Text-to-Speech Technology in Development of Speaking Fluency

Valentyna Filimonova

Indiana University

Rationale

Fluency in language production is one of the measures of linguistic proficiency, alongside accuracy and complexity, presenting a desired outcome of language learning (e.g. Skehan, 2009). Fluency has been defined as speed of language production (Towell & Dewaele, 2005), that is a normal rate and without interruption (Skehan, 2009), and which is processed with native-like rapidity (Lennon, 1990). Towell & Dewaele (2005) show that fluency mirrors overall proficiency. What aids in the development of fluency is procedural (implicit) knowledge and overall processing ability, leading to automatization through frequency of use. According to Skehan (2009), one way to foster fluency is implementation of task-based learning and teaching (TBLT). And while fluency is often found in competition with complexity and accuracy outcomes, the best fluency-oriented tasks are said to use concrete, familiar information, and have a clear structure (Skehan, 2009). The task presented here builds on these requirements and also features several of the processes that Robinson (2011) identifies as favorable for language acquisition: context, opportunity for uptake, premodified input with positive evidence, opportunity for noticing the gap, and automatization.

Task Objectives

(1) Nonlinguistic outcome: To release a radio podcast on a prepared topic of popular interest
(2) Linguistic outcome: To develop greater speaking fluency in terms of rate of production, key pronunciation features, and naturally varied intonation

Task: Preparation, Implementation, and Evaluation

As scaffolding in preparation for the final product of a recorded radio podcast, students use their previously turned in and revised compositions to improve reading speed, pronunciation of key concrete features, and intonation. The sequence of subtasks takes place over two class periods, leading up to the final product task at the end of the second period.

1. Prior to the task: Write and revise an argumentative/research essay to share on radio
2. Pronunciation-focused task:
    - In class: Peer-listening to each other's compositions and "tutoring" feedback slip with a list of key pronunciation features to focus on and practice at home (e.g. non-aspiration of /ptk/, spirantization of intervocalic /bdg/, and any errors)
3. Intonation-focused task:
    - In class: Watch teleprompter advice video on varying speed and intonation: https://www.youtube.com/watch?v=ysE-QVqGJNM

- In class: Discuss advice for natural teleprompter reading, mentioning speed and intonation

4. Fluency-focused task:
    - At home: Practice reading compositions out loud, paying attention to the identified pronunciation features, speed, and intonation
    - In the lab: Practice speed-reading the composition along with the text-to-speech software, with different voices, dialects, and at different reading speeds
5. Final product task:
    - In the lab: Record yourself reading your composition, focusing on fluency, pronunciation trouble spots identified earlier, and varying intonation

The performance on the task is ultimately evaluated on the overall speed of production, natural intonation, and the pronunciation features identified during peer-listening and submitted as a tutoring feedback slip.

Useful text-to-speech online services (*various Spanish dialects, voices, and speed settings):

- https://translate.google.com/
- acapela-box.com/AcaBox*
- http://www.fromtexttospeech.com/*
- http://www.oddcast.com/home/demos/tts/tts_example.php*
- https://text-to-speech-demo.ng.bluemix.net/*
- https://ttsreader.com/*

References

Housen, A., & Kuiken, F. (2009). Complexity, accuracy and fluency in second language acquisition. *Applied Linguistics, 30*(4), 461-473.

Lennon, P. (1990). Investigating fluency in EFL: A quantitative approach. *Language Learning, 40*, 387-417.

Robinson, P. (2011). Task-Based Language Learning: A review of issues. *Language Learning, 61*(Suppl. 1), 1-36.

Skehan, P. (2009). Modelling second language performance: Integrating complexity, accuracy, fluency, and lexis. *Applied Linguistics, 30*(4), 510-532.

Towell, R., & Dewaele, J.-M. (2005). The role of psycholinguistic factors in the development of fluency amongst advanced learners of French. In J.-M. Dewaele (Ed.), *Focus on French as a foreign language: Multidisciplinary approaches* (pp. 210-239). Clevedon/Buffalo/Toronto: Multilingual Matters LTD.