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26 Integrating Pronunciation into the Language Classroom

LAURA SICOLA AND ISABELLE DARCY

Introduction

Few language students are fortunate enough to have a class that is dedicated to the sole focus of studying pronunciation, and even fewer are able to take such a class with a teacher who is genuinely knowledgeable about English phonology and pronunciation pedagogy. Pronunciation is frequently relegated to the occasional side lesson in the context of a broader oral communication course or omitted entirely from the curriculum. This unsystematic and infrequent approach to pronunciation is insufficient for many learners to orally convey their messages intelligibly and effectively. This chapter will begin by looking at challenges faced by many "regular" ESL/EFL teachers regarding teaching pronunciation to frame the subsequent suggestions made for making pedagogical connections between pronunciation and teaching the other skill areas (speaking, listening, reading, and writing) within a communicative framework. To further contextualize the suggested strategies, we review the theoretical underpinnings of the value of communicative tasks in pronunciation instruction in an effort to guide practitioners in making pronunciation targets an inherent part of every lesson.[1]

Challenges

Pronunciation difficulties in a second language (L2) can seriously impede intelligibility. Developing fluent speech and intelligible pronunciation plays a crucial role for L2 learners' social and economic integration, such as for L2 learners of English who live in an English-speaking environment. Lack of intelligible pronunciation is also accompanied by comprehension difficulties when L2 learners listen to spoken English.

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At the same time, the prospect of resolving pronunciation difficulties in the classroom presents a considerable challenge. This is mainly due to two reasons: (1) intelligible pronunciation is difficult to learn for most adults and (2) intelligible pronunciation is difficult to teach due to a lack of teacher preparation, limited availability of materials, and ineffective teaching. By "ineffective," we refer to either a heavily form-focused instruction (e.g., minimal pair drills) or an exclusively meaning-focused approach without explicit attention to phonological form.

The former, identified as a lack of contextualization of pronunciation instruction (Bowen 1972), is characterized by the exclusion of meaning integration, with no or little carryover from the classroom lesson to any external/spontaneous conversation and no integration of pronunciation targets into spontaneous speech. At the opposite extreme is an exclusive focus on meaning, favored by typical communicative language teaching methods. Exclusively meaning-focused instruction offers too few opportunities for repetition of familiar materials because of the primary allocation of attention to higher levels of information exchange (Segalowitz and Hulstijn 2005). Thus, sole reliance on this approach fails to foster automatization of phonological and phonetic processing in the L2.

In this chapter, we argue that making pronunciation targets an inherent part of every lesson could represent an effective solution to carryover and automaticity issues. However, there are three major challenges to integrating pronunciation teaching into the broader language classroom.

The first challenge is the lack of teacher training in pronunciation. Many teachers do not feel confident in their knowledge about pronunciation or in their ability to teach it (Foote, Holtby, and Derwing 2011). Often this is because they received minimal practical training in this area, if any, as many TESOL training programs incorporate little to no pedagogical training around pronunciation. Courses often offer a brief formal introduction to phonology on a theoretical level, but practical application is usually limited to activities such as transcribing recorded speech samples using the IPA. While this may provide teachers with a deeper understanding of English pronunciation, it does not provide them with an understanding of how to teach it. A related challenge is that, particularly in many outer/expanding circle countries (Kachru 2005), a number of teachers who are non-native speakers of English (NNSs) lack confidence in their ability to successfully model English pronunciation, perhaps feeling that their own pronunciation is too deviant from a "target-like" pronunciation. Non-native teachers in many countries often teach more "metalanguage-heavy" classes, i.e., teaching *about* English (grammar rules, vocabulary lists, etc.) but *through* their native language, thus providing very few opportunities for students to hear their teachers modeling spoken English. As a result, the cycle becomes self-perpetuating. Students who have only experienced L2 learning in an educational system that prioritizes the passing of standardized tests, and in a classroom context that is teacher-centered and primarily conducted in the L1 with little opportunity to hear or practice English pronunciation, later become English teachers in the same system and are likely to use similar teaching methods, all without acquiring and therefore using skills related to pronunciation instruction.

While a highly intelligible NNS teacher is an appropriate model, there are also many means by which NNS teachers can expose their students to various native-speaker models, by drawing upon an expanding number of resources, recordings, and other audio or audiovisual materials spoken by native speakers. Phonological differences between the NNS teacher's speech and that of native speakers clearly do not preclude the teacher from providing explanations and feedback, but many lessons may also contain recordings from native speaker utterances. It is beneficial to expose students to as high a number as possible of different native speakers' voices, so that their perceptual learning and listening skills become more robust (e.g., Bradlow et al. 1999).

The second challenge is that pronunciation is rarely assessed systematically in proficiency placement tests, whether in a community language program, a university-level intensive English program, or in a general primary or secondary school setting.[2] A problem is that pronunciation is difficult and time-consuming to assess objectively, and standardized tools are not yet available. It cannot be done via simple multiple-choice means and generally requires the audio-recording of a speech sample for later evaluation or for individual interviews to be conducted and assessed in real-time. Evaluators often do not have the phonological training to evaluate the samples and identify what targets to prioritize for particular students.

This holds an important implication in terms of integrating pronunciation into other language classes. No matter how much a program tries to group students by proficiency levels, overall proficiency or syntactic accuracy is not clearly correlated to phonological accuracy. Thus, students of varying pronunciation levels will be in the same classes, requiring teaching and assessment of pronunciation to be somewhat individualized. If this is the case, finding pronunciation lessons where the target form is selected to fit a well-defined "proficiency level" may be moot, since at any given moment, the students may need assistance producing a phonological target form that is inherently relevant to whatever other language forms and skills are being incorporated in the day's lesson. Darcy, Ewert, and Lidster (2012) did, however, outline areas of phonological targets that would be more appropriate to address with students of different proficiency levels, which can help the teacher prioritize the elements that are both developmentally suitable for different students and relevant to the other lesson objectives of the day.

The third challenge is related to a late introduction of specific pronunciation instruction, perhaps due to its perceived need for metalinguistic description, which requires specialized vocabulary and which may seem too advanced for beginning students to handle. A tendency common to many programs is therefore to make pronunciation an elective or an "advanced" class, instead of introducing pronunciation components in the early levels. We argue that it is essential for pronunciation to be introduced early, frequently, and as a regular component – large or small – of every lesson, avoiding metalinguistic or technical language in the early proficiency levels. Helping students perceive and produce more target-like pronunciation patterns from the start appears more effective than keeping students reinforcing non-target-like pronunciation over years, which then needs to be unlearned under greater effort. As Darcy, Ewert, and Lidster (2012) delineate

pronunciation as an instructional focus should be "embedded, both within the curriculum as a whole, and within each lesson locally: pronunciation is not taught separately from, but rather becomes an integral part of, general language instruction" (2012: 95). Our challenge, then, is to help practitioners identify ways to execute this call to action. To that end, we now look at ways in which teachers at nearly any level and in any context can incorporate explicit attention to phonological forms, both proactively and incidentally (Ellis, Loewen, and Basturkmen 2006) in the context of other language lessons throughout the day.

Before specifically discussing strategies and techniques to incorporate pronunciation targets into other areas, we review a communicative framework for teaching pronunciation (Celce-Murcia et al. 2010) as a potentially useful framework from which to draw specific pedagogical elements.

Form-focused communicative language teaching

One central component of developing fluency and accuracy in pronouncing the L2 is automaticity of phonological and phonetic processing. According to Segalowitz and Hulstijn (2005), typical methods that provide the repetition necessary for automaticity to develop fail to promote learning because of the highly decontextualized nature of the repeated materials (2005: 383); at the same time, exclusively meaning-oriented activities fail to provide the repetition necessary for automatization. Gatbonton and Segalowitz (1988: 478) suggest that it is possible to promote (phonological) acquisition through activities requiring a dual focus on both form and meaning, i.e., activities that are inherently repetitive yet genuinely communicative (see also Canale and Swain 1980). With practice, attention to form becomes automatized (Gatbonton and Segalowitz 1988; Trofimovitch and Gatbonton 2006). Applied to pronunciation, to ensure that attention to form is indeed maintained as learners focus more on meaning, there will ideally be a design feature that requires learners focus more on meaning, there will ideally be a design feature that requires accurate perception and/or production of the target form as essential to the successful completion of the activity (Loschky and Bley-Vroman 1993).

The communicative framework for teaching pronunciation outlined by Celce-Murcia et al. (2010) offers a way to achieve such an integration of form and meaning. It aligns pronunciation classroom practices with the tenets of communicative language teaching, in gradually shifting the scope of the focus of attention over the course of the work on a given topic. The framework defines five phases: 1. Description and analysis, 2. Listening discrimination, 3. Controlled practice, 4. Guided practice, 5. Communicative practice (Celce-Murcia et al. 2010: 44–49). Starting with a detailed focus on metalinguistic description and analysis, attention is gradually shifted towards incorporating more meaning, while retaining focus on the form. This is mainly achieved through a sequence of activities in which meaning becomes gradually more important, and for which corrective feedback is planned accordingly (Saito and Lyster 2012; Reed 2012).

One way to increase the likelihood that students fully engage in attending to both form and meaning is through the use of interactive tasks. "Tasks", as a subset of the more general "activities", have been defined in various ways. For our purposes, we draw from the work of Willis and Willis (2007) and Pica, Kanagy, and Falodun (1993). Willis and Willis define a task as an activity that (a) engages learners' interest, (b) has meaning as a primary focus rather than form, (c) requires completion, (d) has a specific outcome on which "success" is based, and (e) relates to the "real-world" (1993: 13). Pica, Kanagy, and Falodun's (1993) typology of tasks looks more narrowly at the features of a task that are most likely to maximize negotiated interaction between learners. This is achieved when a task requires participants to request and provide uniquely held information, seek clarification regarding L2 input that they do not understand, and modify their utterance when they receive similar clarification requests in response to their own interlanguage production, all with the aim of reaching a mutually understood and accepted communication goal. Accordingly, the overarching function of a genuinely communicative task is to have students engage in work that is authentic in its relationship to real-life events, the outcome of which is independent of the use of language for its own sake.

However, we see two main ways in which this framework can be applied to incorporate pronunciation targets into any language lesson. The teacher can either proactively select pronunciation targets around which to organize a lesson (see Sicola 2009 for a discussion of proactive selection of phonological target forms in the context of interactive communicative tasks) or he or she can systematically address pronunciation issues as they arise in students' authentic production while completing a task. Pronunciation becomes integrated when the successful task completion crucially *depends* on target-form accuracy.

Part of the challenge in proactively teaching pronunciation forms for students is that it is difficult to create authentically communicative, interactive activities, in which accuracy of pronunciation-related target forms (segmental or suprasegmental) is essential to successful task completion (Loschky and Bley-Vroman 1993). Sicola (2009) gives an overview of this challenge and demonstrates how her example of a map task combines the meaning-focused quality of communicative tasks with pre-selected phonological targets in a way that will produce target-form-related negotiated interaction among student participants so that target-form accuracy becomes essential to successful task completion. Within the communicative framework, Celce-Murcia and colleagues (2010) characterize such activities as "guided practice".

While this may be an ideal situation, such tasks are typically not readily available to most teachers and can be time consuming to design. However, there are ways to compensate for this gap and adjust task conditions so that negotiated interaction and attention to phonological target forms are promoted in the context of broader language tasks. Willis and Willis (2007) provide an extensive list of task types to be used with students of varying proficiency. These tasks do not need to be complex; they can be as straightforward as brainstorming, guessing games, memory challenges, sequencing, ranking, classifying, creating timelines and tables, etc. For more advanced levels, more complex types include problem-solving tasks, comparison and contrast analyses, creative story-telling, and projects. Their "task

generator" (2007: 108) offers a useful framework for incorporating any of seven categories of task types into language lessons on any particular topic or target form, all of which can be modified to meet the needs of specific proficiency levels. Importantly for our purposes, pronunciation targets can be woven into these tasks from the beginning. For example, when creating a timeline, ordinal numbers are a natural and useful construct (Loschky and Bley-Vroman 1993), and words such as *first, second, third, fourth*, etc., all include complex coda structures, which can be difficult for learners to pronounce, and thus attention to this issue can be included and reinforced throughout the task and lesson overall. By requiring the repetition of target forms in a variety of genuinely communicative, applied contexts, these tasks correspond to the ideal balance for automatization and carryover outlined by Gatbonton and Segalowitz (1988).

Pica, Kanagy, and Falodun's typology of tasks (1993) further describes the likelihood for different task types of maximizing the participants' negotiated interaction, and how to adjust task conditions in order to increase this likelihood, whether jigsaw tasks, opinion exchange tasks, or decision-making tasks. To the extent that language teachers can incorporate these tasks and criteria into their lessons, there is a much greater likelihood that learners will produce ample authentic language. As these tasks are intended to serve a greater communicative function, and are not typically pronunciation focused, teachers should be able to incorporate them into their lessons by helping students deliberately work to produce the target form more accurately as a step toward acquisition.

Using the communicative framework to integrate a pronunciation component into other lessons

In this section, we look at some ways in which pronunciation can be integrated with other areas, especially vocabulary, spelling, grammar, listening/speaking, reading, and writing. The suggestions are meant to be illustrative, not exhaustive.

Vocabulary

One area in which teachers working with any level, content, skill or population all share an excellent opportunity and obligation to address pronunciation is with the introduction of new vocabulary. We offer suggestions for helping students meet the challenge of learning target-like pronunciation of the lexicon.

One of the first things students focus on when learning new vocabulary is how the words are spelled. This gives the teacher an opportunity to address patterns of pronunciation and orthography (Celce-Murcia et al. 2010). The influence of spelling on *literacy* skills (word recognition, vocabulary learning, writing) is well known, but its influence on the emergent *sound system* is also important and should not be overlooked (Prator 1971; Escudero, Hayes-Harb, and Mitterer 2008). Spelling is often considered ancillary to other goals pertaining to vocabulary, syntax, or fluency development, yet addressing orthography can be a very important part of

developing intelligible pronunciation. While there are often exceptions, many simple patterns can be productively taught. More importantly, it is essential for teachers to recognize that some learners will attempt to make sense of the system whether they have help or not. Therefore, providing guidance and awareness will help students who make erroneous connections between graphemes and phonemes. Indeed, since learners have a disadvantage in inferring patterns because they lack native-like phonological awareness, mis-mapping is likely. By making it clear from the beginning that few rules apply without exceptions, confusion is not the most likely outcome. Gilbert (2001) and Celce-Murcia et al. (2010) provide many helpful suggestions for teaching connections between spelling and pronunciation. (For a thorough overview of the relationship between orthography and pronunciation, see Markham 1997 and Dickerson's Chapter 27 in this volume for strategies in explicitly using orthography to teach pronunciation.)

One example activity for beginning students is focusing on the different sounds associated with the letter <c> (/s/, /k/) in words such as *city* and *cat* respectively. The predictive rule is straightforward, with <c> pronounced as [s] before the letters <e>, <i> and <y> and [k] everywhere else. Of course, the same letter <c> when combined with other letters such as <h> is typically associated with a new sound /tʃ/ in words such as *child*. Like anything in English, there are exceptions to the pattern, but the regularity will help leaners connect what they see and what they say. Patterns can be addressed using words known to students and having them form categories first, before adding the new vocabulary into these categories. Using pairs or groups encourages students to make their hypotheses explicit and gives opportunities for corrective feedback and/or praise. Applying it to unknown words (such as vocabulary in subsequent readings) can help convince students of the usefulness of the activity.

Another example of a "learner-driven mis-mapping" and a useful pattern to learn is the pronunciation of <ay> and <ai>, which almost always represent [eɪ], but are typically misconstrued as [aj]. There are few exceptions to the rule in American English, such as the third person form *says* [sɛz]; the rest are mostly rare or unassimilated loanwords. Once students understand this pattern, they can use it to make the connection between words they know well, such as *today*, and new words they encounter, such as *allay* (which might initially be read – and even understood – as *ally* ['ælaj]), thereby improving students' independent ability to accurately predict and produce target-like pronunciation of new words.

From spelling, syllabification and stress patterns are a logical next step. Attention to lexical stress patterns, at least, should be an inherent part of the introduction of new polysyllabic words. Other factors related to lexical stress also play an important role in intelligibility (Benrabah 1997; Derwing, Munro, and Wiebe 1998; Field 2005; McCrocklin 2012; see also Derwing and Munro, Chapter 21, and Cutler, Chapter 6, in this volume), arguably because stress placement has a direct effect on phonetic production, such as in the words *democrat* (/ˈdɛ mə ˌkɹæt/) and *democracy* (/də ˈmɑ kɹə ˌsiː/). Because stress is largely a redundant feature in English, English listeners may perceive stress not only through length or pitch but also through segmental production.

Similar strategies can be applied to phrase-level stress, given that inappropriate stress assignment, either at the word or phrase level, may result in an unintelligible production (Derwing and Rossiter 2002; Zielinski 2008). Students might benefit from discovering that patterns they know from words (e.g., *today*) can also be applied to phrases such as *at work* or *at home*. This approach can then be extended to frequent phrases and syntactic chunks that have fixed stress patterns, such as *I wish I'd known* (Field 2014). Although explaining the meaning of words and phrases is important, such enriched vocabulary lessons that increase phonological awareness can help students to remember the words and phrases accurately. One possible way to implement this suggestion is to use the notation system proposed by Murphy and Kandil (2004) to identify stress placement in new words. Their system uses number sequences such as 3-2 to indicate the accentuation patterns. Words like *assessment* or *specific* have the same 3-2 pattern, where the initial number indicates the number of syllables and the second number indicates which syllable carries the primary stress.

These suggestions can be extended to content–area classes, whether Language for Specific Purposes (LSP) or a non-language focused class, such as a high school science class. Any of the above connections to pronunciation are still valid and should be incorporated when helping NNSs develop their overall academic or professional language proficiency. By nature, the classroom is a place in which the learning of subject-specific vocabulary and discourse styles is an expected result. To the extent that teachers are aware of the parts of speech represented, they could explicitly point out challenging segments and lexical- and phrasal-stress patterns in new vocabulary words and collocations.

For example, they can explain how suffixes influence stress placement using the example of words ending in *-ology*, which always receive primary stress on the first syllable of the suffix itself, as in *biology*. This is something most teachers can learn and they should hold the students and themselves accountable for producing the word with well-placed stress. This can be reinforced during any oral activities, ranging from times when students are reading aloud from a textbook or from their own compositions to open classroom discussion or more formal oral reports and presentations.

Grammar

There is unquestionably a link between some grammatical structures and pronunciation (Celce-Murcia et al. 2010). In surveying a range of student ESL textbooks, most of which were either speaking/listening-focused or integrated all four skill areas, we noted that several had explicit activities, instructions, or footnotes pertaining to the relationship between pronunciation and grammar. Most often this occurred in the context of introducing a new grammatical construct (or within the first few exercises), if the successful use of the target form was at least partly dependent upon its phonetic realization. This link should be made upon introducing these forms and reinforced whenever possible, once a form has been taught. For example, typically, the regular noun and verb endings *-s* and *-ed* are

inaccurately realized in spontaneous speech or in reading aloud, either by omissi (e.g., *places* being pronounced /pleɪs/) or erroneous addition of an extra syllat (e.g., *baked* being pronounced /ˈbeɪkəd/), along with errors in voicing of the fir consonant. This may be due to L1 coda or coda cluster syllable structure co straints, as well as lack of integrated knowledge of the allomorphic rules (Lardie 2003; Jiang 2007). Explicit instruction about the rules governing allomorphs th provides both sufficient opportunities for production of the target structure a corrective, form-focused feedback has been shown to help learners convert th explicit knowledge of rule-governed structures to spontaneous production (Re 2012; Yang and Lyster 2010).

Discussion of suffixes, whether inflectional or derivational morphemes, is natural connection to parts of speech. At more advanced levels, helping studer recognize the relationship between pauses, phrase-level stress, parts of speec and thought groups can lead to significant improvements in intelligibility (va Loon 2002). Feasibly, this relationship can be introduced to students at a lower pr ficiency level than van Loon's students, in a less metalinguistic way. By modeli and recasting simple patterns that incorporate the targeted grammatical form, tl teacher can draw students' attention to rhythm, pausing, and stress patter during oral practice of the activity.

Table 26.1 outlines some grammatical constructs in English whose successf oral application requires accurate, rule-based phonetic realization.

Speaking and listening

Pronunciation should play a central role in the development of oral skills, regardle of the specific focus of an activity (vocabulary, grammar practice, etc.). There is a inextricable link between speaking and listening: they are linked interactively, by nature oral activities require the message to be pronounced intelligibly and pe ceived accurately if they are to be completed successfully, and they are linked inte nally, as speaking and listening can serve as an auditory feedback loop, with student's speech serving as his or her own input (Reed and Michaud 2011).

The relationship between speaking and listening can also be viewed as mutually beneficial one in terms of acquisition: there is substantial eviden that improved perceptual/listening abilities can transfer to production/speakir (Rvachew, Nowak, and Cloutier 2004). For example, studies using high-variabili training paradigms have generally shown that in controlled laboratory conditio perceptual training can cause L2 learners to improve not only their perceptic but also, critically, their production of segmentals (e.g., Bradlow et al. 1999) ar even suprasegmentals (e.g., Wang, Jongman, and Sereno 2003). Conversel pronunciation practice can also help developing listening comprehension skill as suggested by Gilbert (1995). Specific empirical evidence is limited, but appears that learning to correctly realize word stress, vowel reduction, and wo linking patterns might help students segment fluent speech and recognize word more accurately in native speakers' utterances (Diane Poisson, personal commu nication, November 6, 2011).

Table 26.1 Grammatical forms with direct connections to pronunciation.

Grammatical form	*Pronunciation targets*	*Pronunciation-related example*
Past tense/past participle *-ed* Plural *-s* Third person singular *-s*	Allomorphic variation; simple and complex codas; extra syllable	walked /wɔkt/, agreed /əgɹiːd/, wanted /wɑntəd/ cats /kæts/, dogs /dɔgz/, horses /hoɹsəz/ eats /iːts/, seems /siːmz/, smashes /smæʃəz/
Contractions Content words versus function words	Reductions; simple and complex codas	does not /dəz 'nɑt/ → doesn't /'dʌznt/ I'll talk <u>to you</u> later. → /tə jə/
Nouns and verbs Compound nouns and descriptive phrases Compound nouns and phrasal verbs	Lexical stress	contract (n.) /'kɑːntrækt/ vs. contract (v.) /kən'trækt/ (the) '*White* House (where the US president lives) versus (any generic) white '*house* '*print*-out (cn) versus print '*out* (something) (pv)
Suffix patterns and parts of speech		Words ending with *-ic* (adj.) always stress the penultimate syllable, i.e., the syllable prior to *–ic*. E.g., demo'cratic, sym'bolic, eu'phoric, syste'matic
Questions: giving someone a number of choices Asking for new information versus clarification Tag questions: inquiry versus accusation	Intonation	Do you want cake/ or ice cream\? (choose one of the two) Do you want cake/ or ice cream/? (either, neither, or both) What time is the meeting\? (first inquiry) What time is the meeting/? (clarification or confirmation) You're not coming to the party\, are you/? (inquiry) You're not coming to the party\, are you\? (accusation)
Correction and emphasis	Phrasal stress	– "I think the plane lands at three *o'clock*." – "No, I heard it lands at *four* o'clock."
Clauses, thought groups	Pausing, rhythm, intonation	My *daughter* <u>who likes to *swim*</u> is having a *POOL* party.\ (necessary information, as opposed to another daughter who does not like to swim) My *daughter*, (.) <u>who likes to *swim*</u>,(.) is having a <u>*POOL*</u> party.\ (useful but unnecessary information about the daughter)

Listening should be viewed as an interactive and interpretive process, rather than a passive one (van Loon 2002; Murphy 1991). Empirical evidence shows that active listening tasks that direct students' attention to noticing more nuanced details of pronunciation can be more effective than only oral practice activities in helping students to develop more target-like pronunciation (Counselman 2010; Pennington and Ellis 2000). The possible benefits of this practice may be further magnified by engaging learners in directed listening to their own speech.

Recording technology can be useful to facilitate such active listening activities (see Hincks' Chapter 28 in this volume). Even if students do not have access to a computer laboratory equipped with high-performance technology or advanced speech analysis software, most students are able to record and listen to their own speech with portable devices (e.g., smartphones or iPods). This enables them to listen to and analyze their speech more objectively rather than trusting their memory of what they said or how they said it. The teacher can then fruitfully draw their attention to certain target forms and features as they actively listen for areas of successful improvement and collaboratively set new goals for learning.

Reading and writing

One of the classroom practices with which many students have a "love–hate" relationship is reading aloud. On the one hand, all of the required text is already present in a target-like form, so there is less risk of making a grammatical or lexical error. Without needing to allocate cognitive resources to those issues, students are more able to attend to their pronunciation (Robinson 2001). On the other hand, reading aloud puts additional pressure on students to use more accurate pronunciation in front of the rest of the class. As previously mentioned, the complex relationship between orthography and pronunciation can both promote and inhibit target-like production while reading aloud. For example, the written symbols may remind students to produce sounds that they might otherwise forget when speaking freely, e.g., seeing the digraph <th> may remind them to produce the sound /θ/ (as in *think*) or /ð/ (as in *they*). Conversely, it is likely that the irregular spelling patterns of English will mislead students to mispronounce even known words (Levis and Barriuso 2012; Sicola 2009).

Because reading aloud is one of the most common activities experienced in the classroom, it offers a frequent and consistent opportunity for the teacher to draw students' attention to pronunciation. For instance, the teacher can include a reminder as part of the instructions or have students silently pre-read a passage in order to scan for and underline any words that include particular letters and combinations (e.g., <c>, <ough>, <ic>) and noun and verb endings, such as the plural *-s* or past tense *-ed*. (The fact that students often fail to articulate these endings even when reading from the printed word right on the page is evidence that their failure to use these forms correctly in conversation may be a phonological issue rather than a grammatical one.) Slightly more complex would be having students use their metalinguistic knowledge of which words or parts of speech carry most meaning and how to identify clause boundaries and thought groups in order to

mark the text accordingly in preparation (van Loon 2002; Reed and Michaud 2005). This pre-reading can also serve to address many other pronunciation topics and should become a routine in the classroom.

Since learners initially have difficulties processing form and meaning at the same time (Doughty and Williams 1998), such a pre-reading opportunity can also have a more multifaceted positive effect in that it will help learners process the meaning of the passage prior to reading it aloud. Once they have gained some familiarity with words and broader meaning, they are more likely to be able to include more target-like pronunciation, and the marks serve as visual cues to remind students to attend to segmental and/or suprasegmental details of those targets when they encounter them during the subsequent read-aloud. This progressive training in attending to both meaning and form at once is also likely to trigger more carryover and potentially narrow the gap between the learner's pronunciation patterns during "formal" read-aloud and "informal" free-speech activities (Archibald 1998; Major 1987; Segalowitz and Hulstijn 2005).

Teaching writing also provides opportunities to teach and practice a wide range of pronunciation targets, which can and should be incorporated regularly. For this purpose, we can group writing efforts into two broad categories, which we will refer to as "mechanical" writing skills and "discourse" writing skills. Mechanical writing skills include learning to form L2 symbols, i.e., letters and characters, if the L2 script is different from the L1 script; spelling and word construction; and sentence-level writing, typically to practise particular syntactic structures or vocabulary items. Discourse writing skills are at the composition level, creating paragraphs and beyond, and putting one's own thoughts into more extensive L2 text.

Starting with mechanical skills, particularly when working with beginners, basic assignments such as "write each character/word five times" are common. Pronunciation can be incorporated by having students name the symbols or the sounds they represent while the teacher monitors the assignment in real-time in the classroom. Even when reviewing basic assignments by comparing their work with a partner's, they can read their own or each other's work aloud and ultimately come to an agreement on whether or not the symbols, words, or answers are correct, a task characteristic that also maximizes negotiated interaction and provides more opportunities for attention to form (Pica, Kanagy, and Falodun 1993), including phonological targets.

Discourse writing skills frequently require engaging in some or all of the stages of the writing process, which may include tasks such as prompt-deconstruction, brainstorming, organizing and outlining, drafting, sharing and read-aloud, peer review, revision, editing, and finally publication (Williams 2003). The majority of these stages include opportunities for collaboration, thereby shifting the mode of learning from singularly text-based to oral exchange, enabling the incorporation of a variety of pronunciation targets. For example, interpreting a writing prompt collaboratively requires students to deliberate and reach an agreement, a good opportunity to practise suprasegmental strategies for clarification requests and making contrasts. Brainstorming gains momentum when done in groups and is a perfect context for list-intonation patterns, for example; similarly, narrative storytelling

as a pre-writing stage also requires attention to suprasegmental features th delineate thought groups (Levis and Grant 2003). Next, organizing the subseque outline by deciding what brainstorm items to include and how to place them in t outline once again requires students to negotiate in order to reach an agreeme Debate would require contradiction and contrast, which become clearer and mc powerful when spoken with correct intonation patterns. Sharing drafts can then done once again by reading the compositions aloud to peers, rather than exchangi papers and reading them silently. Thus, at the very least, in the course of the discussions, the teacher can address pronunciation issues as they occur or c proactively weave in a deliberate focus on a relevant pronunciation target form

Pronunciation in other content-area lessons

An increasingly common scenario in the United States and many other countri is the situation of younger immigrant, exchange, and otherwise international st dents of varying English proficiency levels enrolling in PreK-12 public schoo vocational/trade schools, and other educational programs in which there is oft little or no formal ESL instruction or faculty trained in L2 pedagogy. Elementa school teachers who have self-contained classes and teach all subjects to their st dents and secondary or tertiary teachers of mathematics, science, art, economi and other content areas are often the students' only source of formal guidance f language development. Academic literacy in any subject includes not only conte knowledge but also the ability to *intelligibly communicate* one's understanding that content. Teachers of all subjects need to recognize their agency in studen subject-specific language development, as well as the importance that target-li pronunciation plays therein. In considering this responsibility and how it wou ultimately influence their teaching, we hope teachers will consider the vario strategies and rationales we have offered, such as those pertaining to vocabula development, for example, and find ways to incorporate them regularly into the lesson plans and student achievement expectations and outcomes.

Conclusion

Pronunciation is a very important component of oral communication and just li the other components of language it should be taught as part of an integrate interdependent system. Pronunciation skills are interconnected with other are such as listening comprehension, reading and writing, and grammar. Given the interconnections, it is crucial to address the pronunciation needs of students at early stage and throughout the curriculum. In fact, improved pronunciation m help – and, conversely, persistently non-target-like pronunciation may interfe with – students' performance in all other areas of the curriculum.

It is our hope that this chapter will encourage practitioners and program admi istrators to recognize that pronunciation needs of students are best addressed acrc all curriculum areas; ideally, students' ability to recognize the relevance of pronunciati

across contexts is essential for their optimal success as L2 users. We hope to have encouraged practitioners to consider pronunciation as an integral part of L2 learning by having demonstrated that it is feasible to weave pronunciation targets into every lesson regardless of skill area. Preferred activities ideally combine a communicative purpose while promoting automaticity of phonological processing, a combination that is likely to enhance the effectiveness of pronunciation instruction.

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NOTES

1 We understand that different teaching contexts will make it more difficult for some teachers to implement certain suggestions relative to others. Our goal is to demonstrate possibilities for connecting theory and practice in the hope that practitioners will adapt these ideas and examples in ways that can be best implemented in their own classrooms.

2 Of note, there are a number of university programs that do assess *global* speaking and listening skills upon enrollment (e.g., Michigan State University, University of Michigan, University of Iowa, Indiana University) and some also include a specific pronunciation rubric in their diagnostic assessments for incoming international freshmen, such as the Indiana English Proficiency Exam (Indiana University). Some Intensive English Programs also include specific pronunciation assessments (e.g., University of Iowa, Indiana University). For K-12 English learners, English proficiency placement tests may also include global speaking and listening rubrics (see http://www.doe.in.gov/sites/default/files/elme/el-guidebook-10-29-13.pdf for an example).

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