Speakometer: English Pronunciation Coach

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Title	Speakometer
Website	https://www.speakometer.net
Product Type	Online English pronunciation and accent coach
Operating Systems	iOS, Android AS systems and PC
Registration	Required
Hardware	An internet-accessible device
Price	A free basic account (Speakometer full version $2.49 USD)

Consonant and vowel sounds of English (segmentals) carry a significant weight in communication. Pronunciation instruction focusing on segmental features has been found to be highly effective (e.g., Thomson & Derwing, 2015). However, students with different first languages (L1) or even students from the same L1 backgrounds, have different pronunciation needs. With limited class time, teachers cannot be expected to cater to the pronunciation needs of every student. This has made individualized pronunciation instruction, which enables pronunciation instruction tailored for the needs of each second language (L2) learner, a requirement in today's language classrooms (Levis, 2007). The growing number of computer-assisted pronunciation training (CAPT) tools have been responding to this need, making individualized pronunciation instruction, as well as individualized feedback more feasible and available for L2 speakers. Chun (2012) asserts that in order for a CAPT tool to be effective, it must contain "auditory and visualization features, automatic speech recognition (ASR), and appropriate and accurate feedback" (p. 8).

Speakometer, an online application that provides segmental practice for its users, was built around Chun's (2012) three pillars, with a strong auditory feature combined with an ASR to provide learners with relevant pronunciation feedback. The application uses an artificial intelligence (AI) algorithm and ASR to rate the user's spoken English pronunciation. It is targeted for all users who aim to improve their English pronunciation. The users are provided with immediate feedback, which appears on the screen as verbal (e.g., "Very good"), along with the image of a 'speakometer' displaying four colors for the rating: red, orange, yellow and green.

Description

The application was first released in October 2019, with the latest update in October 2021. It is available for iOS and Android AS systems and PC. Both a free and paid versions are available.

Once the user has downloaded the application, they will be asked to input their native language. Then they will be brought to the main menu in Speakometer, which consists of Me, Learn, Search and Practice. In the Me section, the user can change their L1 information and the target accent (i.e., British or American), record their voice, and get a daily reminder. The application then provides the learners with English pronunciation materials based on their L1 and provides feedback based on the target accent. Figures 1(a) and (b) display what the Profile and the Practice Menus look like.
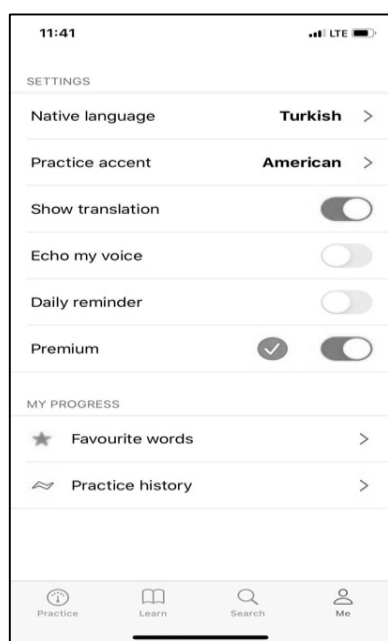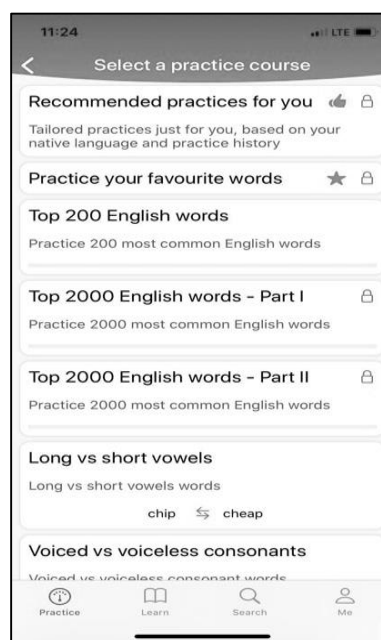

Figure 1(a). Profile Menu

Figure 1(b). Practice Menu

The Search button allows users to look up words and listen to their pronunciation. In the Learn section, users are provided with training on vowels and consonants in English. The Vowels section includes a list of short vowels, long vowels, and diphthongs (see Figure 2(a)). Here, users can click on each sound and listen to it as many times as they would like. In addition, one example word with the target sound is included in the training. Three more words also appear on the screen with the same target sound, without the audio model. The Consonants section includes a list of voiced, voiceless, and other consonants (see Figure 2(b)). Here, the same structure is available for users to learn about the individual sounds by clicking on each one and hearing the sound, hearing the example word with the model pronunciation, and seeing three more words with the same sound without the model pronunciation.
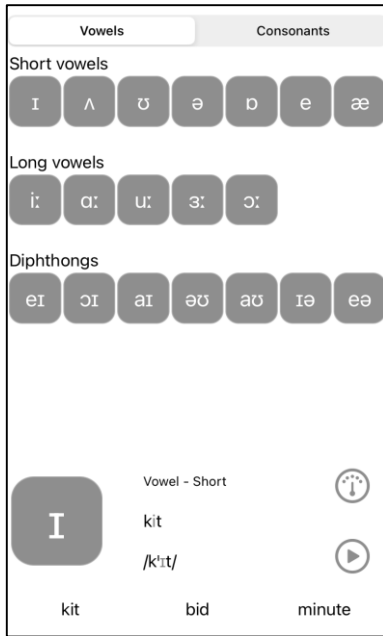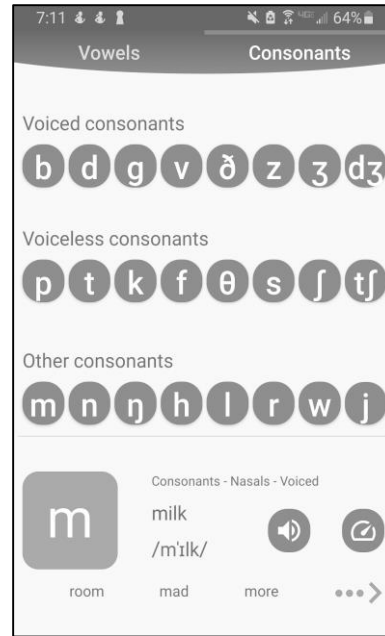
Figure 2(a). Vowels.

Figure 2(b). Consonants

Finally, the Practice section is where users practice their English pronunciation with the option of choosing between American or British English pronunciation. This section offers a *Recommended practices for you* based on the user's native language, as well a *Practice your favorite words*, in which users are allowed to 'like' the words they choose and then practice them through this feature (these two features are available in the paid version only). In addition to these categories, users can find *Top 200 English words* in which most common English words are listed. The application provides numerous practice sections such as *Commonly mispronounced words*, *-ed ending words*, *-s ending words*, *Irregular verbs*, *Silent -r*, and *Consonant ending words*. It also includes a translation feature for those users who wish to translate the words they are practicing into their native language.

When users choose a practice section, they get access to a list of ten practice words. Each word appears on the screen one by one with the phonetic transcription of the word underneath the spelling, with the audio model and the option to star the word to add it to the Favorite words section. Underneath the word and the phonetic transcription, there is a microphone button for the users to record themselves. As soon as the user records their own production, the "Speakometer" appears on the screen displaying how accurately the user pronounced the word on a four-point scale: red, orange, yellow and green. Together with this rating, there is written feedback which appears between the word and the Speakometer. Depending on the rating, the feedback changes. For example, for a red level, the feedback reads: *You can do better, let's try again* (see Figure 3(a)). The user may choose to try again or click on 'Next' to go to the next word. After the list of ten practice words are completed, the application presents the overall score for the user for that practice course out of 100 points (see Figure 3(b)).
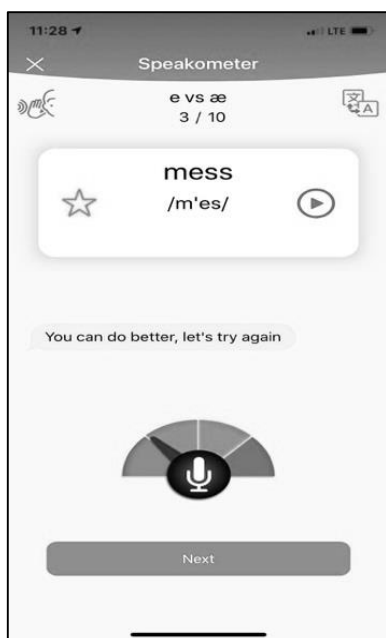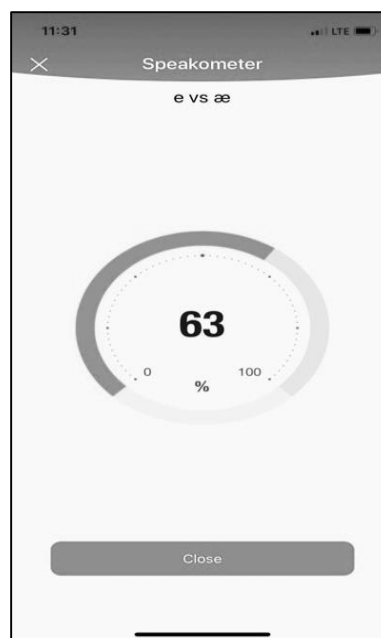
Figure 3(a). Feedback 1   *Figure 3(b).* Overall Score

Evaluation

In the evaluation of this application, Jamieson, Chapelle, and Preiss (2005)'s framework to assess CALL tools was adopted. This framework has six criteria: 1) language learning potential, 2) learner fit, 3) meaning focus, 4) authenticity, 5) impact, 6) and practicality. The language learning potential criterion is concerned with the clarity of the explanations, sufficiency of the exercises, and whether the exercises provide focus on controlled or spontaneous production. Considering these three measures, the application is effective in providing both clear explanations with the use of simple instructions (e.g., select a practice course) and providing new practice material for each section with every new attempt.

Learner fit refers to the degree of learner's exposure to language when using the tool. In terms of this criterion, the primary benefit Speakometer provides its users is the focus on practicing single words instead of sentences. This could be an advantage for lower-level learners since isolated words could be relatively easier to deal with compared to full sentences, in which in addition to words, there could also be complex grammar structures. Moreover, the application allows users to listen to the model pronunciation for each word as many times as they please. Since the main practice style is practicing words in isolation, users are exclusively exposed to the segmental features. This could help with users' intelligibility, the extent to which a spoken message is understood (Munro & Derwing, 1995).

Accentedness, or how close the user's speech is to that of a native speaker's (Kennedy & Trofimovich, 2008), is another point of focus for this application. While practicing, users receive more positive feedback when they mimic the sounds exactly like a native speaker (e.g., *That was perfect!*). However, when they use a different sound system, such as the sound system of their L1, they are asked to repeat or they receive feedback such as "not too bad, but you can do better". There is also an "Echo my voice" option available for users to record and hear their own voice for

each word in the Me section. This is a potentially powerful self-feedback tool since it enables users to compare their productions with that of the model.

In terms of the authenticity criteria, the application could be regarded as authentic since it provides authentic materials: British and American English pronunciation of the words from native speakers. Regarding practicality, Speakometer has a user-friendly interface with simple explanations and appropriate content presented in each menu.

In terms of meaning focus, there are some shortcomings. Since the words to practice are not introduced in a meaningful context, chances of the users acquiring them and using them in meaningful ways might be lower, which could impact both pronunciation and their overall language skills. In terms of impact, the application is not suitable for all learner types, since some learners learn best when the content is presented in a meaningful context rather than in isolated chunks (Bowen, 1972). Another limitation of the application is it largely relies on segmental features of pronunciation and does not provide any suprasegmental training even though research has shown that suprasegmentals have a significant impact on pronunciation (e.g., McAndrews; 2019).

Finally, the application was evaluated in terms of the quality and quantity of the feedback it provides its users. There are twelve written feedback alternatives provided in English, which requires at least a basic literacy knowledge in English. When the application considers the production of the user as correct, it provides such feedback as "Excellent!", "That was perfect!", etc. However, when the user does not pronounce the word correctly, it asks the user to try again. However, there is no information or guidance about what was wrong in the user's production to enable the user to see and understand their mistake and do better. The application simply keeps telling the user to try again until the user either tries several times with no success or moves on the next word, not knowing what was wrong. This kind of insufficient feedback might discourage the users to keep working on their pronunciation. Meaningful feedback is necessary for users to move forward and maintain their motivation to improve.

Conclusion

Speakometer: English Pronunciation Coach offers a user-friendly interface with clear and simple instructions and an abundance of practice materials. The application provides audio pronunciation models for the words both in British and American English. Such input is valuable for pronunciation improvement of especially EFL learners who do not live in the target country. Additionally, the application fosters pronunciation improvement by encouraging the learners to go beyond perception and produce their own pronunciations of the words presented in the Practice menu. This way, the learners are not passive receivers of the target language input, but they are also active in producing outcomes of their own. Although the feedback portion of the application needs some improvement to provide more meaningful evaluations for future use, the learners are still receiving both written and visual feedback. It could be argued that they are even receiving auditory feedback with the help of *Echo my voice* feature. This could help raise the learners' awareness of their own productions and motivate them to further improve their L2 pronunciation. Therefore, this application could be great tool for learners who are invested in improving their English pronunciation, offering a clear and guided path about where to start.

References

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About the Reviewer

Sebnem Kurt is a third year PhD student at the Applied Linguistics and Technology program at Iowa State University. Her research interests include second language pronunciation, computer assisted pronunciation teaching and second language assessment. Currently, she is working on a research project examining the effects of wearing face masks on comprehensibility with four other fellow researchers.