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Teaching And Understanding Phonemic Awareness And English Learners

Jennifer L. Wold
Hamline University

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TEACHING AND UNDERSTANDING
PHONEMIC AWARENESS AND ENGLISH LEARNERS

by

Jennifer L. Wold

A capstone submitted in partial fulfillment of the requirements
for the degree of Master of Arts in English as a Second Language.

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Primary Advisor: Trish Harvey
Content Reviewer: Judy Croegaert

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CHAPTER ONE

Introduction

The sounds in any given language can be unique. While North American English (NAE) possesses several sounds not found in other languages, other languages possess several sounds that do not exist in NAE. In order to fully function in a new language environment, it is necessary for a language learner to acquire all the sounds of the target language. Think of it this way: can a language learner communicate effectively if she cannot produce the sounds of the target language? Can a language learner understand what is being said if she cannot differentiate the new sounds from the sounds of her native tongue? If not, this has marked implications for English learners (ELs) in the United States and makes learning a language more than simply vocabulary and syntax. In addition, it is questions like these that led to the research question that inspired this paper: *Why is phonemic awareness important for English learners (ELs) and how can it be developed?* This chapter introduces the issues associated with acquiring and distinguishing the sounds of a language, which is referred to here as "phonemic awareness."

Researcher Background and Interest

My first encounter with the concept of phonemic awareness was a personal one. Like many English as a Second Language teachers, I was realizing the dream of teaching abroad in a foreign country: Thailand. In the end, however, I think I learned more about what it is like to be a language learner than a teacher. My husband and I began Thai language lessons soon after our arrival. We learned that Thai is a tonal language, which

meant that if we raised or lowered our voices while speaking, we may significantly change the meaning of the message we are trying to convey. Thai also has several sounds that do not exist in English, and those sounds can also take on one of five different tones. I will never forget our Thai teacher trying to get us to repeat one of those sounds after her. It was clear by the expression on her face that we were not producing the sound correctly, though to our ears we sounded just like her. We never did manage to master that new phoneme before moving back to the United States.

Fast forward a few years, and I am now standing in front of a beginning high school EL class in the rural Midwest. When I look out, I see immigrants from Latin America and former refugees from East Africa and Southeast Asia. What do they all have in common? They lack the ability to distinguish some of the sounds in English, especially vowels. Lacking specific training in this area, I begin how my Thai teacher began: repeat after me. When this does not work, I decide to try some "ear training" activities, as I called them. I say a word out loud, and students work with a partner to write the word they hear on a mini-whiteboard. When students are done writing they hold their mini-whiteboards in the air for me to see. "No, that's not it. Listen again," I say. When that still does not work, I try some materials out of a few phonics books I picked up at a garage sale ("Great for English Learners!" is displayed on the cover, so they have to be good). When those do not work, I give up and move on. "Maybe it's not so important," I think to myself.

A few years after that teaching experience, I took a new job. This time I work with ELs at an elementary school about thirty miles west of the last one. The vast

majority are native speakers of Spanish, and some were even born in the United States. Yet what do they all have in common? They lack the ability to distinguish some of the sounds in English, especially vowels. One key moment that stands out in my mind is when I was discussing a ship while working 1-on-1 with a student. The student looked so confused that I finally drew a ship on the whiteboard behind me. "Oooh," the student blurted out, "I thought you were talking about *sheep*." In a nutshell, many of my students, kindergarten through twelfth grade, lag in their ability to properly hear and produce the sounds of English, and perhaps as a result, they also struggle with decoding and score below grade level on standardized reading assessments.

This realization forced me to think about my role in teaching the sound system of English, which I later learned to refer to as a skill called "phonemic awareness." Phonemes are the individual sounds of a language, and phonemic awareness refers to the ability to hear, isolate and manipulate phonemes in spoken or written words (Peregoy & Boyle, 2000). Clearly, these students were either not gaining these skills from their mainstream classrooms, or they began schooling in the United States at a grade level where these skills are no longer explicitly taught. I began to consider that teaching these skills was truly important and began to wonder what happens to students who never acquire them? Rather than find out by letting my students fall further behind, I decided it would be a better idea to look at the research to discover its true importance and find out how to effectively teach these skills. The "repeat after me" approach does not work as a stand-alone teaching strategy, and unlike my short-term experience learning Thai, EL

students in the United States must acquire the sounds of English in order to fully function in U.S. schools and society.

Preview of Literature

When I made the decision to finish my master's degree in Teaching English as a Second Language, I was fortunate to be required to take a class called Phonetics and Phonology. This is the class where I was finally able to move past "repeat after me." I learned about the physicality of producing sounds and how to demonstrate and describe them to students. I learned specific strategies for teaching and practicing the sounds of English, and I learned how to assess the specific needs of students. A description of the relevant strategies will be found in Chapter 3.

When I decided that I wanted to take my knowledge and skills in this area even further, I chose phonemic awareness as the topic of study for my master's degree paper and project. The research found in Chapter 2 confirms what I already thought I knew from experience: phonemic awareness is a foundational skill that leads to reading achievement (Cunningham, 1990; Leafstedt, Richards, & Gerber, 2004; Lipka & Siegel, 2011; Yaghoub Zadeh, Farnia & Geva, 2010). Hence, ignoring phonemic awareness skills or giving up after failing to teach them is no longer an option. I am arming myself with the knowledge and strategies to teach phonemic awareness effectively. It is my hope that this project will also provide any teacher both a place to begin and a foundation for applying the strategies to other contexts.

Summary

Acquiring the sound system of English is important for ELs to be able to communicate effectively, understand the world around them, and develop their literacy skills. In my experience, the majority of ELs are not simply acquiring these skills through mere exposure to the English language in schools. If they were, then my current students who were born in the United States and started their education in English at the preschool level should have thoroughly developed phonemic awareness skills. Yet, they do not. Thus, providing explicit phonemic awareness instruction to ELs is necessary.

The project completed in conjunction with this paper is a curricular unit aimed to teach native speakers of Spanish who are learning English (L1 Spanish L2 English learners) to distinguish the sounds /i/ and /I/. It is my goal that the process and strategies used to create this curricular unit will be adaptable and applicable to any phoneme distinction, though knowledge of the physicality of various phoneme production may be required.

Chapter Overviews

Chapter 2 provides a review of literature regarding phonemic awareness and ELs. It also compares and contrasts English and Spanish vowel systems in order to build an understanding of how learning the sound system of a new language can present real challenges. Next, the chapter will look specifically at the /i, I/ contrast and transition to instructional approaches gleaned from the literature.

Chapter 3 provides a description of the curricular unit completed in conjunction with this paper. It begins by describing the setting and participants before delving into the instructional approach and a sampling of key strategies used within the curriculum.

CHAPTER 2

Literature Review

The research question underlying this literature review is as follows: *Why is phonemic awareness important for English learners (ELs) and how can it be developed?* The cumulative answers to this complex question will contribute to the development of a curricular unit intended to teach L1 Spanish L2 English learners to distinguish between the /i/ and /I/ phonemes, which are distinct phonemes in English but not in Spanish. To achieve this, four topics will be presented as follows: Phonemic Awareness of ELs, English and Spanish Vowel Systems, /i/ and /I/ as Distinct Phonemes, and Phonemic Awareness Instruction.

The first topic, Phonemic Awareness of ELs, is intended to provide a general overview of existing research on the topic. It is here that you will find a succinct definition of phonemic awareness, including how it relates to the broader topic of phonological awareness. You will also learn about how phonemic awareness has been considered a necessary skill for reading achievement and can be developed independently of language proficiency.

The second topic, English and Spanish Vowel Systems, will provide an overview of how the vowel systems of English and Spanish compare and contrast. This knowledge is essential for building an understanding as to why so many L1 Spanish L2 English learners struggle with English vowels as presented in speech and written text.

The third topic, /i/ and /I/ as Distinct Phonemes, focuses on one specific area of difficulty for L1 Spanish L2 English learners. This topic will include a physical, visual,

and auditory description of the two phonemes. It will also include a discussion on how L1

Spanish L2 English learners initially perceive the two phonemes and the stages of

development that have been observed through research.

The final topic, Phonemic Awareness Instruction, will present information from

research that will inform the writing of a curricular unit aimed to teach L1 Spanish L2

English learners to distinguish between the /i/ and /I/ phonemes, which is the culminating

goal of this capstone project. It will not present specific teaching strategies (those will be

described in Chapter 3); instead, it will discuss the type of instruction that has been found

to be effective for the teaching of phonemic awareness as well as what research says a

curriculum aimed to teach phonemic awareness should include.

Phonemic Awareness of English Learners

What is phonemic awareness? Phonemic awareness refers to the ability to hear,

isolate and manipulate phonemes in spoken or written words (Peregoy & Boyle, 2000).

Phonemes are the individual contrastive sounds in a language, and English has 44 of

them (Phonological and Phonemic Awareness, n.d.). Although there are only 26 letters in

the alphabet used by native English speakers, a single letter can represent more than one

phoneme. For example, consider the sound the letter "a" makes in the following words:

apple, acorn, always. Although these words appear to have the same beginning sound

orthographically, each beginning letter "a" represents a different and distinct phoneme in

English. Using the International Phonetic Alphabet (IPA), which has a 1:1 sound/symbol

correspondence, the phonemes that begin each of the words appear as follows: /æ/pple,

/e/corn, /ɔ/lways. Additionally, a combination of letters can also represent one phoneme.

Consider the "th" sound in the word "thin." The two letters "t" and "h" are combined to form one phoneme, or sound, which is represented in the phonetic alphabet as /θ/. A student with excellent phonemic awareness skills would be able to hear that the word "thin" has three phonemes and would be able to isolate them as such: /θ/, /I/, /n/. This same student, if asked, would also be able to manipulate the phonemes by substituting the /f/ phoneme for the /θ/ phoneme, for example, to create a new word: fin.

Phonemic awareness is often studied in combination with at least one broader skill: phonological awareness. While phonemic awareness refers to individual sounds, phonological awareness includes larger units of oral language such as full words, syllables, onsets and rimes, and rhyming words (Phonological and Phonemic Awareness, n.d.). Yopp (1988) added that phonological awareness skills are measured by a child's ability to identify and produce rhyming words as well as segment, blend, and delete sounds in a given word, as cited by Lipka and Siegel (2011). While the addition of phonological awareness may seem beyond the scope of this literature review, phonemic awareness can be considered a subset of phonological awareness. Thus, studies using the term "phonological awareness" are also referring to phonemic awareness in addition to other broader skills. Lipka and Siegel (2011) described phonological awareness as an assortment of skills, including the ability to segment speech at the phoneme level as well as larger units of sound such as syllables.

The role of phonemic awareness in building literacy. Strong literacy skills, such as the ability to comprehend a wide range of texts at a high level, are necessary for success in today's society (Lipka & Siegel, 2011). In 2005, Perie, Grigg, and Donahue

discovered through the National Assessment of Educational Progress that 26% of

students in the eighth grade were not proficient enough to read materials necessary for

day-to-day living and 68% of secondary students failed to test at levels deemed proficient

(Lipka & Siegel, 2011). The attainment of such high-level literacy skills is an even

greater challenge for students in the United States who have a first language other than

English (Lipka & Siegel, 2011). Given the social and economic opportunities associated

with reading proficiency, literacy is among the most important skills a student can attain

(Peregoy & Boyle, 2000).

Skills associated with phonemic and phonological awareness have been shown to

contribute to successful reading comprehension skills (Lipka & Siegel, 2011; Yaghoub

Zadeh, Farnia & Geva, 2010). This claim stands for both monolingual students (Cain,

Oakhill, & Bryant, 2000) and for English learners (Carlisle, Beeman, Davis, & Spharim,

1999; Manis, Seidenberg, & Doi, 1999; Proctor et al., 2005; Verhoeven, 2000), as cited

by Yaghoub Zadeh, Farnia, and Geva (2010). In addition, students can begin to develop

their phonemic and phonological awareness skills at any level of language proficiency

(Leafstedt, Richards, & Gerber, 2004). This implies that even students who are

completely new to English can immediately begin building their English-language

literacy skills through phonemic and phonological development.

It is important to keep in mind that phonemic awareness is not, in and of itself, a

reading skill. It is an auditory and articulatory skill that leads to the development of

reading skills such as decoding and comprehension (Farnia & Geva, 2010; Lipka &

Siegel, 2011; Yaghoub Zadeh). Hence, the development of phonemic awareness does not

actually involve reading anything at all, though a more effective curriculum would include an application of the skills (Cunningham, 1990).

Several studies have demonstrated the link between articulation, or accuracy of pronunciation, and phonemic awareness skills in students' first language, however there is a distinct lack of research in this area for ELs (Roberts, 2005). Though one may conclude that this association should easily apply to ELs due to the L1 influence on English pronunciation, the subject is still the topic of ongoing debate (Roberts, 2005). That noted, instructing ELs on pronunciation and articulation should not be ignored due to many factors including the potential link to reading achievement. In addition, Munro and Derwing (1995) argued that for students who wish to enter fields such as business or medical, a certain amount of intelligibility must be achieved in order to avoid communication errors, as cited by Meléndez-Ballesteros (2014). If a student has not yet acquired the English phonemes that vary from those of her L1, then becoming competent in phonemic awareness would be much more of a challenge (Roberts, 2005).

English and Spanish Vowel Systems

Before discussing how new phonemes in an L2 can be acquired, it is essential to understand how the phonemes in the L1 and L2 differ. The focus here will be on how the North American English (NAE) and Spanish vowel systems are similar and different. This will provide a context for the subsequent discussion on the /i, I/ distinction and project description in Chapter 3. For the purpose of this discussion, the focus will be on the "simple" vowels in both English and Spanish. This includes vowels with or without

an adjacent glide (such as vowels with a /y/ or /w/), but does not include diphthongs, which is the combination of two simple vowel sounds.

      The simple vowels of English. North American English (NAE) has at least 11 simple vowel sounds, though that number may vary when various dialects are taken into account (Celce-Murcia, Brinton, & Goodwin, 2010; Morrison, 2006). Orthographically, however, these 11 sounds are traditionally represented by only five letters: a, e, i, o, and u (Celce-Murcia, Brinton, & Goodwin, 2010), though NAE has various spelling patterns for each phoneme. See Table 1 for examples of each simple vowel phoneme of English and some of the various ways those sounds can be represented orthographically in English.

Table 1. The 11 Simple Vowels of English

	Phoneme	Examples
1.	/i/	s<u>ee</u>, m<u>ea</u>t, m<u>e</u>, <u>e</u>qual, p<u>ie</u>ce, th<u>e</u>me, pol<u>i</u>ce
2.	/I/	s<u>i</u>t, qu<u>i</u>t, m<u>y</u>th, s<u>y</u>mpathet<u>i</u>c
3.	/e/	g<u>ai</u>n, s<u>ay</u>, s<u>a</u>me, <u>ei</u>ght, <u>a</u>corn, ball<u>et</u>, caf<u>e</u>
4.	/ɛ/	p<u>e</u>n, br<u>ea</u>d, s<u>ai</u>d, fr<u>ie</u>nd, m<u>a</u>ny
5.	/æ/	h<u>a</u>t, <u>a</u>pple, b<u>a</u>th, <u>a</u>fter
6.	/ɑ/	c<u>o</u>t, sp<u>a</u>, mass<u>a</u>ge
7.	/ʌ/	<u>u</u>nder, bl<u>u</u>nder, s<u>o</u>n, m<u>o</u>nth
8.	/ɔ/	b<u>ough</u>t, c<u>augh</u>t, s<u>ough</u>t, s<u>aw</u>, <u>a</u>lways
9.	/ow/	c<u>oa</u>t, d<u>ough</u>, s<u>ew</u>, m<u>ow</u>, h<u>o</u>pe
10.	/ʊ/	c<u>oo</u>k, c<u>u</u>shion, w<u>o</u>man, c<u>ou</u>ld
11.	/uw/	m<u>oo</u>d, cl<u>ue</u>, gr<u>ou</u>p, d<u>o</u>, r<u>u</u>de, cr<u>ui</u>se, j<u>ew</u>el

Adapted from Celce-Murcia, Brinton, & Goodwin (2010, p.115) with additional examples from Typical Spelling Patterns for Vowel Sounds (n.d.)

The phonemes listed in Table 1 can be demonstrated using the examples

provided; they may also be described physically. Roberts (2005) described the physical

traits of the production of phonemes as "articulatory gestures." In fact, according to

Roberts (2005), the articulatory gestures may be more helpful to students in forming a

significant connection to phonemic awareness and beginning word reading. Liberman

and Mattingly (1985) (as cited by Roberts, 2005), produced experimental evidence that

showed that if an EL cannot differentiate between two distinct English phonemes, such as

/i/ and /I/, it is not enough to simply continue demonstrating the sounds with various

examples, as creating a new distinction between phonemes cannot be acquired in this way

alone. Instead, providing the student with knowledge of how to produce the articulatory

gestures physically is likely to be a more effective approach (Roberts, 2005). For the

purposes of the current project, both examples contrasting the sounds and articulatory

gestures will be taken into consideration.

The vowel phonemes represented in Table 1 can be distinguished physically in a

number different ways. First, they may be described by which part of the tongue is used

in the production of sound: front, central or back (Celce-Murcia, Brinton, & Goodwin,

2010). For example, if you vocalize the phonemes /i/ and /uw/ in rapid succession, you

should feel your tongue switch from the front to the back of your mouth. Secondly, the

phonemes may be described based on the height of the tongue when articulated: high,

mid, or low (Celce-Murcia, Brinton, & Goodwin, 2010). For example, if you vocalize the

phonemes /i/ and /æ/ in rapid succession, you should feel your tongue move from high to

low. Next, the phonemes may be divided into two additional groups: tense and lax

(Celce-Murcia, Brinton, & Goodwin, 2010). The following vowel phonemes require your

muscles to tense up upon articulation and are called the "tense" vowels: /i, e, ɑ, ɔ, ow,

uw/; the following vowels that allow your muscles to relax upon articulation are called

the "lax" vowels: /I, ɛ, æ, ʌ, ʊ/ (Celce-Murcia, Brinton, & Goodwin, 2010). Table 2

provides a visual representation of the aforementioned physical traits, which are

traditionally referred to as place and manner of articulation in linguistics (Celce-Murcia,

Brinton, & Goodwin, 2010).

Table 2. Vowel Chart (Red = Lax Vowel)

	front	central	back
high	/i/ /I/		/uw/ /ʊ/
mid	/e/ /ɛ/	/ʌ/	/ow/
low	/æ/	/ɑ/	/ɔ/

Adapted from Celce-Murcia, Brinton, & Goodwin (2010, p. 118).

The final way that vowel phonemes may be described physically is by the shape

of the lips upon articulation: rounded, neutral, or spread (Celce-Murcia, Brinton, &

Goodwin, 2010). Production of the /i/ phoneme, for example, require your lips to be

spread, while production of the /ow/ phoneme requires your lips to be rounded

(Celce-Murcia, Brinton, & Goodwin, 2010). An example of the neutral position is the

production of the /ɑ/ phoneme which requires lips to be neither spread nor rounded

(Celce-Murcia, Brinton, & Goodwin, 2010).

The simple vowels of Spanish. Spanish tends to have five simple vowels, though

that number may vary between dialects (Morrison, 2006). Unlike English, where each

orthographic representation of a vowel can represent multiple phonemes (see Table 1),

Spanish vowels correspond directly with only one phoneme. See Table 3 for examples of

each simple Spanish vowel phoneme.

Table 3. The 5 Simple Vowels of Spanish

	Phoneme	Examples
1.	/ɑ/	c<u>a</u>s<u>a</u>, <u>a</u>m<u>a</u>
2.	/e/	<u>e</u>dad, m<u>e</u>sa
3.	/i/	<u>i</u>ba, n<u>i</u>ña
4.	/o/	<u>o</u>s<u>o</u>, m<u>o</u>n<u>o</u>
5.	/u/	<u>u</u>no, d<u>u</u>da

Adapted from Spanish Letter/Sound System (n.d.)

When Table 1 and Table 3 are compared directly, two important conclusions can

be drawn. First, NAE has six additional simple vowel phonemes that do not exist in

Spanish. Secondly, NAE has a much more complex system of representing each phoneme

orthographically than does Spanish. Though the articulatory and auditory specifications

of the gestures used to produce the phonemes in Table 3 remain consistent between both

languages, L1 Spanish L2 English learners face the challenge of both learning to hear the

six additional NAE vowel phoneme as well as to produce those phonemes using new

articulatory gestures. In addition, the L1 Spanish L2 English learner will also need exposure as to how each vowel phoneme of English can be represented orthographically. With this in mind, students may benefit from direct instruction on how to physically produce and represent new English phonemes. The next section will describe the process students go through in order to acquire a new phoneme.

/i/ and /I/ as Distinct Phonemes

       Early perceptions. The /i/ phoneme exists in both English and Spanish, and the /I/ phoneme exists in English but not Spanish. Orthographically, the /i/ phoneme always appears as the letter "i" in Spanish, but in English the /i/ phoneme can appear with various spelling patterns (see Table 1). Because the /I/ phoneme does not exist in Spanish, it is unlikely that a beginning L1 Spanish L2 English learner will be able to perceive it (Meléndez-Ballesteros, 2014). Flege (1993, 1995, 2009) stated that without adequate perception of a phoneme, the learner will also not be able to produce the target phoneme (as cited by Moya-Galé et al., 2010).

       Flege's Speech Learning Model (1992, 1995) suggested that the closer an L2 sound is to an L1 sound, the more difficult it will be to perceive, as cited by Meléndez-Ballesteros (2014). Table 2 shows that the production of the /I/ phoneme is physically similar to the production of the /i/ phoneme. The /i/ phoneme is the highest front vowel. The lips need to be spread and muscles tense in order to produce the /i/ phoneme. In contrast, the /I/ phoneme is only slightly lower and farther back yet still in the front position. The lips are slightly less spread, and the muscles are relaxed when the /I/ phoneme is produced. When a beginning EL hears a new L2 phoneme, the learner will

perceive the sound as the L1 phoneme to which it is most similar - even though the new

sound is distinctive in English in that it distinguishes between meanings of words

(Meléndez-Ballesteros, 2014). Thus, despite the physical differences between the two

phonemes, a beginning L1 Spanish L2 English learner is likely to perceive the /I/

phoneme as /i/, although another possibility is the perception of the /e/ phoneme due to

the proximity between the three phonemes (Morrison, 2006). This assimilation of an L2

sound into an existing L1 sound category is called a "category-goodness difference" and

is part of Best's Perceptual Assimilation Model (PAM) (Moya-Galé, et al., 2010). See

Table 4 to view the proximity of the /i, I, e/ phonemes.

Table 4. /i/ and /I/ Proximity

	front
high	/i/ /I/
mid	/e/

Adapted from Celce-Murcia, Brinton, & Goodwin (2010, p. 118).

Stages of development. Escudero (2000), as cited by Morrison (2008),

speculated a sequence of stages in which L1 Spanish L2 English learners go through

when developing the /i, I/ distinction. Morrison (2008, 2009) proposed an additional

stage between Stage 0 and Stage 1. He referred to this stage as Stage ½. The stages are

meant to be viewed as a continuum rather than concrete steps (Morrison, 2008). In other

words, learners do not "jump" from one stage to another; rather, they gradually move

along a continuum from one stage to the next (Morrison, 2008). See Table 5 for a

simplified version of each stage, which includes Escudero's (2000) proposed stages in

addition to Morrison's (2008, 2009) additional proposed stage of development.

Table 5. Stages of Development

Stage	Description
0	Unable to distinguish between the /i/ and /I/ phonemes
½	Multidimensional-category-goodness difference assimilation
1	Distinguished by duration only
2	Distinguished mostly by duration with some spectral cues
3	Distinguished mostly by spectral cues with some duration cues

Based on Escudero (2000) and Morrison (2008, 2009)

As discussed earlier, stage 0 represents beginning L1 Spanish L2 English learners

who are unable to distinguish between the /i/ and /I/ phonemes because the /I/ phoneme

does not exist in the Spanish vowel system (Meléndez-Ballesteros, 2014). Morrison

(2009, p. 441) described the initial stage of developing the distinction (stage ½) as a

multidimensional-category-goodness difference assimilation "with more Spanish-/i/-like

English vowels labeled as English /I/ and less Spanish-/i/-like English vowels labels as

English /i/."

At Stage 1, learners begin to rely on duration in order to distinguish between the

/i/ and /I/ phonemes, even though the Spanish vowel system does not use duration to

distinguish between two phonemes (Morrison, 2008). Flege et al. (1997) (as cited by

Morrison, 2008), proposed that one explanation for this is that L1 Spanish L2 English

learners are often taught by teachers that the /i/ phoneme is "long" and the /I/ phoneme is

"short." Another explanation for the reliance on duration is Bohn's (1995, p. 294)

Desensitization Hypothesis, which stated that "whenever spectral differences are

insufficient to differentiate vowel contrasts because previous linguistic experience did not

sensitize listeners to these spectral differences, duration differences will be used to

differentiate the non-native vowel contrast," (as cited by Moya-Galé, 2010, p. 9).

In Stage 2, L1 Spanish L2 English learners still mostly rely on duration, but they

begin to notice spectral cues as well (Morrison 2008). Spectral cues refer to the frequency

or acoustics of each phoneme. Spectral cues and duration are partially correlated, so L1

Spanish L2 English learners who have been using duration cues in Stage 1 will begin to

notice that the /i/ and /I/ phonemes have different acoustical properties and frequency

(Morrison, 2008). Also in this stage, as students become more adept with their English

language skills, they may also be able to use context to differentiate whether the sound

they heard should have been an /i/ or an /I/ (Morrison, 2008). For example, if a teacher is

leading a discussion about the Titanic and an L1 Spanish L2 English learner is trying to

decide if he is hearing the word "ship" or "sheep," he may be able to choose "ship" based

on the context of the discussion, which reinforces to himself that he is hearing the /I/

phoneme. With continued support and exposure to the /i, I/ distinction, students will

increase their reliance on spectral cues and decrease their reliance on duration, which is

in line with how native English speakers perceive the distinction (Morrison, 2008). This

is the final stage of development: Stage 3.

Understanding of these stages may help teachers understand where a student is at

in their development of a particular phoneme. For example, if attempting to prolong the

vowel for emphasis (i.e. increasing duration) does not help a student understand, then the teacher can assume that the students is most likely at stage 0. Once the student can distinguish phonemes using duration cues, then the teacher can assume that the student has progressed to stage 1. Once the student no longer requires duration cues, then the teacher can assume that the student has fully acquired the new phoneme auditorily. While stages ½ and 2 may be less concrete, stages 0, 1, and 3 should provide teachers a clear understanding of a student's development. With this knowledge, the teacher can tailor how she supports a student until he no longer needs support with that particular phoneme. The next section will discuss some research on how to teach and support students as they develop phonemic awareness.

Phonemic Awareness Instruction

There are a few main points to be made about phonemic awareness instruction in general. In terms of instructional approaches, Swanson and Hoskyns (1999) found that a direct instruction approach is effective when engaging ELs in reading instruction (as cited by Leafstedt, Richards, & Gerber, 2004). This approach begins with the explicit modeling of a skill by the teacher. Students then enter a time of structured practice, where the teacher continues to model and provide explicit feedback to students as they attempt the skill. Next, students attempt the skill while the teacher monitors. The teacher provides guidance and feedback only as necessary. Once students reach about 85% accuracy, they may begin to work on the skill independently. Each lesson using a direct instruction approach progresses through these four stages: modelling, structured practice, guided practice, and independent practice.

Next, Cunningham (1990, p. 429) found that for children in first grade who were engaged in a "metalevel" approach which "reflected upon and discussed the value, application, and utility of phonemic awareness for the activity of reading at an explicit level performed significantly better on a transfer measure of reading achievement than the skill and drill experimental group." Interestingly, the type of instruction (metalevel vs. skill and drill) were equally effective for kindergarten students (Cunningham 1990). Cunningham (1990) suggested that the more students develop their reading ability, the more effective the metalevel approach becomes. Consequently, the metalevel approach should prove to be more effective for students first grade and up, yet also effective for kindergarten.

Finally, Roberts (2005) strongly suggested that phonemic awareness instruction should include both the perception and production of phonemes. Articulatory accuracy has been shown to have a powerful effect on students' phonemic awareness and word reading skills (Roberts, 2005), and Flege (1993, 1995, 2009) found that how a student articulates a phoneme also gives insights into how that student is perceiving each phoneme (as cited in Moya-Galé, et al., 2010). Particular attention should also be paid to the phonemes in English that are most similar to a student's L1, such as the /I/ phoneme for L1 Spanish L2 English learners (Robert, 2005). It is these sounds that are most likely to be misperceived as an existing L1 phoneme (Roberts, 2005).

The Gap

Despite the amount of research that has focused on phonemic and phonological awareness, gaps do exist. Most of the research has focused on younger students (e.g.

kindergarten and first grade); thus, there is a need to better understand how the findings

relate to middle and high school students (Lipka & Siegel, 2011). Additionally, much of

the research regarding phonemic awareness is not specific to EL populations alone

(Leafstedt, Richards & Gerber, 2004).

There is also some debate among researchers as to the causality of phonemic

awareness as it relates to reading ability. Krashen (2004), for example, argued that

phonemic awareness is gained as a result of learning how to read. Other studies (Ehri,

1979; Morais, Cary, Alegria, & Bertelson, 1979), as cited by Cunningham (1990),

support this direction of causality due to the fact that students gain phonemic awareness

skills through continued exposure to reading materials. However, Cunningham (1990)

argued that "if phonemic awareness was simply a by-product of reading ability, then

training studies or prior knowledge would have no effect on the development of reading

achievement" (p. 440). This is not the case, as multiple studies have shown phonemic

awareness to be necessary to the development of reading abilities (Cunningham, 1990).

Additionally, many of the studies regarding phonemic awareness do not take into account

ELs, who must acquire new phonemes in the L2 (Leafstedt, Richards, & Gerber, 2004).

In light of these arguments, Cunningham (1990) proposed that perhaps phonemic

awareness and reading abilities can be developed simultaneously.

Summary

Of the research presented above, here are the main points that will be taken into

consideration for the development of this project. First, phonemic awareness is an

important skill for ELs. It can significantly impact a learner's reading achievement and

intelligibility, and it is not enough to assume that ELs will acquire phonemic awareness without direct instruction (Cunningham, 1990; Leafstedt, Richards, & Gerber, 2004; Lipka & Siegel, 2011; Yaghoub Zadeh, Farnia & Geva, 2010). Thus, the creation of a curricular unit for a specific population of students is a worthwhile endeavor.

It is important for teachers to understand how the phonemes in a learner's L1 differ from phonemes in the L2. This knowledge sets the stage for appropriate phonemic awareness instruction, with the focus being on phonemes in the L2 that are most similar to a student's L1 (Roberts, 2005). Both the perception and production of new phonemes should be developed (Roberts, 2005). Escudero (2000) and Morrison's (2008, 2009) stages of development may be utilized to assess students' progression of phoneme acquisition.

It is also effective to use a metalevel approach, especially with students first grade and up (Cunningham, 1990). This approach includes explicit discussion of the value of phonemic awareness and the application of phonemic awareness to reading (Cunningham, 1990). It could also benefit students to be made aware of how English phonemes relate to the various spelling patterns found in Table 1. The spelling patterns in English are not always obvious or predictable, especially for learners whose L1 has more consistent and standardized spelling patterns (compare Table 1 and Table 3).

The research included above helps to answer the research question: *Why is phonemic awareness important for English learners (ELs) and how can it be developed?* Keeping the findings in mind, Chapter 3 will include a sampling of specific strategies for teaching L1 Spanish L2 English learners how to perceive and produce the phonemes /i/

and /I/, which are contrastive phonemes in English but not in Spanish. The strategies

provided will have application to the teaching of contrastive phonemes in general. Thus,

Chapter 3 will be useful for any teacher wishing to develop phonemic awareness skills

with ELs.

CHAPTER 3

Project Description

This chapter provides a description of the curriculum project written in conjunction with this paper. It includes detailed information on the setting and participants, the instructional framework, and a sampling of key strategies used to develop the phonemic awareness of ELs. The aim of both the project and paper is to help teachers answer both parts of the research question: *Why is phonemic awareness important for English learners (ELs) and how can it be developed?* While Chapter 2 focused mainly on the first part of the research question, Chapter 3 will delve into the methods and strategies used to develop the phonemic awareness of ELs.

Setting and Participants

The setting for this project is a low-incidence, rural elementary school in the Midwest. The school has an approximate EL population of 5% (around 20 students total) and uses a pull-out instructional model. The students work with an EL teacher for approximately 20 minutes daily either 1-to-1 or in small groups. Students with lower proficiency levels may receive more time as determined by the EL and general education teachers.

The curriculum has been developed for kindergarten and first grade EL students, though it could be used or adapted for older students. Though the focus of this curriculum is only two phonemes (/i/ and /I/), the concepts and strategies should also be adaptable for any phoneme distinction a student has trouble with, as determined by a teacher, though additional knowledge of how to describe and demonstrate phonemes physically may be

required. Relying on the research of Leafstedt, Richards, and Gerber (2004), which found that ELs may begin their phonemic awareness instruction at any proficiency level, the curriculum will assume a beginning language proficiency level and aim to build vocabulary and language throughout.

Though older EL students may also struggle with phonemic awareness, if an effective curriculum exists for kindergarten and first grade students, then it will allow younger students to avoid falling behind in their literacy development thus eliminating the need for additional phonemic awareness instruction in the later grades. In reality, not all ELs begin school in an English language environment at the kindergarten and first grade levels, so adapting or re-writing the curriculum for older grades may be necessary.

Instructional Framework: Understand by Design

This curriculum project was designed using the Understanding by Design framework created by Wiggins and McTighe (2005). Wiggins and McTighe (2005) promoted an approach they call "backward design," and there are three steps to using this approach. First, one must begin by determining the desired results, learning goals, or key understandings. Next, one must determine what will sort of evidence or assessment will be necessary to determine whether or not students have met the desired results (Wiggins & McTighe, 2005). Finally, after the desired results and acceptable evidence have been determined, then one may begin planning the activities, processes and procedures that will lead students to achieve the desired results (Wiggins & McTighe, 2005).

Desired results. I view the project herein as the first of several units designed to provide a deep understanding of how English phonemes work in contrast to the Spanish phonemes. While my ultimate desired result is for students to have a deep understanding of and ability to hear and produce *all* of the English phonemes, the desired results for this project are much more narrow, focusing on only two vowel phonemes /i/ and /I/. If the curriculum proves successful, however, it will serve as a template for eventually teaching additional phonemes. The desired results for this project, then, are for students to be able to distinguish /i/ and /I/ while listening to spoken English, produce /i/ and /I/ accurately, and to apply these capabilities when speaking and listening in English.

Acceptable evidence. Students will begin by taking a listening and speaking pre-test in order to determine their ability to hear and produce the /i/ and /I/ phonemes. The results of the pre-test will help determine a student's current abilities as well as provide a measure to determine whether or not the student gained the desired results after the completion of the unit. Thus, the same test will be given as a post-test upon completion of the 10-lesson unit.

In addition, acceptable evidence has been determined for each lesson in the unit. The sequence of the lessons has been carefully determined to slowly build listening and speaking skills. If a student is not able to provide acceptable evidence that he or she has gained the skill or ability sought in a lesson, then that lesson should be repeated.

Key strategies. Several key strategies for the development of phonemic awareness are provided by Celce-Murcia, Brinton, and Goodwin (2010), and a sampling of them are described below. One strategy is teaching students the physical features of a

sound, as described in Chapter 2, and using mirrors to help students replicate those features. A number of other strategies exist that use minimal pairs to contrast two sounds. Minimal pairs are words that differ in only one phoneme; thus, when studying the /i, I/ distinction some useful minimal pairs would be ship/sheep, slip/sleep, pick/peek, etc.

Celce-Murcia, Brinton, and Goodwin (2010) suggested a color-coding system for students to identify vowel sounds without using the International Phonetic Alphabet, as such a system could confuse young learners. For example, gr<u>ee</u>n could represent the /i/ phoneme, while p<u>i</u>nk could represent the /I/ phoneme. These colors could then be used to identify and categorize the /i/ and /I/ phonemes within words and minimal pairs.

Celce-Murcia, Brinton, and Goodwin (2010) suggested using listening discrimination activities (such as the one I used with the whiteboards many years ago) for diagnostic purposes only. That is, use them to determine how well a student can differentiate between sounds but not as a measure to teach the sounds. One way to do this is to present students with a worksheet that has a number of pictures representing minimal pairs. The worksheet may begin with a picture of a ship and a sheep, for example. The student would then listen to the teacher speak the name of one of the pictures, and then the student would circle the picture of the word he hears. This activity would continue with several other minimal pair pictures using the same contrasting sounds to help identify a student's competence with hearing the contrasting sounds. A strategy like this could be used as both a pre-test and independent practice/post-test, and the teacher could vary which picture she names in order to make the assessment less predictable for students.

As suggested by Celce-Murcia, Brinton, and Goodwin (2010), any sort of listening discrimination activity should lead into a controlled oral production lesson with feedback. Using the direct instruction approach, this would be called "structured practice" and would begin with a lot of teacher modelling. One suggested strategy aims to build both the phonemic awareness of two contrasting sounds and vocabulary. The teacher selects a category in which the two phonemes naturally occur. For example, many food items contain the /i, I/ phonemes: m<u>i</u>lk, ch<u>i</u>cken, f<u>i</u>sh, t<u>ea</u>, ch<u>ee</u>se, m<u>ea</u>t, etc. The teacher would teach the vocabulary items, perhaps using picture flashcards, and students would practice vocalizing the vocabulary word. As an extension activity, students could work on isolating each phoneme in the vocabulary words. This would help students to focus on the pronunciation of each individual phoneme and further build their phonemic awareness skills.

Next, in following the direct instruction approach, Celce-Murcia, Brinton, and Goodwin (2010) suggested using a "guided practice" activity with feedback only as necessary. One suggestion is to use the familiar children's game "I'm Going on a Trip" which could use the same vocabulary words practiced earlier in the lesson. For example, the teacher could begin by saying, "I'm going on a trip, and I'm going to bring some *milk*." The next student would repeat what the teacher said and add another item: " I'm going on a trip, and I'm going to bring some *milk* and some *chicken*." The next student would continue to repeat and add to the list until all of the vocabulary items have been used. This activity allows students to practice the pronunciation of the vocabulary words in a fun way, and the teacher would only provide feedback as necessary.

Celce-Murcia, Brinton, and Goodwin (2010) also suggested using a more communicative activity during guided practice. One way to do this is to engage students in writing a poem using the target vowel contrasts. To get started, it is likely a good idea to provide students with sentence frames and to help them brainstorm possible words to fill in blanks. Not only does an activity like this allow students to practice the /i, I/ contrast, it also begins to apply this knowledge to text and develop their phonological awareness skills in terms of rhyming. Below is an example of this activity, though it can be adapted in any number of ways.

> *There once was a student named* _____
> *Who wanted to dance with* _____
> *He/She tried not to* _____
> *But he/she happened to* _____
> *So the* _____ *ended up* _____ .

Using the /i, I/ contrast, the poem could be completed as follows:

> *There once was a student named Denise*
> *Who wanted to dance with the police*
> *She tried not to quit*
> *But she happened to sit*
> *So the police ended up watching geese.*
> Adapted from Celce-Murcia, Brinton, & Goodwin (2010, p. 157-159).

As mentioned above, a good way to end a lesson (or unit) would be with independent practice such as a listening discrimination activity. Also, keeping in mind Roberts' (2005) suggestion that phonemic awareness instruction include both the perception and production of phonemes, it seems necessary to add production activities to the independent practice category. This could be as simple as stating the names of vocabulary words or minimal pairs learned in a lesson or reading a sentence or paragraph

that contains the target phonemes. In this way, the teacher is able to determine a student's ability to both hear and produce the target phonemes.

Timeline

This curriculum project was completed in the fall of 2017. The research that led to the formulation of this project began in the summer of 2017. The final chapter, Chapter 4, was written as a reflection after the completion of the project.

CHAPTER 4

Conclusion

This paper and curriculum project was created with the underlying goal of

answering the following research questions: *Why is phonemic awareness important for*

English learners (ELs) and how can it be developed? While chapters 1 and 2 of this paper

aimed to answer the question of *why* phonemic awareness is important, chapter 3 and the

curriculum project aimed to answer *how* it can be developed.

During my first four years of teaching, I noticed real deficits in the way my

students processed and produced certain sounds of the English language, with vowels

being the most difficult. The initial steps I took to help students be able to hear and

produce these sounds were not successful, and so I approached this paper and project as a

way to look at what research says about teaching the various phonemes of English.

The first question I aimed to answer was simple: is phonemic awareness an

important skill for ELs, and if so, why? I wanted to know if all of this work of teaching

phonemes, unsuccessful up to this point, was worth it. I wanted to know if I could stop

teaching phonemic awareness and know that my students would be just fine. What I

found in the research was that skills associated with phonemic awareness have been

shown to contribute to successful reading comprehension skills (Lipka & Siegel, 2011;

Yaghoub Zadeh, Farnia & Geva, 2010). This, in and of itself, was reason enough for me

to keep teaching phonemic awareness skills and further develop this paper and project.

Logically, it does make sense. If a student is not proficient with the sounds of

English, how is that student going to become successful at decoding (i.e. sounding out

words)? Without decoding skills, how is that students going to become successful at comprehending texts? In addition, comprehending spoken English and being able to speak comprehensibly in English are all affected by phonemic awareness.

The question of *how* to effectively teach phonemic awareness yielded many interesting results. Before beginning this paper and project, I had attempted to teach all of the short vowel sounds at once. I used minimal pairs such as pat, pet, pit, pot, putt. I will never forget the confused looks on my students' faces when I asked them to write the word they heard me say… and then when I told them they were wrong. This "ear training" approach (as I thought of it) did not work. There were too many phonemes being compared at once. There were no visuals or context. There was no instruction on how to produce the sounds physically, and I never explicitly stated that the vowels in English represent more than one phoneme. Upon completion of this paper and project, however, I am much more knowledgeable about the process and effective strategies that can be used to develop phonemic awareness.

Major Learnings

So, what did I learn about how to teach phonemes effectively? First, I never read anywhere that it is a good idea to teach several phonemes at once. While I never saw a specific number, the correct use of minimal "pairs" suggests that a "pair" would mean comparing only two phonemes at once. In this project, written for native Spanish speakers, I used the /i/ phoneme, which exists in Spanish, and the /I/ phoneme which does not exist in Spanish, even though the physical production of /I/ is similar to that of /i/. In

this way, the students begin the unit already being able to produce one of the two phonemes, with the development of the /I/ phoneme being the goal of the unit.

I also learned about how to teach students to produce sounds physically. The beginning of my curriculum includes explicit instruction on how to physically produce the /i/ and /I/ phonemes. It contrasts them using mirrors and visuals produced using a hairband to emulate the proper mouth shape. In this way, students learn what these sounds feel like and what they look like. There are many resources available on how to physically produce each English phoneme, and these can be utilized when attempting to teach students any sound in the English language. Though my project contrasts only two phonemes, I view the curriculum as a "template" for future units that would cover other phoneme contrasts. For example, I currently have students who use the /f/ phoneme for words containing the /θ/ phoneme (e.g. they say "fink" instead of "think"). This is similar to the issue of native Spanish speakers using the /i/ phoneme for words containing the /I/ phoneme. Thus, I could recreate this curriculum to focus on /f/ and /θ/ as contrastive phonemes.

Finally, I learned that I can teach context, vocabulary, and language skills while also aiming to teach phonemic awareness skills. I did this by utilizing food and body part vocabulary that contained the target phonemes. Students then practiced using these vocabulary words using language such as, "Do you like *milk*? Yes, I like *milk*." In this way, students develop their English language skills while also practicing and developing target phonemes. This is especially important when teaching small groups (as compared

to 1-on-1) as students will continue to be engaged and challenged even if one student masters the target phoneme much faster than another student in the group.

Literature

Within this paper, there is research presented that was directly applicable to the project. There is also research presented that greatly contributed to the overall understanding of phonemic awareness and second language learners. I believe both are important, as the research that contributes to the deep understanding of phonemic awareness certainly informed the process and project formation.

The research that was most applicable to the project was that of Celce-Murcia, Brinton, and Goodwin (2010) and Wiggins and McTighe (2005). Celce-Murcia, Brinton, and Goodwin (2010) provided many research-based strategies for building the phonemic awareness curriculum. It is an invaluable resource, one that I will keep close as I work to adapt the curriculum to meet other phonemic awareness needs my students may have. Wiggins and McTighe (2005) provided a useful and effective framework for building the curriculum with specific goals and indicators of success every step of the way.

The research that helped me attain a deep understanding of how second language learners gain phonemic awareness skills was that of Escudero (2000) and Morrison (2008, 2009). While I did not directly include the stages of development into the project (see Table 5), the research helped me understand the phonemic awareness development process from the perspective of the student. I understand that students who are new-to-country may literally not be able to hear the difference between two (or more)

phonemes in the English language. I also know that their development will include

duration-based cues before the being able to utilize native-speaker-like spectral cues.

I also think that it is important to have a general understanding of how the

phonemes in English differ from the languages of your students. Because I, as the

teacher, am aware of various English phonemes that do not exist in Spanish, I am

immediately able to predict the difficulties my students may face and work to help them

build the necessary awareness of new phonemes in English. The various research

presented on this topic in Chapter 2 was necessary for me to attain a deep understanding

of how English and Spanish vowels differ, and, thus, I also gained a deep understanding

as to why the English vowel system has been so difficult for my students over the years.

Limitations

Though I can reflect on prior experiences and create resources such as this project

to fill a specific need, I cannot predict who my students will be in any given year. I

currently work in a small, rural district in the Midwest, and I have a total of six

kindergarten and first grade EL students this year, none of whom are beginners in

English. While I did give all six of these students the pre-test associated with the

curriculum project, all six of the students passed on their first try.

This does not mean, however, that all six students are fully proficient with all of

the English phonemes. Instead, I think that the pre-test should be modified to test a

student's ability to hear multiple phoneme contrasts, rather than just one contrast. This

would provide a broad overview of which phoneme contrasts each student is and is not

able to identify, and the curriculum could then be modified to meet the exact needs of the students.

Due to all six of my students passing the current pre-test, it does not make sense for me to use this curriculum with them. In the meantime, however, I have been using a phonics workbook that begins by building phonemic awareness skills. I have noticed that two of my three kindergarten students struggle with identifying onset sounds (i.e. the first sound in a word), even when the contrastive phoneme is not similar to the target phoneme. For example, suppose the target phoneme is /t/, and the students are presented with a picture of a sun. They all know the word for sun and excitedly yell "Sun!" when they see the picture. But when I ask, "Does *sun* begin with */t/*?" two of my three students excitedly answer, "Yes!" Upon isolating the phoneme (/s/, /s/, /s/, sun), only then are all three able to identify /s/ and /t/ as being different. Whether this is an English learner issue or an early literacy issue, I am not sure. Nevertheless, it shows that my students do need to develop phonemic awareness skills, even if they happen to be aware of the /i/ and /I/ contrast.

Implications and Future Research

It is very difficult to find a one-size-fits-all curriculum for ELs. In fact, it can be difficult to find any curriculum at all, especially for kindergarten and first grade. When many people hear the term "English Learner," they assume that these students must not know any English. However, many ELs are very proficient speakers of English who continue to qualify for EL services due to lower than average literacy skills and a lack of

academic language. All six of my kindergarten and first grade EL students are behind their peers when it comes to literacy, yet they speak a great deal of English fluently.

While phonemic awareness may be part of the answer, I do not know of a curriculum that combines phonemic awareness, phonics, and other literacy skills along with academic language development for kindergarten and first grade students. More research needs to be done on the early literacy of ELs, and that research needs to be consolidated into a curriculum for teachers to use. While many phonics-type curriculums and workbooks exist, in my experience, they tend to teach sounds in isolation rather than giving them a specific context and using them to build language and deeper literacy skills.

It is my hope that this curriculum project can be a springboard from which I and others interested in this topic are able to begin integrating phonemic awareness and language development in a meaningful and effective way. I look forward to using this curriculum or a variation of it that aims to meet the specific needs of my students.

Conclusion

As I reflect on my own language learning experiences while living in Thailand, I feel great respect for my EL students. Learning a language, especially to the extent required in a K-12 setting in the United States, is an extremely difficult task. It is much more than simply memorizing vocabulary and grammar rules, and subtler aspects such as phonemic awareness can all too easily be pushed aside. I never did master the various new phonemes presented in my Thai lessons, but I see my own students growing towards

mastery in English every day. I am proud to have been able to expand my knowledge of

phonemic awareness and grow the skills required to successfully teach it.

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