Vietnamese vowels—The central focus

A description of Vietnamese central vowels and adult learner difficulties in pronunciation

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Executive Summary

PURPOSE

To determine how successfully English-speaking learners of Vietnamese are able to produce native-like vowel durations and qualities.

CONCLUSIONS

All 10 adult learners failed to produce the duration contrast that distinguishes long and short central vowels in Vietnamese ($\text{a}/\text{ă}$, $\text{a}/\text{â}$). Learners also tended to assimilate unfamiliar Vietnamese vowels, such as central $\text{ơ}$ and $\text{o}$, to more familiar English ones.

RELEVANCE

The results of this study may help non-native speakers understand and articulate the vowel properties that distinguish individual Vietnamese vowels. Native-like pronunciation of these vowels would aid successful communication in U.S. Government contexts.

Figure 1. Relative tongue positions of Vietnamese vowels based on acoustic measurements from all native speakers in the study. The central vowels $\text{ơ}$ and $\text{o}$ have no clear equivalents in English.

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Front Central Back

High Low

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What this study investigated

This study examined how successfully English-speaking learners of Vietnamese are able to produce native-like vowel durations and qualities for Vietnamese central vowels—that is, vowels that require a tongue position that is intermediate between the front and back of the mouth. An analysis of native speaker speech served as a point of reference and provided a new empirical description of the basic vowel inventory.

English versus Vietnamese vowel durations: English does not use length to distinguish one vowel from another. In contrast, Vietnamese has two pairs of vowels that participate in a long/short alternation. For example, the word $\text{trang}$ (“page”) means something different from the word $\text{tràng}$ (“moon”) because the vowel is longer in $\text{trang}$ than $\text{tràng}$.

English versus Vietnamese vowel qualities: Vowel quality consists of two dimensions that correspond roughly to the position of the tongue in the mouth—vowel height (high to low) and vowel advancement (front to back). These dimensions map to specific acoustic properties. Figure 1 shows the distribution of Vietnamese vowels across all the native speakers in the current study based on acoustic measurements. The...
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CONCLUSIONS

Findings from a quantitative analysis of non-native and native Vietnamese speech production revealed the following conclusions:

1. **Vowel duration—**None of the 10 adult learners of Vietnamese produced the duration contrast that distinguishes long and short central vowels in Vietnamese (ơ/â, a/ă).

Figure 2 shows the average duration for the pairs of long/short Vietnamese vowels for adult learners and native speakers. Each of the adult learners produced a similar duration for the long and short vowels, whereas each native speaker produced long vowels that were significantly longer than the corresponding short vowels. This finding suggests that vowel duration contrasts are especially difficult for native speakers of English to learn. In addition, these contrasts may require more explicit emphasis than is currently included in most published teaching materials for Vietnamese as a second language.

2. **Vowel quality—**Learners tended to assimilate unfamiliar Vietnamese vowels, such as central ơ and ư, to more familiar English ones.

The vowel quality data revealed students at both ends of the production continuum. One student, for example, produced a remarkably native-like system, while another consistently replaced unfamiliar vowels with familiar English forms. In between these extremes were students who varied in their abilities to pronounce Vietnamese vowels accurately and consistently.

When students missed the target native speaker pronunciation for central vowels, such as ơ and ư, they frequently produced vowels that drifted in the direction of familiar back vowels in American English, u and o, which also occur in Vietnamese as u and ŭ. Overall, student vowel qualities were considerably less consistent than those observed for native speakers, and student productions frequently overlapped with a number of adjacent vowels, increasing the likelihood of reduced intelligibility.

Figure 2. In contrast to native speakers of Vietnamese, adult learners produce long and short vowels with equal durations.

RELEVANCE

The two distinct vowel durations that are visible in the native speaker data in Figure 2 may help learners to understand and reproduce the contrast between Vietnamese long and short vowels. In particular, adult learners might improve their pronunciation, not by shortening the short vowels, but by lengthening the corresponding long vowels.

The vowel quality data suggest that even though most students are generally able to separate the central vowels from the back vowels that they are familiar with in English, they struggle to produce native speaker vowel qualities with consistency. The vowel distribution in Figure 1 may help learners to understand and reproduce the relative vowel positions more consistently.

Although this study cannot address the extent to which the mispronunciation of vowel duration and quality affects listener comprehension, it seems reasonable to expect that any degree of accent mitigation in the production of vowels would likely improve adult learner intelligibility and aid successful communication in U.S. Government contexts.