The Intelligibility Development Cycle: Evaluating a Structured Framework for Pronunciation Instruction

Ivan Crespo
University of Illinois Urbana-Champaign, USA // ilr4@illinois.edu

ABSTRACT: Despite the growing emphasis on intelligibility as the primary goal of pronunciation instruction, teachers often lack practical guidance for organizing pronunciation instruction into a coherent developmental sequence. This article evaluates the Intelligibility Development Cycle (IDC), a classroom-based framework designed to support intelligibility-focused pronunciation instruction. Fourteen adult English learners completed a six-week hybrid course structured around the IDC. Data from reflections, discussion posts, self-recordings, focus groups, and a final survey were analyzed qualitatively. Learners described the framework as clear and consistent, with each phase supporting a different aspect of learning. Awareness helped them notice features that affect intelligibility, perception strengthened their ability to hear contrasts, guided practice supported more accurate production, communicative tasks revealed challenges in real-time use, and reflection promoted self-monitoring. The findings suggest that the IDC can provide a clear and usable structure for organizing intelligibility-focused pronunciation instruction.

Keywords: Intelligibility, Pronunciation Instruction, Perception and Production, Instructional Framework, Intelligibility Development Cycle (IDC)

1. Introduction

Intelligible speech is essential for effective communication in English. Adult English learners often report situations in which they use appropriate vocabulary, produce grammatically accurate sentences, and speak fluently, yet their message is not understood by listeners. These breakdowns occur in classrooms, tutoring sessions, and everyday interactions, often due to pronunciation features that obscure meaning. Such experiences can affect learners' confidence, participation, and willingness to speak. For this reason, pronunciation instruction that prioritizes intelligibility remains an important component of English language teaching.

Over the past several decades, pronunciation pedagogy has shifted from prioritizing native-like accuracy to emphasizing intelligibility as the primary instructional goal. The intelligibility principle positions being understood as more relevant than approximating native norms, particularly in a global context where English functions as a lingua franca (Levis, 2005, 2018). In this view, accented speech is expected, and instructional decisions are guided by their impact on listener understanding rather than conformity to a

specific variety of English. As Derwing and Munro (2015) argue, intelligibility provides a more realistic and pedagogically meaningful target for adult English learners.

Despite strong support for intelligibility-oriented instruction, teachers often lack clear guidance on how to organize pronunciation instruction as a coherent developmental sequence. Although pedagogical models such as Celce-Murcia et al.'s (2010) communicative framework propose structured instructional sequences, decisions about sequencing are often based on intuition rather than on systematic evidence of how learners experience these sequences over time. In particular, there is limited research that examines how learners experience the progression from awareness to perception, production, and communicative use in actual instructional settings.

Learner-centered perspectives provide a way to address this gap. Based on existing pronunciation research and more than two decades of experience teaching pronunciation to adult English learners, I developed the Intelligibility Development Cycle (IDC), a pedagogical framework that organizes instruction into five phases: awareness, perception, guided practice, functional use, and reflection. The present study evaluates this framework through a qualitative analysis of a six-week hybrid pronunciation course. Drawing on reflections, discussion posts, focus groups, surveys, and self-recordings, the study examines how learners experienced each phase of the IDC and how they perceived its usefulness for developing intelligible speech. The findings suggest that learners viewed the IDC as a clear and supportive approach to pronunciation instruction and identified reflection as an important component of the learning process. In this way, the IDC offers a practical framework for organizing intelligibility-focused pronunciation instruction.

2. Literature Review

Intelligibility is widely recognized as the central goal of pronunciation instruction (Levis, 2005, 2018). Levis (2005) distinguished the nativeness principle, which assumes that learners should aim for native-like pronunciation, from the intelligibility principle, which positions being understood as the more realistic and pedagogically meaningful target because effective communication does not require a native-like accent. Derwing and Munro (2015) similarly emphasize that intelligible speech does not require the absence of a foreign accent and that instruction should prioritize features that affect listener understanding.

Pronunciation features are commonly discussed as either segmental or suprasegmental features, both of which may affect intelligibility (Wang, 2020). Segmental features involve individual consonants and vowels, whereas suprasegmental features include stress, rhythm, and intonation. Both categories contribute to listener understanding and have been identified as important targets of pronunciation instruction.
English includes several tense–lax vowel distinctions that L2 learners often find difficult, such as /i/ versus /ɪ/ (leave and live) and /æ/ versus /ɛ/ (bad and bed). These contrasts can cause misunderstandings because both items in the pair are real words that fit grammatically in many contexts. Flege et al. (1999) demonstrated that learners often fail to produce distinctions they cannot perceive, and that perceptual accuracy strongly predicts production accuracy. Consistent with these findings, perception-focused training has been shown to improve production. For example, Bradlow et al. (1997) found that Japanese learners improved production of English /r/ and /l/ following perception training, and Kissling (2014) reported similar results with other segmental features. These findings underscore the need for instruction that strengthens perception before expecting accurate production.

Suprasegmental features also influence intelligibility. Gilbert (2008, 2012) explains that misplaced word stress can interfere with listeners' recognition of intended words even when the individual sounds are

produced correctly. For example, learners who place primary stress on the wrong syllable may produce a pronunciation that listeners do not immediately recognize as the intended word. Celce-Murcia et al. (2010) describe rhythm, stress, and intonation as essential components of intelligible speech. Gilbert (2008, 2012) further explains that rhythm, stress, and intonation help listeners track important information, identify boundaries, and interpret discourse. For example, intonation helps distinguish between statements and questions, while stress highlights the most important information in an utterance. Pickering (2018) notes that intonation shapes how listeners interpret pragmatic meanings such as confidence, politeness, or uncertainty (e.g., rising intonation may signal uncertainty, whereas falling intonation may signal confidence). These findings suggest that suprasegmental cues support intelligibility by helping listeners identify important information, interpret discourse, and derive pragmatic meaning (Gilbert, 2008, 2012; Pickering, 2018).

In addition to suprasegmental features, context plays a significant role in intelligibility. Jenkins (2000) argues that listeners often draw on contextual cues to recover intended meanings when pronunciation is unclear. However, some errors consistently cause communication breakdown because they produce real, competing lexical items or involve high-frequency words that listeners expect to recognize immediately. These include tense-lax vowel confusions (Flege et al., 1999), problematic stress placement (Celce-Murcia et al., 2010), and pronunciation errors that lead listeners to recognize a different word than the one the speaker intended (Chan & Vitevitch, 2015; Felty et al., 2013). In these cases, contextual cues may not always be sufficient to recover the intended meaning (Jenkins, 2000).

Across these strands of research, there is broad agreement about the pronunciation features and instructional components that support intelligibility. Research has established the importance of perception for accurate production (Flege et al., 1999; Bradlow et al., 1997), the role of suprasegmental features in listener understanding (Gilbert, 2008, 2012; Pickering, 2018), and the importance of prioritizing pronunciation features that most directly affect intelligibility (Derwing & Munro, 2015; Levis, 2018).

Existing pedagogical models, such as the communicative framework proposed by Celce-Murcia et al. (2010), organize these instructional components into structured teaching sequences. However, these models are primarily pedagogical in nature and provide limited qualitative evidence regarding how learners experience such structured instructional sequences in authentic classroom settings. Although pronunciation research has identified effective instructional components and pedagogical models have proposed structured teaching sequences, little qualitative research has examined how learners experience these sequences in practice. To address this gap, the present study evaluates and refines the IDC pronunciation framework by analyzing learners' experiences in a six-week hybrid pronunciation course. Data sources include learner reflections, discussion posts, focus groups, surveys, and self-recordings. The study examines how learners experienced each phase of the IDC and how they perceived its usefulness for their intelligibility development. The following research questions guided the study:

RQ1. How do learners experience each phase of the IDC in a six-week hybrid pronunciation course?
RQ2. How do learners perceive the usefulness of each phase for their intelligibility development?

3. Methods

3.1. Research Design

This study used a qualitative design to examine how learners experienced the IDC. The purpose was to evaluate how learners engaged with an intentionally designed sequence for developing intelligible speech. A qualitative approach was appropriate because the research questions focused on learners' perceptions of each phase of the instructional cycle and their evaluations of its usefulness.

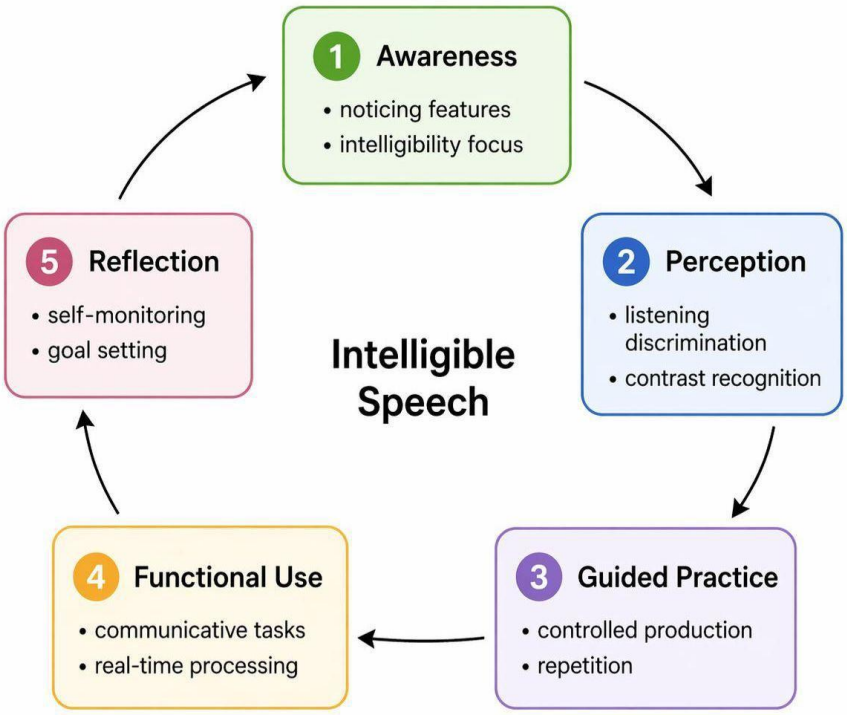
3.2. Participants

Fourteen adult English learners participated in the study. Thirteen were scholars from Kazakhstan who were completing an academic program at a large Midwestern university, and one participant was from Ecuador. The group was relatively homogeneous in terms of linguistic and educational background, with most participants sharing similar first-language and academic experiences. This homogeneity provided a consistent context for examining learners' experiences of the instructional framework. At the same time, because pronunciation development is influenced by learners' first-language backgrounds, the findings should be interpreted as reflecting how this group experienced the IDC rather than as representing the experiences of all English learners. All participants were enrolled in a six-week hybrid pronunciation course. Their overall proficiency ranged from high-intermediate (B2) to advanced (C1) based on the Common European Framework of Reference for Languages (CEFR), based on the program's placement procedures. Participation was voluntary, and all learners provided informed consent under the approved IRB protocol.

3.3. Instructional Context

The six-week course was organized around the Intelligibility Development Cycle (IDC), a pronunciation framework created by the researcher based on more than two decades of teaching experience in intensive English programs, international teaching assistant preparation, private tutoring, and graduate-level pedagogy courses. The framework reflects a recurring developmental pattern observed in learners working toward more intelligible speech and is grounded in research on perception and production, suprasegmental instruction, intelligibility in context, and self-monitoring. The IDC consists of five phases (see Figure 1).

Figure 1. The Intelligibility Development Cycle (IDC)



Note. The cycle represents five phases of pronunciation development: awareness, perception, guided practice, functional use, and reflection. Arrows indicate the cyclical progression of learning, with reflection leading back to renewed awareness.

3.3.1. Awareness

Learners are introduced to a target pronunciation feature and its role in intelligible communication. Awareness-building activities include video lectures, instructor modeling, and demonstrations of how specific errors can lead to misunderstandings.

Perception. Once learners understand the feature conceptually, they practice discriminating and recognizing it in controlled listening activities. Research indicates that perception supports accurate production, so this phase provides a foundation for later practice. In this course, perception was developed through H5P tasks (interactive online listening activities with immediate feedback), minimal-pair listening, and recognition activities embedded in authentic contexts.

3.3.2. Perception

Once learners understand the feature conceptually, they practice discriminating and recognizing it in controlled listening activities. Research indicates that perception supports accurate production, so this phase provides a foundation for later practice. In this course, perception was developed through H5P tasks (interactive online listening activities with immediate feedback), minimal-pair listening, and recognition activities embedded in authentic contexts.

3.3.3. Guided practice

Learners then work on controlled production. They imitate models, repeat short utterances, and complete self-recordings to build articulatory control. During this phase, learners adjust their production without communicative pressure while receiving targeted instructor feedback on accuracy and clarity.

3.3.4. Functional use

Learners apply the feature in communicative tasks such as pair work, short dialogues, and group interactions. This phase emphasizes transfer from controlled practice to meaningful use, allowing learners to observe how pronunciation choices influence listener comprehension.

3.3.5. Reflection

Learners reflect on their learning, evaluate their progress, and identify further needs. Reflection occurred through weekly written responses, audio commentary on their recordings, in-class discussions, and end-of-week check-ins. These activities encouraged self-evaluation and reinforced self-monitoring, an important component of long-term intelligibility development.

These five phases formed the structure of each instructional week. Asynchronous materials addressed awareness, perception, and guided practice. In-person classes provided opportunities for functional use and reflection. Throughout the course, the IDC consistently framed pronunciation instruction as supporting intelligibility rather than the achievement of native-like pronunciation.

3.4. Data Sources

Five data sources were used to examine how learners experienced the IDC:

1. Learner reflections describing what students learned and which activities supported their intelligibility.
2. Online discussion posts responding to prompts about their experiences with each phase.
3. Two semi-structured focus group interviews conducted in Weeks 3 and 6.
4. An end-of-course survey with open-ended items regarding the usefulness of each phase of the IDC.
5. Self-recordings with brief commentary describing what learners noticed during practice.

These sources provided insight into how learners understood, engaged with, and evaluated each phase of the IDC.

3.5. Data Analysis

Data were analyzed using thematic analysis following Braun and Clarke (2006). After familiarization with the dataset, the researcher conducted the initial coding, focusing on learner descriptions of awareness-building moments, perceptual gains, helpful practice activities, transfer to communication, and reflections on progress. Codes were then organized according to the existing IDC framework. The analysis examined how learners experienced each phase and the usefulness of each phase for their intelligibility development.

To increase reliability, a second coder independently coded 20% of the dataset. Intercoder agreement was calculated as percent agreement and reached 85%, which falls within the 80% to 90% range identified by Saldaña (2025) as a common benchmark for qualitative coding. The analysis also examined patterns in learners' experiences and perceptions across the five phases of the IDC.

4. Results

Results from the analysis of reflections, discussion posts, focus groups, surveys, and self-recordings showed how learners experienced each phase of the IDC. The findings below describe learners' experiences with each phase and their perceptions of its usefulness for intelligibility development.

4.1. Awareness Results

Learners frequently commented in their module reflections and forum posts that the awareness activities helped them notice pronunciation features they had not previously paid attention to. Several participants stated that they had never been explicitly taught why certain vowel contrasts or stress patterns led to misunderstandings. Others mentioned that the video explanations and instructor demonstrations made specific features "clear" or "easy to recognize." As one learner explained in a Module 2 reflection, "Before, I didn't know the sound of several vowels. After watching the second module, I learned how to pronounce them." Some students also reported becoming aware of habitual patterns in their own speech that they had not noticed before.

4.2. Perception Results

Across module reflections and forum posts, learners noted the perception phase as challenging but useful. Many stated that they initially struggled to distinguish contrasts such as /i/ and /ɪ/ or /æ/ and /ɛ/. Several participants noted that the H5P activities and immediate feedback helped them identify correct answers after repeated attempts. One participant explained in a Week 2 forum post that the audio samples that the interactive video "helped me listen how that word sounds." Learners frequently mentioned repeating perception tasks multiple times. Some reported that they became more sensitive to length, pitch, or vowel quality differences during this phase.

4.3. Guided Practice Results

Learners described guided practice activities as opportunities to adjust their pronunciation in a controlled way. Focus group, reflection, and survey data showed that many reported listening to their own recordings several times before submitting them. Some participants stated that the ability to practice privately reduced pressure. Others commented that hearing their own voice made them aware of features they needed to change. Several learners mentioned that repetition and imitation tasks felt "slow," "careful," or "methodical," and that this helped them focus on producing the target feature accurately. As one learner noted in a focus group, "I have to listen and watch the video again and again."

4.4. Functional Use Results

Participants consistently reported that functional use activities were more difficult than guided practice. Many stated that using target features in conversation required more attention and effort. Some described losing accuracy when they shifted their focus to meaning. Others noted that interacting with classmates made them more aware of how quickly they reverted to habitual patterns. Reflections and focus group discussions also showed that functional use activities highlighted which features they still needed to work on. This difficulty is reflected in one learner's comment during a focus group: "When we only watching, but don't practicing, maybe we forgot. We only listening, watching. That's all."

4.5. Reflection Results

Learners described reflection tasks as helpful for keeping track of their progress. In their written reflections, many students compared their performance across weeks and commented on small improvements they noticed. Others used reflections to describe ongoing difficulties or to set goals for the following week. Focus group and survey responses also indicated that recording commentary on their own speech made learners more attentive to pronunciation features in general. As one participant explained during a focus group, interactive work helped them "see where you need to improve" and "recognize your mistakes."

4.6. Summary of Learner Experiences Across the IDC Cycle

Across data sources, learners described each IDC phase as distinct. They also reported engaging with the phases in the order presented in the course. Most participants described the cycle as predictable from week to week and stated that they understood what each phase required. Although the nature of comments varied by phase, learners provided consistent descriptions of awareness building, perceptual work, controlled practice, communicative attempts, and reflective monitoring.

5. Discussion

The findings suggest that learners perceived the structured sequencing of the IDC as supporting their pronunciation development by helping them progress through successive instructional phases.

Beyond confirming the relevance of individual instructional components, the findings highlight the importance of sequencing. Previous research has established the value of awareness building, perceptual training, controlled practice, and guided practice in pronunciation instruction. However, these elements are often treated as separate techniques rather than as parts of an integrated process. In this study, learners described these components as interconnected and experienced them in a predictable order, suggesting that effectiveness depends not only on the activities used, but also on how they are organized over time (Wiggins & McTighe, 2005). The IDC contributes to this area by making this sequence explicit and grounding it in learner experience. This perspective complements existing pedagogical models such as Celce-Murcia et al. (2010) by emphasizing how learners experience these stages as a structured and recurring sequence. Although the participants in this study shared a similar linguistic background, the IDC is designed as a flexible framework that can be adapted to learners with different first language backgrounds by targeting pronunciation features that most directly affect intelligibility in each context.

A key contribution of the IDC is the inclusion of reflection as a core phase rather than an optional extension. Learners in this study used reflection to monitor their progress, identify persistent challenges, and connect weekly activities to their broader communicative goals. Their accounts indicate that reflection supported ongoing attention to pronunciation features beyond individual tasks. Although metacognitive awareness and learner self-monitoring have been discussed in prior research (Vandergrift, 2005; Vandergrift & Goh, 2012), the IDC addresses this by positioning reflection as an essential component of the learning cycle. In practice, this suggests that reflection should be explicitly integrated and scaffolded through guided prompts and structured opportunities for self-evaluation, rather than treated as an informal or optional activity.

The findings related to each phase align with existing research and clarify how these processes work together in practice. They reinforce the role of explicit instruction in directing attention to segmental and suprasegmental features that affect intelligibility (Derwing & Munro, 2015; Gilbert, 2008) and confirm the central role of perception in supporting production, consistent with prior research (Flege et al., 1999; Kissling, 2014). In addition, the results highlight the importance of controlled practice for developing accuracy before learners engage in spontaneous communication. These findings also point to a well-documented challenge in second language learning: the difficulty of transferring controlled practice to spontaneous communication. Within the IDC, the functional use phase serves as a critical point of diagnostic feedback, allowing learners to identify breakdowns that are not visible during guided practice.

The subsequent reflection phase appears to play an important role in addressing this gap by encouraging learners to revisit these challenges and re-engage with earlier stages of the cycle. For example, during communicative tasks, learners may successfully produce a target vowel in isolation but revert to a more familiar form when speaking under time pressure, resulting in unintended word substitutions (e.g., live for leave). Such moments provide immediate feedback on which features require further attention in subsequent cycles of practice through instructor feedback, self-recordings, and reflective activities.

These findings suggest that pronunciation development can be understood as a structured, cyclical process in which each phase supports the next. Rather than viewing pronunciation instruction as a set of isolated activities, the IDC presents it as a sequence that guides learners from initial awareness to communicative use and ongoing self-monitoring. For example, when teaching a vowel contrast such as /i/ and /ɪ/, instruction might begin with awareness activities that highlight how these sounds can lead to misunderstandings (e.g., leave vs. live). Learners would then complete perception tasks to distinguish the contrast, followed by guided practice through repetition and short recordings. Functional use could involve communicative tasks requiring spontaneous production of the target contrast, and reflection would allow learners to evaluate their performance and identify areas for improvement.

6. Conclusion

This study explored learner experiences with the IDC, a framework designed to support intelligibility-oriented pronunciation instruction. The findings show that learners engaged consistently with the five phases of the cycle and described each stage as contributing in distinct ways to their development. Their accounts provide qualitative evidence that pronunciation learning can be supported through a structured progression that moves from awareness to perception, guided practice, functional use, and reflection.

By organizing these processes into a coherent sequence, the IDC offers a practical framework for implementing principles that have been widely discussed in pronunciation research. Rather than treating

instructional techniques as isolated activities, the IDC emphasizes the relationship among phases and highlights the role of reflection as an integral part of learning. This structure allows teachers to design pronunciation instruction in a way that is systematic, transparent, and aligned with learners' experiences.

Although the study was conducted in a specific instructional context, the findings suggest that the IDC can serve as a useful model for organizing pronunciation instruction in settings that prioritize intelligibility as a central goal. Future research can extend this work by examining how the cycle functions across different learner populations, instructional formats, and timeframes, as well as by incorporating measures of intelligibility and comprehensibility to further evaluate its impact.

As pronunciation instruction continues to move away from native-like targets toward intelligibility, frameworks such as the IDC can help teachers support learners in developing clearer and more effective communication through a process that is structured, learner-informed, and grounded in established research.

The Author

Ivan Crespo is an ESL instructor at the University of Illinois Urbana-Champaign and a PhD student in Curriculum and Instruction. He holds an MA in Teaching English as a Second Language from the University of Illinois Urbana-Champaign and has more than 20 years of experience teaching English and pronunciation to adult learners. His research interests include pronunciation instruction, intelligibility, instructional design, and technology-enhanced language learning. He is particularly interested in connecting research and classroom practice and developing effective approaches to pronunciation teaching. His professional work also includes teacher education, curriculum development, and English language instruction for diverse academic and professional contexts.

References

Bradlow, A. R., Pisoni, D. B., Akahane-Yamada, R., & Tohkura, Y. (1997). Training Japanese listeners to identify English /r/ and /l/: Some effects of perceptual learning on speech production. *The Journal of the Acoustical Society of America*, *101*(4), 2299–2310.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Celce-Murcia, M., Brinton, D. M., Goodwin, J. M., & Griner, B. (2010). *Teaching pronunciation: A course book and reference guide (2nd ed.)*. Cambridge University Press.

Chan, K. Y., & Vitevitch, M. S. (2015). The influence of neighborhood density on the recognition of Spanish-accented words. *Journal of Experimental Psychology: Human Perception and Performance*, *41*(1), 69–79. https://doi.org/10.1037/a0038347

Derwing, T. M., & Munro, M. J. (2015). *Pronunciation fundamentals: Evidence-based perspectives for L2 teaching and research*. John Benjamins.

Felty, R. A., Buchwald, A., Gruenenfelder, T. M., & Pisoni, D. B. (2013). Misperceptions of spoken words: Data from a random sample of American English words. *The Journal of the Acoustical Society of America*, *134*(1), 572–585. https://doi.org/10.1121/1.4809540

Flege, J. E., MacKay, I. R., & Meador, D. (1999). Native Italian speakers' perception and production of English vowels. *The Journal of the Acoustical Society of America*, *106*(5), 2973–2987.

Gilbert, J. B. (2008). *Teaching pronunciation: Using the prosody pyramid*. Cambridge University Press.

Gilbert, J. B. (2012). *Clear speech: Pronunciation and listening comprehension in North American English (4th ed.)*. Cambridge University Press.

Jenkins, J. (2000). *The phonology of English as an international language*. Oxford University Press.

Kissling, E. M. (2014). What predicts the effectiveness of foreign-language pronunciation instruction? Investigating the role of perception and other individual differences. *The Canadian Modern Language Review*, *70*(4), 532–558.

Levis, J. M. (2005). Changing contexts and shifting paradigms in pronunciation teaching. *TESOL Quarterly*, *39*(3), 369–377.

Levis, J. M. (2018). *Intelligibility, oral communication, and the teaching of pronunciation*. Cambridge University Press.

Morley, J. (1991). The pronunciation component in teaching English to speakers of other languages. *TESOL Quarterly*, *25*(3), 481–520.

Moyer, A. (2014). Exceptional outcomes in L2 phonology: The critical factors of learner engagement and self-regulation. *Applied Linguistics*, *35*(4), 418–440.

Pickering, L. (2018). *Discourse intonation: A discourse-pragmatic approach to teaching the pronunciation of English*. University of Michigan Press.

Saldaña, J. (2025). *The coding manual for qualitative researchers (5th ed.)*. SAGE Publications.

Vandergrift, L. (2005). Relationships among motivation orientations, metacognitive awareness and proficiency in L2 listening. *Applied Linguistics*, *26*(1), 70-89. https://doi.org/10.1093/applin/amh039

Vandergrift, L., & Goh, C. C. M. (2012). *Teaching and learning second language listening: Metacognition in action*. Routledge.

Wang, X. (2022). Segmental versus suprasegmental: Which one is more important to teach? *RELC Journal*, *53*(1), 194–202. https://doi.org/10.1177/0033688220925926

Wiggins, G., & McTighe, J. (2005). *Understanding by design* (Expanded 2nd ed.). Association for Supervision and Curriculum Development.