

INTRODUCTION

In the context of English language teaching and learning, pronunciation and particularly intonation play a crucial role in conveying clear messages; however, Vietnamese EFL students often face significant challenges due to focusing excessively on individual sounds while overlooking suprasegmental features. To address this gap, this study evaluates the impact of Praat software - a visual feedback tool - on improving English intonation proficiency as well as the attitudes and feedback of Vietnamese EFL students toward its integration. Through this investigation, the research aims to propose effective technology-integrated solutions for instruction and self-practice in English intonation.

RESEARCH QUESTIONS

- What are the common intonation deviations made by Vietnamese EFL students?
- How does the use of Praat software impact Vietnamese EFL students' English intonation competence?
- What are Vietnamese EFL students' attitudes and feedback toward using Praat in practicing English intonation?

THEORETICAL FRAMEWORK

English Intonations

- Suprasegmental feature involving systematic variation in pitch (Cruttenden, 1997).
- Four patterns: falling, rising, fall-rise, and rise-fall.
- Contributes to meaning, communicative intent, and naturalness (Wells, 2006; Celce-Murcia et al., 2010).

Intonation Deviations

- Inappropriate pitch movement.
- Reversed pitch movement.
- Simplification / overcomplication.
- Monotone delivery.

Praat & Visual Feedback

- Acoustic analysis software developed by Boersma & Weenink.
- Visualizes pitch contours for analysis and comparison.
- Supports learners' self-monitoring and self-correction.
- Previous studies reported positive effects on pronunciation/intonation learning (Le & Brook, 2011; El-Garawany, 2021; Nurjanah et al., 2023).

METHODOLOGY

Research participants

- 10 students from the Faculty of English, University of Foreign Languages, Hue University.
- 3-week experimental intervention

Research instruments

- Participant selection questionnaire
- Test
- Practice exercises
- Participant interview questions
- Intonation rating form for native speakers and lecturers

Data collection

PHASE 1
PILOT EXPERIMENT WITH A SMALL GROUP

A pretest-posttest design was employed to investigate the effects of Praat software on the improvement of English intonation.

PRE-TEST

INTERVENTION

POST-TEST

Duration: 3 weeks
Number of sessions: 10 sessions (~30 minutes/session)
Participants: 10 students

PHASE 2
EVALUATION AND CLASSIFICATION OF INTONATION DEVIATIONS

1 IDENTIFY COMMON DEVIATIONS

Compare pre-test results of the 10 students with native speakers' models to identify common intonation deviations.

STUDENT (EXAMPLE)

NATIVE SPEAKER MODEL

VS.

2 CODING AND DATA PREPARATION

Code the audio recordings from 1 to 10 to ensure participant anonymity.

1

2

3

4

5

...

10

3 INDEPENDENT EVALUATION

The audio recordings were provided to four independent raters:

Rater 1: Native speaker

Rater 2: Native speaker

Rater 3: University lecturer

Rater 4: University lecturer

Listen to each audio recording → Complete the rubric based on the degree of deviation.

PHASE 3
SEMI-STRUCTURED INTERVIEWS

A semi-structured interview was conducted to explore participants' perceptions and experiences regarding the use of Praat in improving English pronunciation.

INTERVIEW CONTENT

- Participants' perceptions of using Praat
- Attitudes toward intonation improvement
- Level of difficulty when using Praat
- Advantages, difficulties, and suggestions

RESULTS

The data provided further insights into participants' perceptions of the effectiveness and application of Praat in improving English intonation.

KEY FINDINGS

1. Common Intonation Deviation Patterns:

- Excessive pitch exaggeration
- Oversimplified intonation contours
- Inverted pitch trajectory
- Monotonous speech delivery
- Inappropriate falling pitch regardless of communicative context

2. Divergence in Rater Assessments:

- Native English Speakers: Prioritized ease of understanding; simplified intonation contours and context-free falling tones were still rated highly for intelligibility and message transmission.
- Vietnamese Instructors: Emphasized academic correctness; utterances deviating from textbook intonation rules received lower scores, despite maintaining communicative value.
- Consensus: Both rater groups gave lower ratings to deviation types (1) and (3) because they undermined the naturalness of speech.

3. Effectiveness of Praat in Improving Intonation

- Mean score showed clear improvement:

Standard deviation

Pre-test	5,41
Post-test	4,23

- Paired-samples t-test demonstrated statistically significant improvement:

t	df	p
-3,27	9	0,01

4. Positive Student Perceptions towards Praat:

- Prior Experience:* 100% had never previously used dedicated software for intonation practice.
- Self-Confidence & Awareness:* 100% felt more confident and observed distinct improvements in real-world communication.
- Visual Feedback Utility:* Praat's visual pitch contours were highly valued for practicing interrogative sentence structures and pitch adjustments.
- Technology Acceptance:* 60% rated Praat as more practical than traditional theoretical learning; 60% intended to continue using the software in the future.
- Learning Curve:* Initial difficulty in reading pitch contours was gradually resolved with proven training efficacy.

IMPLICATIONS

For Pedagogical Practice:

- Integrate Praat/Electronic Visual Feedback into Phonetics–Phonology modules to allow students to visualize suprasegmental elements instead of relying solely on auditory perception.
- Build "instructional scaffolding" by providing standardized model samples and guiding students in self-practice.
- Adopt flexible assessment criteria that balance theoretical accuracy with natural intelligibility.

For Students (Autonomous Learners):

- Proactively shift learning methods: move beyond vowels and consonants to prioritize suprasegmental features (stress, intonation).
- Utilize Praat as a "mirror" to self-diagnose and correct personal pronunciation issues.
- Select and target personal difficult intonation patterns to optimize practice time.

For Future Research:

- Expand the sample size to enhance representative validity.
- Further investigate the divergence between textbook theory and authentic language (emphasizing pragmatic use).

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