/3

- Accurate perception of L2 phonetic forms, as well as the ability to notice the mismatch between one's own pronunciation and the target form (***noticing the gap***) are expected to be beneficial for L2 speech development (e.g. Flege & Bohn, 2021; Schmidt, 1990)
- More explicit learning conditions (e.g. **consciousness-raising**) facilitate noticing (e.g. White & Ranta, 2002)
- Little is known about which **learner characteristics** contribute to the noticing of the gap.
- Conscious **attention** to the linguistic form is required for their acquisition (e.g., Ellis, 2005, Robinson, 2003, VanPatten, 1996)
- Learners can be induced to either notice the target forms (*noticing the form*, Schmidt, 1990) or to notice deviations in their own output (*noticing the gap*, Schmidt & Frota, 1986)

Background 3/3

- Language users possess **knowledge** about the phonological system of the language: “knowledge about the segmental and suprasegmental features of the language that have been stored as declarative or proceduralized knowledge” (Kivistö de Souza, 2021). Phonological self-awareness is the ability to notice and reflect upon one’s phonological abilities (Kivistö de Souza, 2021)
- → To acquire L2 pronunciation efficiently, the learner should ***notice*** the target phonological forms and the deviations in their own L2 pronunciation.

Study from 2013

Lintunen, Pekka. 2013. The effect of phonetic knowledge on evaluated pronunciation problems. In J. Przedlacka, J. Maidment & M. Ashby (eds). *Proceedings of the Phonetics Teaching and Learning Conference.* London: Phonetics Teaching and Learning Conference London: University College London, 55–58.

Inspired by:

Szpyra-Kozłowska, J. 2010. Phonetically difficult words in intermediate learners' English. *Proc. 6th New Sounds Poznań*, 481-486.

Szpyra-Kozłowska, J. 2012. Mispronounced lexical items in Polish English of advanced learners. *Research in Language* 10, 243-256.

The study

- Finnish university students of English were asked to identify problem areas in their pronunciation of English before and after a course in phonetics and pronunciation training sessions
- Answers analyzed with reference to a separate pronunciation test
- Inspired by Szpyra-Kozłowska's (2010) findings on words that were stored in incorrect phonemic forms in the Polish learners' of English memory
- This study followed the same methodology with the exception of an additional pronunciation test to allows comparisons between real and assumed difficulties.
- In Szpyra-Kozłowska's (2012) related study, learners were shown to have a limited awareness of their pronunciation problems.

Methodology

- A pronunciation test and two questionnaires (a pretest and a posttest on phonetically difficult words)
  - Pretest: first teaching week; posttest: beginning of the Spring term
- Subjective evaluations of phonetically difficult words following Szpyra-Kozłowska
  - "*Write down English words whose pronunciation you think is particularly difficult*". They (N=156 pretest, N=78 posttest) were also asked to underline the difficult part of the word
- In the pronunciation test, the subjects (N=69) were given a short text and a word list to read
  - The word list included all phonemes of English with a special emphasis on phonemes that Finnish learners of English typically find problematic

Example words

- **In the pretest, a total 423 words mentioned** (1-10 per subject).
  - The most common words were *particular(ly)* (19), which was also mentioned in the instructions, *acquisition* (11), *intelligible/-bility* (11), *squirrel* (9) and *suggest(ion)* (7).
  - Patterns included words with many syllables (e.g. *determiner*, *communicative*), various consonant clusters (e.g. *three*, *structure*), silent letters (e.g. *debt*, *listen*) and with the spelling and pronunciation less transparent (e.g. *Derby*, *lawyer*).
- **In the posttest, a total of 229 mentioned** (1-10 words per subject).
  - The most commonly mentioned words were *particular(ly)* (11), *decision(s)* (10), *suggest(ion)* (9), *squirrel* (7) and *English* (6)

	Pronunciation erros	% of subjects (n=69)
1	v/w	69.6%
2	ʒ	63.8%
3	ŋg	58.0%
4	dʒ	52.2%
5	z	39.1%
6	θ, ð	34.8%
7	ʃ	24.6%
8	tʃ	23.2%
9	ɪ	14.5%
10	aspiration	13.0%

	Difficult sounds	% of subjects (n=156)
1	l/r	28.2%
2	ʃ	24.4%
3	dʒ	19.9%
4	word stress	18.6%
5 ↑	θ, ð	16.0%
6	z	12.2%
7	tʃ	11.5%
8 ↑	v/w	7.7%
9	aspiration	2.6%
10 ↑	ʒ	1,9%

Comparison of pronunciation difficulties and self-evaluated problems

- The subjects evaluated words containing liquids very problematic, but this was not revealed by the pronunciation test (confirming Szpyra-Kozłowska's (2012) observation)
- In the pronunciation test the words were very short, whereas the subjects often evaluated long words difficult.
- The higher ranking of /v, w/ and marginally of /ʒ, ŋg/ in the posttest can be explained by more thorough awareness of phonetics and pronunciation through teaching
- Teaching also affected the subjects' ability to list words that they evaluated difficult and partly changed their answers from the word to the phonemic level.
- The subjects were partly aware of their problems and their awareness increased a bit through teaching

More recently…

Kivistö de Souza, Hanna & Pekka Lintunen. 2023a. Did I Say 'Pup' or 'pub'? An analysis of foreign language learners' phonological self-awareness. *Journal of Speech Sciences 12*, 1–16. Available: https://econtents.bc.unicamp.br/inpec/index.php/joss/article/view/18276/12981

Kivistö de Souza, Hanna & Pekka Lintunen. 2023b. "Thinking about your pronunciation": Examining phonological self-awareness with a novel task. In A. Henderson & A. Kirkova-Naskova (eds), *Proceedings of the 7th international conference on English Pronunciation: Issues and Practices*. Grenoble: Université Grenoble-Alpes, 138–148. Available: https://doi.org/10.5281/zenodo.8225603

- And some works in progress…

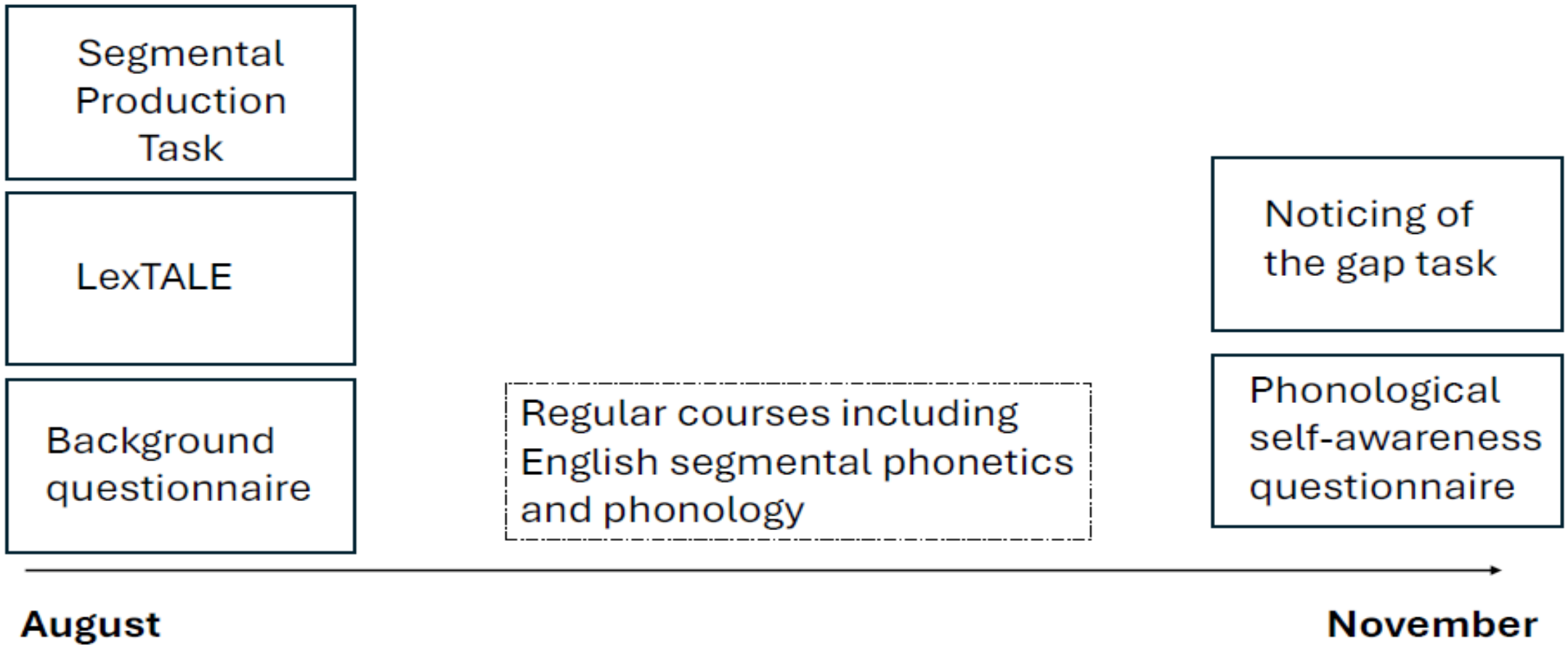
Current explorations

- To examine whether segmental production accuracy, language proficiency and phonological self-awareness are related to the noticing of the gap in advanced language learners

- →Is there a relation between noticing the gap and segmental production accuracy, L2 proficiency and phonological self-awareness?

- L1 Finnish participants taking a compulsory first-year university course on English phonetics and phonology
- *N* = 28 (L1 Finnish, at least one pronunciation deviation, participated in both data collection sessions - *N*=38)
- 16f, 10m, 2N/A;
- 75% reported L3: Spanish, German and Swedish
- CEFR C1 English on average (measured with LexTALE; Lemhöfer & Broersma, 2012)

Instruments



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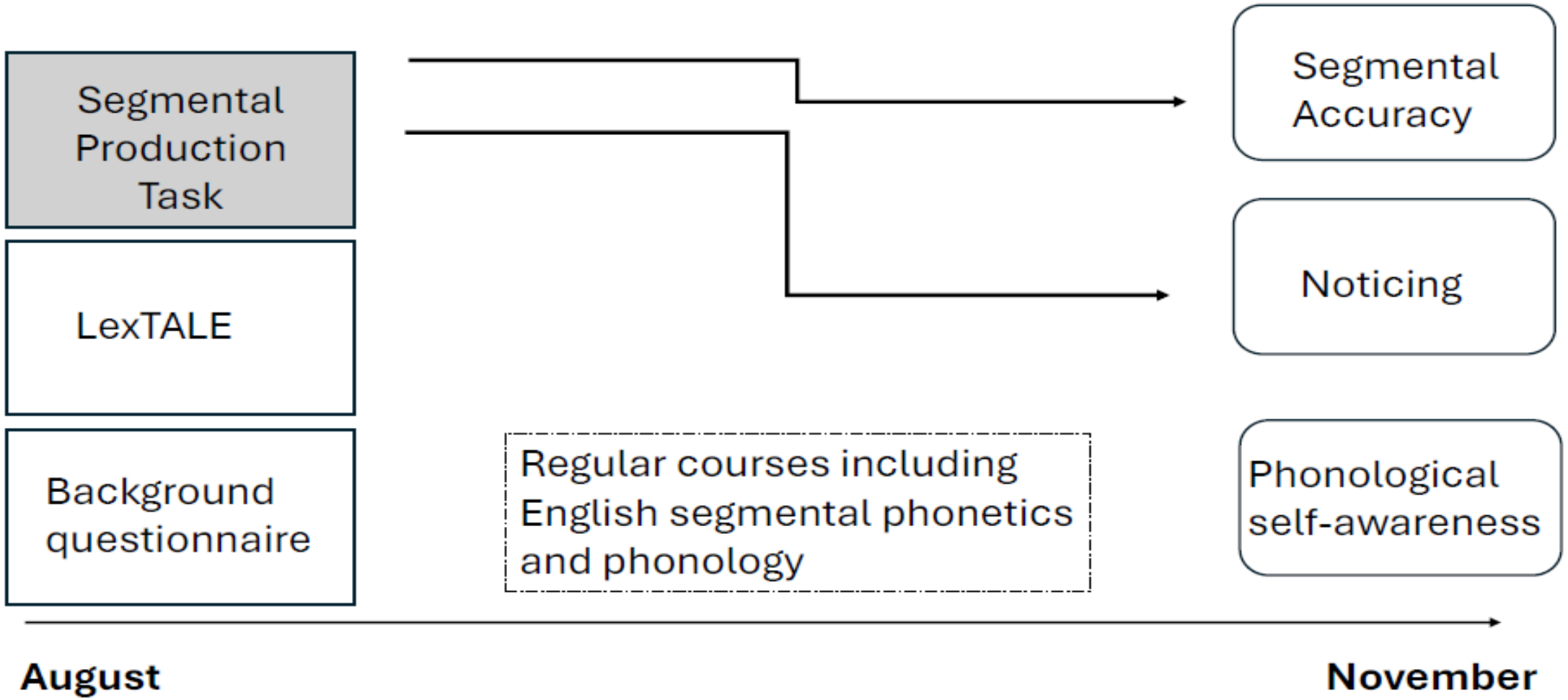

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Segmental production accuracy

- Target structures: Initial [pʰ tʰ kʰ]), initial and final /b d g/ and /i-ɪ, ʌ, ɛ/. (Lintunen, 2004, Paananen, 1999, Tergujeff, 2022) (SLM-r, Flege & Bohn, 2021)
  - Finnish: no voicing opposition, no aspiration, contrastive vowel length
- 12 High frequency monosyllabic CVC words + 5 distractors
- *I say [...] again*
- Self-paced in the university language lab

pup	pub
bet	bed
buck	bug
deed	did
beat	bit
peak	pick

- 2 L1 Finnish expert raters judged the accuracy of each target sound (28 participants x 12 words x 3 targets = 1008 trials), agreement on 84% (κ=0.25)
- Trials where no agreement was reached (n=163) were submitted to a third rater (L1 BP)

→Segmental Accuracy Score (% of accurately pronounced target sounds)

Phonological self-awareness questionnaire

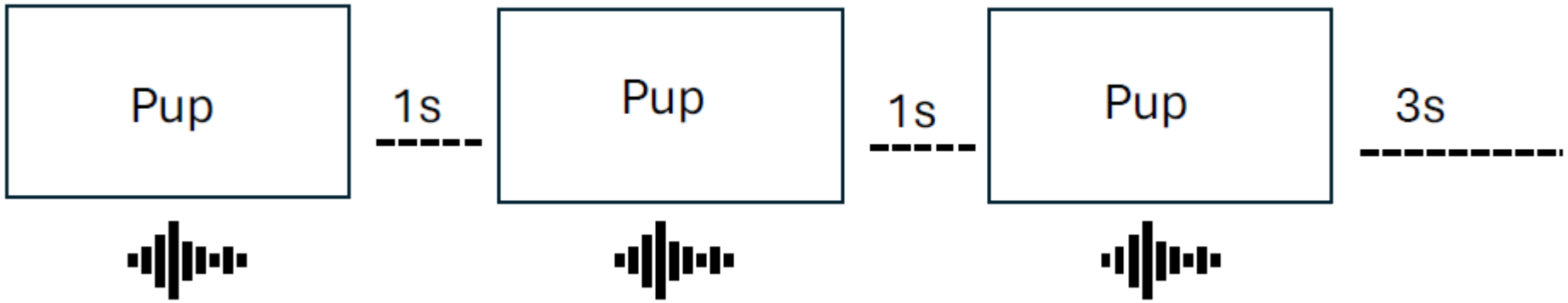
- Participants' assessment of their abilities as an L2 speech learner (Kivistö-de Souza & Lintunen, 2023b)
- 12 questions tapping into Schmidt's (1990) levels on noticing and understanding on a 5- point Likert scale (1= I can't do this at all, 5= Very easy)
- Composite mean score of the 12 questionnaire items (1-5) α = .84 suggesting that items tapped into the same underlying construct

Part 4. How easy it is for you to...
*Write **X** on the corresponding box.*

	5 Very easy	4 Quite easy	3 Quite difficult	2 Very difficult	1 I can't do this at all
notice pronunciation mistakes in the production of *individual sounds* in other non-native English speakers' speech?					
notice pronunciation mistakes in *intonation and rhythm* in other non-native English speakers' speech?					
notice pronunciation mistakes in *your own* English speech?					
tell where a *native* speaker of English comes from based on their accent?					
tell whether a non-native speaker of English is *Finnish* based on their English accent?					
tell where a *non-native* speaker of English (not Finnish) comes from based on their English accent?					
notice whether a sound combination you hear is possible in English or not?					
notice whether the intonation and rhythm you hear in an English sentence are possible or not?					
notice whether an individual sound you hear is pronounced correctly in English or not?					
explain why a sound combination you hear is possible or impossible in English?					
explain why the intonation and rhythm you hear are correct or incorrect in English?					
explain why an individual sound you hear isn't pronounced correctly in English?					

Noticing the gap task

- Individual audio files where participants listened to their own word productions and indicated whether their pronunciation was accurate
  - Isolated and cleaned target words from the Segmental Production Task presented three times to enhance noticing
  - Self-paced (repetition allowed) home-work assignment submitted through the course's virtual learning environment
  - See Kivistö-de Souza & Lintunen, 2023a



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Instructions in a nutshell:

1. Download your recording from Moodle ("Thinking about your pronunciation homework")
2. Make sure that you are in a quiet place where you can concentrate. If you have headphones, please use them.
3. Keep this answering sheet and a pen ready and play the recording. You will hear each word three times and each time you should pay attention to different parts of the word.
4. Listen carefully and tick the answer that applies. If you're unsure, you can listen to the word again. You can also stop the recording to have more time to answer.
5. Once you have listened to all words, answer the questions at the end.
6. Return the answering sheet to your teacher on the class 16th November. Alternatively, you can take pictures or scan your answers and upload them on Moodle.

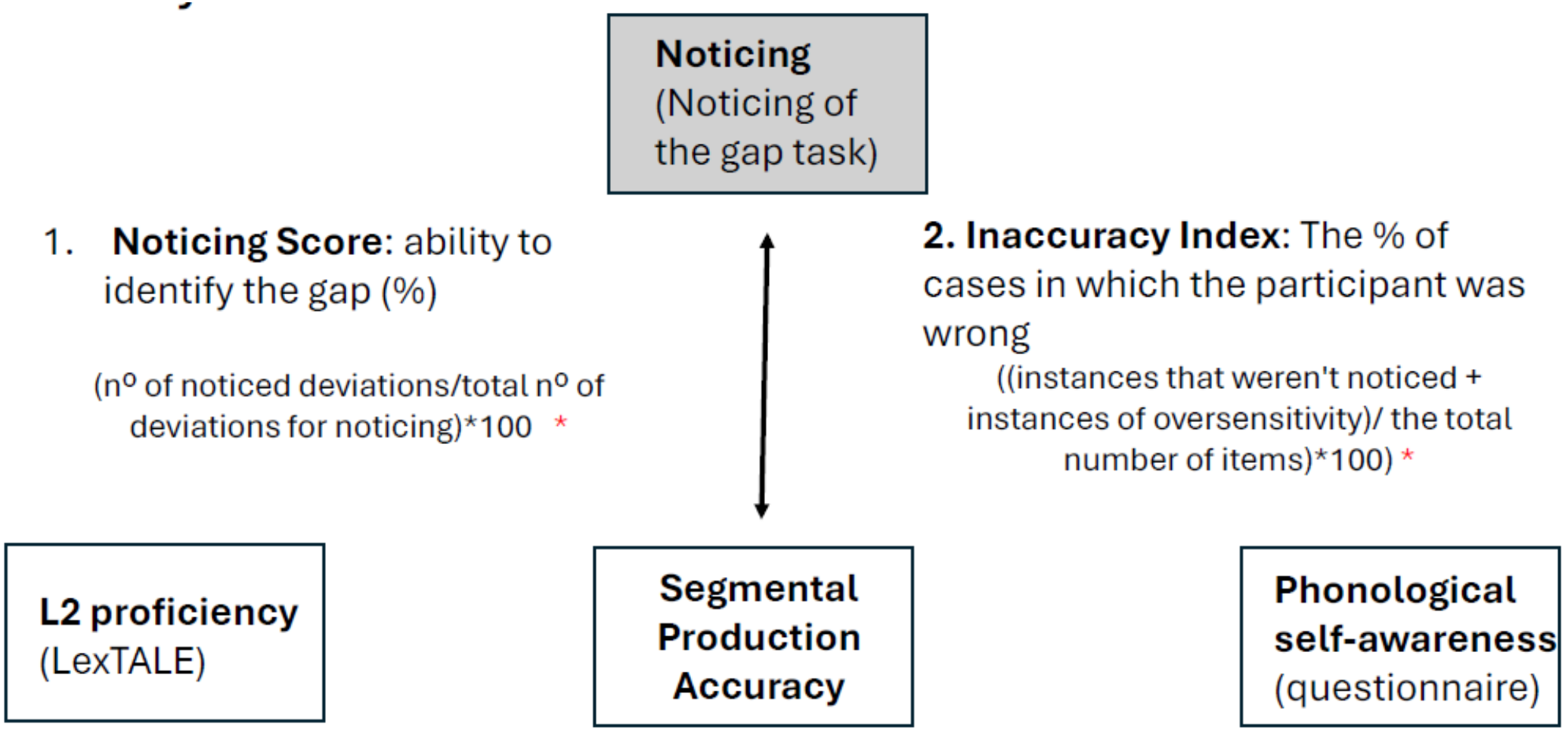



Part 1. Did you pronounce the indicated part of the word correctly? If you didn't, you can explain shortly why.

There is a longer pause and a beep before the next word is presented. If you need more time before the next word, pause the recording when you hear the beep.

1. Pup			
The initial consonant **p**up	☐ Yes	☐ No	(Why not?)
The vowel p**u**p	☐ Yes	☐ No	(Why not?)
The final consonant pu**p**	☐ Yes	☐ No	(Why not?)
2. Pub			
The initial consonant **p**ub	☐ Yes	☐ No	(Why not?)

Analysis and measures



* One to one mapping with the rater's accuracy ratings for the target sounds

Observations

- Very high proficiency level
- Extremely accurate production with very few pronunciation deviations
- Self-awareness scores clustered around the middle of the scale
- Noticing: Low noticing overall, 13/28 noticed nothing, extreme variation
- Inaccuracy Index: Large individual variation
- Strong negative correlation between segmental pronunciation accuracy and inaccuracy index: When looking at inaccurate noticing by combining the lack of noticing of deviating items with the oversensitive instances (i.e., how faulty are participant's noticing abilities), we can see that participants with poorer segmental production had more inaccurate noticing abilities

Discussion

- One possible hypothesis partially supported:
  - Participants who notice the gap more are likely to present more accurate production of the target features than those participants who notice the gap less (Baker & Trofimovich, 2006; Mora et al., 2014)?
    - No relation between accurate noticing and accurate production found, but some evidence between faulty noticing and inaccurate production
- Limitations include:
  - Very accurate production: Little to notice
  - High proficiency participants & L2 vocabulary size as a proxy for L2 proficiency
  - Small number of participants

We are not done yet

- **Self-assessment & self-awareness**
  - Self-assessed phonological awareness and noticing performance were not related. Faulty self-perception?
- **Explicit self-awareness & implicit self-awareness** (upcoming)
- **Mixed methods** to identify IDs, especially with small sample size (Kivistö-de Souza & Lintunen, 2023b)
- **Pedagogical applications** for consciousness-raising to increase noticing
  - Overall degree of noticing in the present study was extremely low: 46% did not notice any deviations despite of a phonetics and pronunciation course!

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