Chapter 11
Articulatory Phonetics: English Consonants

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ABSTRACT
The main focus of this chapter is to present the articulatory description of English consonants and provide practical guidance on how to teach the consonant phonemes to ELLs. The chapter starts with the introduction of phonetics as a subfield of linguistics. The concepts such as phonemes, contrastive versus non-contrastive sounds, the branches of phonetics that study different aspects of human speech sounds, and two different types of phonemes—consonants and vowels—are introduced in this section. Next, the reader is familiarized with the International Phonetic Alphabet, which is a system of phonetic transcription. The chapter further presents the description of the vocal tract and explores the classification of English consonants according to their place and manner of articulation, and voicing. Some implications from the introduced phonetics theory for teaching phonics, phonemic awareness, and spelling to young ELLs, and pronunciation to adult English learners, as well as a set of recommendations for effective phonetics instruction for ELLs are discussed to conclude the chapter.

WHAT IS PHONETICS?
Phonetics is a branch of linguistics that studies individual speech sounds in a human language. These speech sounds are also known as phonemes. The word phoneme is derived from the Greek word φώνημα (phōnēma), meaning sound produced. It is not coincidental that the words phonetics and phoneme share the same root – phone – which means voice or sound, as phonetics is the study of minimal units of sound – phonemes.
There can be two different types of sounds – contrastive and non-contrastive sounds – in every language. Phonemes are contrastive or discrete speech sounds which means that they can result in a change in meaning. For example, the words *pat* and *bat* are two discrete words with distinctive meanings because they have different initial phonemes that are included in the phoneme inventory of the English language. While phonemes cause a difference in meaning, non-contrastive sounds, known as *allophones*, do not distinguish meaning of words and are “perceived as the same sound despite the physical difference” (Finegan, 2008, p. 109). Note that a sound perceived as a functionally distinct phoneme in one language can serve as an allophone in another language, or vice versa. For example, the English sound /ð/ represented by the digraph *th* in words such as *then*, *they*, or *those* differs from the sound /d/ as in *den*, *day*, or *doze*. Thus, /ð/ and /d/ function contrastively or occur in contrastive distribution in English. However, /d/ and /ð/ are non-contrastive in Spanish since these two sounds occur in complementary distribution and serve as the allophones of the same phoneme /d/ in such words like *día* (*day* in English) pronounced like /dia/ and *codo* (*elbow* in English) pronounced like /koðo/. For more information on the pronunciation of allophones, or contrastive as well as complementary distribution, refer to Chapter 13.

Phonetics has three branches each of which concentrates on different aspects of studying speech sounds in human languages. **Articulatory phonetics** is the study of how the speech or vocal organs are used to produce sounds. **Acoustic phonetics** deals with the physical properties of speech sounds. **Auditory phonetics** studies the perception of speech sounds by humans.

This chapter focuses on articulatory phonetics, more precisely, the articulation of English consonants. Contrastive sounds or phonemes of English are divided into two groups – **consonants** and **vowels**. Note that the terms consonant and vowel do not refer to the letters that represent them, but to the types of sounds that are produced (Fromkin, Rodman, & Hyams, 2014). For example, the letter *y* can function as a vowel sound in the words such as *very* /ˈvɛɹi/ or *myth* /mɪθ/, but as a consonant in *yellow* /ˈjɛloʊ/ or *young* [jʌŋ]. The difference between these two fundamental sound types lies in the obstruction involved during the articulation of these sounds. The production of consonants involves some obstruction of the airflow in the vocal tract. Whereas the articulation of vowels, which will be covered in the next chapter, involves little or no obstruction of the airstream in the vocal tract.

In order to acquire the knowledge of English consonants and their adequate pronunciation, it is highly beneficial to recognize and be able to read the phonetic symbols used to represent these phonemes. Moreover, understanding the functions of the articulators involved in the production of consonants as well as knowing the articulatory features of each English consonant will also be helpful in avoiding pronunciation errors and consequently, attaining intelligible English pronunciation. The following sections of this chapter will introduce consonant phonetic symbols and the articulators involved in sound production, present the articulatory aspects of English consonants, and discuss the implications for teaching English consonants to language learners.

**THE INTERNATIONAL PHONETIC ALPHABET**

Before delving into the articulatory classification of consonants in English, this chapter will introduce the **International Phonetic Alphabet** (IPA) which will assist readers in understanding the symbols used in the Phonetics and the Phonology units of this book. IPA is a system of phonetic transcription that was first published in 1888 by the International Phonetic Association in France (Burleigh & Skandera, 2016), and since then, it has been revised many times, with the most recent version published in
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