THE USE OF ENGLISH SONGS TO IMPROVE THE PRONUNCIATION OF PROBLEMATIC ENGLISH CONSONANT SOUNDS FOR THAI LEARNERS

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การใช้เพลงภาษาอังกฤษเพื่อพัฒนาการออกเสียงพยัญชนะภาษาอังกฤษที่เป็นปัญหาสำหรับผู้เรียนชาวไทย

นางสาวปิยะกมล พินทุโยธิน

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Field of Study	English
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ปิยะกมล พินทุโยธิน : การใช้เพลงภาษาอังกฤษเพื่อพัฒนาการออกเสียงพยัญชนะภาษาอังกฤษที่เป็นปัญหาสำหรับผู้เรียนชาวไทย. (THE USE OF ENGLISH SONGS TO IMPROVE THE PRONUNCIATION OF PROBLEMATIC ENGLISH CONSONANT SOUNDS FOR THAI LEARNERS) อ. ที่ปรึกษาวิทยานิพนธ์หลัก : อ.ดร. มัทธนี พลังเทพินทร์, 159 หน้า.

การวิจัยนี้มุ่งศึกษาว่า (1) การใช้เพลงภาษาอังกฤษสามารถพัฒนาการออกเสียงพยัญชนะภาษาอังกฤษที่เป็นปัญหาสำหรับผู้เรียนชาวไทยได้หรือไม่เมื่อเปรียบเทียบกับการสอนโดยตรง หน่วยเสียงที่เป็นปัญหาและมุ่งศึกษาคือ /g/, /v/, /z/, /r/, /θ/, /ð/, /ʃ/, /ʒ/, /ʧ/, และ /ʤ/ ซึ่งเป็นหน่วยเสียงที่ไม่ปรากฏในภาษาไทย และ (2) สำหรับแต่ละหน่วยเสียง ผู้เรียนสามารถพัฒนาการออกเสียงได้มากน้อยเพียงใด การศึกษานี้ใช้วิธีการวิจัยแบบกึ่งทดลอง มีกลุ่มตัวอย่างเป็นนักเรียนระดับมัธยมศึกษาตอนปลาย 30 คน แบ่งเป็นกลุ่มที่ใช้วิธีการสอนโดยตรง (กลุ่มควบคุม) 15 คน และกลุ่มที่ใช้เพลงภาษาอังกฤษ (กลุ่มทดลอง) 15 คน การวิเคราะห์ข้อมูลใช้สถิติเชิงบรรยาย และสถิติอ้างอิง paired sample *t*-test และ independent sample *t*-test เพื่อวัดพัฒนาการของนักเรียนในการออกเสียงหน่วยเสียงที่เป็นปัญหาหลังจากการเรียน 15 ชั่วโมง เป็นเวลา 5 สัปดาห์

ผลการวิจัยพบว่า (1) ทั้งสองวิธีสามารถพัฒนาการออกเสียงภาษาอังกฤษที่เป็นปัญหาของนักเรียนในภาพรวมได้อย่างมีนัยสำคัญที่ระดับ .05 โดยกลุ่มที่ใช้การสอนโดยตรงมีคะแนนส่วนต่างของคะแนนทดสอบก่อนเรียนและหลังเรียนสูงกว่ากลุ่มที่ใช้เพลงภาษาอังกฤษเล็กน้อย นอกจากนี้ ยังพบว่า (2) การใช้เพลงภาษาอังกฤษสามารถพัฒนาการออกเสียงหน่วยเสียงที่เป็นปัญหาได้อย่างมีนัยสำคัญเพียง 6 หน่วยเสียงจาก 10 หน่วยเสียง ในขณะที่การสอนโดยตรงสามารถพัฒนาการออกเสียงของนักเรียนได้อย่างมีนัยสำคัญถึง 8 หน่วยเสียง หน่วยเสียงที่เป็นปัญหามากที่สุดสำหรับนักเรียนทั้งสองกลุ่มคือ /ð/ ในขณะที่ /ʃ/ เป็นหน่วยเสียงที่เป็นปัญหาน้อยที่สุด จึงสรุปได้ว่าแม้ว่าการเรียนการออกเสียงภาษาอังกฤษผ่านเพลงเพียงอย่างเดียวจะสามารถพัฒนาการออกเสียงหน่วยเสียงที่เป็นปัญหาในภาพรวมได้ แต่ก็มีประสิทธิภาพไม่ดีเท่าการสอนปกติเพราะการใช้เพลงไม่สามารถพัฒนาการออกเสียงบางเสียงได้ ทั้งนี้เนื่องจากมีปัจจัยต่างๆ เข้ามาเกี่ยวข้อง

ภาควิชา ภาษาอังกฤษ ลายมือชื่อนิสิต .....

สาขาวิชา ภาษาอังกฤษ ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก .....

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This study investigates (1) whether the use of English songs can improve students' pronunciation of the ten problematic English consonant phonemes that do not exist in Thai, /g/, /v/, /z/, /r/, /θ/, /ð/, /ʃ/, /ʒ/, /ʧ/, and /ʤ/, in comparison with the use of the direct-teaching method and (2) how much students improve their pronunciation of each phoneme with the two methods. Quasi-experimental research was conducted on 30 high-school students. Fifteen students were in the direct-teaching group (the control group) and the other 15 in the English-song group (the experimental group). Descriptive statistics, paired sample *t*-tests and independent sample *t*-tests were employed to measure the students' pronunciation improvement after receiving instruction for 15 hours over five weeks.

The results revealed two things. (1) Both methods could improve the students' overall pronunciation of the problematic phonemes at a significant level of 0.05. However, the difference between the pre- and posttest scores of the direct-teaching group was a bit greater than the other group's. (2) The use of English songs significantly improved student pronunciation of only six out of ten phonemes, while the direct-teaching method significantly improved eight phonemes. The most problematic phoneme for both groups was /ð/, and the least problematic one was /ʃ/. Thus, it can be seen that, although learning L2 pronunciation through songs alone can be effective, it is generally not as effective as the direct-teaching method, and it does not work for certain phonemes. Some important issues that could be involved are discussed.

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CHAPTER I
INTRODUCTION

This chapter presents the background and the statement of problems that lead to this investigation of the use of English songs to improve the students' pronunciation of problematic English consonant phonemes. The objective, research questions, scope of the study, definitions and terms, and significance of the study are also presented.

Background of the Study

The number of English users, including those speaking English both as their mother tongue (L1) and as a second language (L2), is growing ever greater. According to Saville-Troike (2006: 9), the number of L2 English speakers is estimated at 950 million, while that of L1 English speakers is 427 million. That is to say, English is used as a medium of communication by over 1.377 billion people around the world in both global and local contexts. In Thailand, where English is recognized as a foreign language (EFL), the Ministry of Education is aware of the importance of English competence, so English is prescribed for the entire basic-education core curriculum (The Basic Education Core Curriculum B.E. 2551, 2008: 252). As a consequence, Thai learners are expected to be able to use English for communication in a variety of situations, as well as for other reasons such as educational, social, and career advancement.

However, Khamkhien (2010: 757) reports that the English performance of Thai learners is unsatisfactory in all skill areas. One reason for this could be a lack of opportunities to use English in real communication in everyday life. As Saville-Troike (2006) notes, the circumstances of learning, such as informal/naturalistic versus formal/instructed contexts of learning, can affect second-language learning outcomes. She adds, "L2 learners who are majority L1 speakers often have access only to foreign-language programs which offer the L2 as an academic subject and give little opportunity for students to develop full communicative competence" (128).

To communicate effectively, a language user must have the goal of creating mutual understanding with his/her interlocutors, so it is necessary that the language

convey messages clearly and appropriately. In oral communication, knowledge of vocabulary and grammatical structures on its own may not be sufficient to create intelligibility. Herbert (2002: 188) asserts that "intelligibility entails more than simply using appropriate lexical items and correct word order." Pronunciation problems at the segmental level can affect intelligibility because sound segments or phonemes express differences in meaning. As an example, Seidlhofer (2001: 59) reports that Spanish learners of English often have difficulty with both the perception and production of the English /b/ and /v/ sounds, as in *berry* and *very*, since the Spanish sound system contains no contrast between these two sounds. Accordingly, Spanish speakers' pronunciation of /b/ and /v/ may not be understood by interlocutors, and, likewise, they may not understand their interlocutors. For this reason, Herbert (2002: 188) remarks that "Phonology, then, should be an integral part of any ESL lesson/syllabus."

On the subject of teaching pronunciation, Goodwin (2001) states the following three goals. First, teaching pronunciation aims at enabling learners to understand and be understood. Second, it aims at building learners' confidence in taking part in communicative situations. Lastly, it should enable learners to monitor their speech based on input from the environment (117). Looking at the other side of the coin, Seidlhofer (2001: 59–60) notes that the purpose in learning pronunciation depends on the learning context; that is, whether the target language is learned as a second language or a foreign language. While ESL learners need to become intelligible to the native speakers around them and may desire to obtain a native "target norm" so that they can blend in with the native-speaker community, EFL learners may be content to be able to use English as a lingua franca in communication; as a result, achieving a native "target norm" may be less significant than "intelligibility." Thus, Seidlhofer strongly emphasizes maintaining a clear distinction between norms and models:

> A distinction must be made here between norms and models: regarding a particular native speaker variety as a norm which has to be imitated independently of any considerations of language use strongly connects it with ideas of correctness. Taken a model, on the other hand, such a variety can be used as a point of reference, to which learners can approximate

> more or less closely, depending on the needs of the specific situation. The notion of models privileges the criterion of **appropriacy** over that of **correctness** (60).

The above quote mentions two important terms: *appropriacy* and *correctness*. Appropriacy deals with acceptability or unacceptability in a particular context, while correctness evokes prescriptive rules that one has to obey regarding a particular norm of native speakers.

Drawing the goal and purpose of pronunciation learning from the aforementioned concepts, the present study's goal of pronunciation improvement is based on Goodwin's (2001) suggestion, i.e., improving learners' pronunciation of problematic phonemes in order to increase intelligibility in communication by emphasizing the notion of appropriacy over correctness, as suggested by Seidlhofer (2001). The students in the study tried to approximate a clear and easily understood pronunciation of the target sounds as the model that is widely used. They were not required to pursue a native-like or near-native-like accent, unless they themselves wished to do so depending on their individual aptitude.

When it comes to teaching pronunciation, the so-called listen-and-repeat method may be thought of first and foremost since pronunciation practice is believed to be associated with habit formation through a lot of training and rehearsal. Jones (2002: 180) refers to "the special characteristics of pronunciation, which, unlike other language skills, involves both cognitive and motor functions: few would deny that repeated practice of motor functions results in increased dexterity." Although the trends in pronunciation-teaching methodologies have changed from the behaviorist to the cognitive, and finally to the communicative approach, rehearsal of L2 pronunciation through repetition is still inevitable. The question is how to make the repetition of sounds more interesting since the first two approaches often exhaust learners with serious practice and cognitive load.

In order to interest learners as well as to get them to learn the language, a number of educators and teachers recommend incorporating songs in the classroom (Medina, 2002; Saslow, Ascher, and Notarpietro, 2007; Shen, 2009). Murphey (1989) points out advantages of using songs in the language classroom. He asserts, "Pop

songs are affective, simple and repetitive, with psycholinguistic and neuropsychological qualities that may make the discourse extremely useful in the classroom" (4).

Based on content analysis, Murphey found that 80% of pop songs were about love, which is a topic that most people are interested in. The lyrics were simple and repetitive with a word-per-minute rate that is about half the rate of normal conversational speech. People seemed to relate their own personal experience to songs easily because of the vague referents such as the pronouns *I* and *you*, despite the fact that songs did not usually refer to any specific places, time, or persons (Murphey, 1989: 4–5). Moreover, Murphey (1990: 58–59) discovered that singing resulted in the Song Stuck In My Head Phenomenon, i.e., the mind involuntarily rehearsed the songs in the head, and it was possible that this phenomenon would trigger the operation of the LAD, or language acquisition device, enabling language acquisition to occur.

In addition to Murphey's research, a number of previous works from the past decades to the present argue for a facilitative role for songs in L2 pronunciation learning (Techmeier, 1969; Jolly, 1975; Lake, 2002-2003; Hayes, n.d.; Tình, n.d.). They agree that the repetition of lyrics and tunes in songs has merit in reinforcing the sounds and internalizing them in learners' ears, leading to learners' familiarity with L2 sounds and improvement in pronunciation skills.

Nevertheless, the argument still seems to lack empirical evidence and investigation on the segmental level. Since many of the previous works rely on collection of theoretical supports and attitudinal surveys, there is room for the present study to fill this gap. Therefore, this study investigates the use of English songs to improve the pronunciation of ten English consonant phonemes that are problematic for Thai learners: /g/, /v/, /z/, /r/, /θ/, /ð/, /ʃ/, /ʒ/, /ʧ/, and /ʤ/ (Smyth, 1987; Kanokpermpoon, 2007; Phattaratunya, Booncham, and Loalah, 2007) in comparison with the use of the regular pronunciation-teaching method, which I refer to as the direct-teaching method in this paper. As the direct-teaching method is generally used in teaching L2 pronunciation (Jones, 2002: 182), comparing the results of the two methods may produce findings that are useful for teachers when making decisions regarding which methods to employ in teaching L2 pronunciation.

Objective of the Study

The objective of the study was to investigate the use of English songs to improve students' pronunciation of ten consonant phonemes that are problematic for Thai learners in comparison with the use of the direct-teaching method. The ten phonemes to be studied are those English consonant phonemes that do not exist in Thai, consisting of /θ/, /ð/, /ʒ/, /ʤ/, /ʃ/, /ʧ/, /g/, /r/, /z/, and /v/.

Research Questions

Two research questions were formulated as follows:

1. Does using English songs have significant effects on the students' pronunciation of ten consonant phonemes when compared with the use of the direct-teaching method?
2. To what extent can the pronunciation of each phoneme be improved with the use of English songs and the use of the direct-teaching method?

Scope of the Study

1. The participants in the study were 30 Thai high-school students studying in the range of Mattayom 4 to 6, or grade 10 to 12, of mixed levels, schools, and genders. They were all learning English as a foreign language (EFL).
2. The focus variables of the study were as follows:
    2.1 Independent variables consisted of
        2.1.1 the use of English songs, and
        2.1.2 the use of the direct-teaching method.
    2.2 Dependent variables were the students' pronunciation scores.

Definitions of Terms

1. Pronunciation is the production and articulation of speech sounds of a language. It is different from another related term, accent, which refers to a variety of pronunciation of a language that designates membership in particular communities or identifies the speaker as a native or non-native speaker of a language. Therefore,

pronunciation improvement is designed to make the students' articulation of English sounds understandable, and acquiring a native-like accent is not the primary goal.

2. The direct-teaching method involves the use of formal rules and direct explanations, which is commonly used in teaching L2 pronunciation (Jones, 2002: 182). In this study, it refers to an instructional method in which the students were directly taught the correct pronunciation of the target sounds by being given clear explanations of the production of sounds explicitly, phonological rules to remember, and phonetic symbols to represent the target sounds. The students were informed that the goal of the course was to practice problematic English consonant sounds that do not exist in Thai. The students practiced recognizing the problematic sounds by doing sound discrimination tasks and practiced producing the sounds by reading aloud from word lists, minimal pairs, and sentences that contained the target sounds. Also, they did classroom activities (see Chapter III) to practice these sounds with their classmates (for a sample lesson plan, see Appendix A).

3. The method of using English songs refers to an instructional method in which the students learned English pronunciation through English songs by observing how the singer pronounces words in song lyrics. This course was intended to enable the students to learn pronunciation through songs implicitly. To make it distinct from the more direct way of the direct-teaching method, the students were not informed as directly as the other group about the teaching goal or the sounds they were to focus on. No explanations of phonological rules or the use of phonetic symbols was given to the students. They were only asked to pay close attention and imitate the singer's pronunciation as they read the lyrics along with the song and followed the teacher's instructions, which drew their attention to the singer's pronunciation of the problematic sounds. Singing was the main activity involved in practicing the target sounds (for a sample lesson plan, see Appendix A).

4. Songs are defined in accordance with Griffee (1992: 3) as "pieces of music that have words, especially popular songs such as those one hears on the radio." Songs are different from music, which Griffee defines as instrumental music such as symphonies, easy listening, or solo instruments without words. In addition, the songs used in this study were in English and were not written for the purpose of teaching

English pronunciation; they were common English songs that can be heard via various kinds of media.

5. Phonetic symbols used in this study to represent English and Thai sounds mainly follow the International Phonetic Alphabet or the IPA chart (The International Phonetic Association, 2005) except that /r/ was used for the English retroflex approximant instead of IPA /ɹ/ (see Appendix F for the chart of phonetic symbols used in this study).

6. Difference score refers to the difference between the pretest and the posttest scores. It was calculated by subtracting the pretest score from the posttest score in order to see the change in the two variables. According to Jamieson (2007), difference score is sometimes called *change score* or *gain score*.

7. Problematic English consonant sounds in this study refer to ten English consonant sounds that do not exist in the Thai phonological inventory: /g/, /v/, /z/, /r/, /θ/, /ð/, /ʃ/, /ʒ/, /ʧ/, and /ʤ/ (Smyth, 1987; Kanokpermpoon, 2007; Phattaratunya et al., 2007). These sounds are sometimes referred to as the target sounds/phonemes.

Significance of the Study

This study contributes to current studies on the use of English songs to improve the pronunciation of problematic English sounds for Thai learners by providing empirical evidence of the students' pronunciation scores and the number of phonemes improved. Problematic and less problematic phonemes are identified so that English teachers will be aware of learners' difficulties in English pronunciation. Also, the findings reveal some constraints on learning L2 pronunciation through songs, in particular that the use of songs alone does not serve to improve certain phonemes. The comparative results with the direct-teaching method demonstrate that the direct-teaching method yields more effective results in improving student pronunciation of more phonemes, with a slight increase in the difference of the pre- and posttest scores over the other group.

Additional findings from qualitative data, namely interviews with students from the two groups and the researcher's reflection, demonstrated first-hand experience of both the teacher and the students. They also provided suggestions and concerns regarding the two methods from different perspectives.

In practice, this study also suggests classroom activities that can be used with English songs and with direct pronunciation teaching (see Chapter III) and found that the activities could improve the students' pronunciation in general.

CHAPTER II
REVIEW OF LITERATURE

In this chapter, previous literature related to the present study is reviewed. The chapter begins with the English consonant phonemes that are problematic for Thai speakers. Next, factors contributing to problems in acquiring L2 pronunciation are discussed with reference to SLA concepts and theories, including influence from the mother tongue, the notion of markedness, exposure to L2 sounds, and learners' age. This is followed by the history and development of L2 pronunciation instructions and the theoretical support for using songs in L2 pronunciation teaching. Finally, the chapter ends by identifying a gap in the literature.

Problematic English Consonant Phonemes for Thai speakers

According to Jotikasthira (1999), cited in Varasarin (2007: 15–16), English sounds that are problematic for Thai speakers may be classified into three categories. The first category consists of sounds that do not occur in Thai. These are /v/, /θ/, /ð/, /z/, /ʃ/, /ʒ/, /tʃ/, /dʒ/, and /g/. The second category involves English sounds that are equivalent to Thai sounds but occur in different syllable positions. For example, /l/ in final position is often replaced with [n] by Thai speakers because the phoneme /l/ in Thai does not occur finally. The third category is composed of sounds that may sound similar to Thai equivalents but are phonetically different, such as the English retroflex /r/ and the Thai trill /r/.

Kanokpermpoon's (2007) investigation into areas of difficulties when Thai speakers pronounce English consonant sounds shows that the sounds that do not exist in Thai were found to pose a lot of difficulty for Thai speakers. These problematic consonant sounds are /v/, /θ/, /ð/, /z/, /ʃ/, /ʒ/, /tʃ/, /dʒ/, /g/, /l/, and /r/ when appearing in word-initial and -final positions. Pronunciation errors on those sounds are reported and summarized from his paper as follows.

The English voiced consonants are usually replaced with their nearest equivalents in Thai. For example, /v/ is replaced by /w/ in word-initial and by /f/ in word-final position, /z/ is replaced by /s/, and /g/ is replaced by unaspirated /k/. Of the English interdental fricatives, /θ/ is converted to stops /t/ or /tʰ/, and /ð/ is replaced by

/d/. The fricatives /ʃ/ and /ʒ/ and the affricate /tʃ/ are all realized as the Thai aspirated affricate /tɕʰ/. The other English affricate, /dʒ/, is replaced by the Thai unaspirated affricate /tɕ/. The English lateral approximant /l/ and the retroflex /r/ are often mixed up and pronounced interchangeably, with /l/ and /r/ usually being pronounced as [l] word-initially. In addition, the retroflex /r/ is frequently replaced with the Thai flap or tap /ɾ/ when it occurs before a vowel. Furthermore, Thai speakers often replace final obstruents with inaudible stops. For instance, /θ/, /ð/, /z/, /ʃ/, /ʒ/, /tʃ/, /dʒ/ occurring finally are likely to be replaced by [tˀ]; /v/ is converted into [pˀ]; /g/ is pronounced as [kˀ]. In other cases, final sounds such as /r/ and /l/ are prone to omission.

According to Kanokpermpoon's observation, the English /l/ causes pronunciation difficulty for Thai speakers only in word-final position, not in other positions, because Thai also has /l/ in its sound system. Therefore, the present study excludes the English /l/ from investigation, leaving only ten English consonant sounds: /v/, /θ/, /ð/, /z/, /ʃ/, /ʒ/, /tʃ/, /dʒ/, /g/, and /r/, none of which occur in Thai.

Theories and Concepts in Explanation of Problems in Acquiring L2 Pronunciation

There are a number of factors that account for learners' difficulty in acquiring L2 pronunciation. Research on second language acquisition reveals that factors such as first-language transfer, individual differences, learners' ages, exposure to the target language, motivation, and instructional methods must be taken into consideration (Archibald, 1998; Piske, MacKay, and Flege, 2001; Khamkhien, 2010). Accordingly, only certain factors relevant to the objective and the research questions of the present study are discussed as follows:

1. Influence from the Mother Tongue

The influence from the learner's L1, or language transfer, is defined by Dulay, Burt, and Krashen (1982: 101) as "the use of past knowledge and experience in new situations." According to Archibald (1998), language transfer is one of the most recognizable traits of an L2 learner's speech. For example, the pronunciation of the English word *have* by a native speaker of French and a native speaker of German is different (Archibald, 1998: 2). This is because L2 learners are likely to replace new

elements with those from existing categories in their L1, giving rise to the learner's foreign accent when speaking in the target language (Richards, 1977). Richards also states that difficulty in learning L2 pronunciation arises from two factors: the problem of perceiving sound contrasts and the articulatory problem of producing unfamiliar sounds or familiar sounds in unfamiliar positions (Richards, 1977: 122).

L1 transfer forms the foundation of a renowned hypothesis proposed by Robert Lado in 1957 called the Contrastive Analysis Hypothesis (CAH), whose goal is to make predictions about L2 learners' problems and to give explanations based on a thorough comparison of L1 and L2 linguistic systems (Saville-Troike, 2006: 34). The hypothesis states that L2 acquisition is filtered through L1. So, L1 structures can facilitate L2 acquisition if they are similar to structures in the L2, but L1 can also interfere with L2 acquisition if L2 structures are different or nonexistent in the L1. Therefore, influences from L1 result in two kinds of transfer: positive transfer and negative transfer. (Celce-Murcia et al., 2010: 22).

Proponents of the CAH believed that a rigorous analysis of similarities and differences between learners' native language and target language would enable the prediction of difficulties for learners and provide appropriate guidance for language instruction (Wardhaugh, 1983). According to Wardhaugh, the CAH is stated in two versions: a strong version that aims to predict errors and a weak version that aims to explain errors after the fact. While the strong version has been criticized as impracticable and overly demanding for a rigorous analysis between similarities and differences of the learner's L1 and L2, the weak version seems to have more usefulness (7). The weak version requires no detailed contrastive analysis of the two languages since it aims to explain the difficulties found in the learner's L2 production based on the similarities and differences of the two linguistic systems (10).

However, Oller and Ziahosseiny (1970 cited in Major, 2008), proposed a moderate version of CAH, arguing that similar phenomena in L1 and L2 are more difficult to learn than dissimilar phenomena since they found that speakers whose native languages did not use the Roman alphabet made fewer spelling mistakes than those whose native languages did. Therefore, they claim that "similar structures in L1 and L2 cause more difficulty than dissimilar structures" (cited in Major, 2008: 65). Not only did Oller and Ziahosseiny find such results, Major also claims that there are

numerous studies that confirm that “the larger the differences are, the more easily they tend to be noticed; therefore, learning is more likely to take place” (72). Conversely, if there are only small differences, they are more difficult to notice, resulting in more chances of negative L1 transfer. For example, the English aspirated alveolar stop [t^h] and the French unaspirated dental stop [t] differ in terms of place and manner of articulation, but they are pronounced very similarly because both sounds are voiceless coronal stops. When speaking French, an English speaker may use the English [t^h] instead of the French [t] because the differences are small. However, the same English speaker may not substitute the English retroflex [r] for the French *r* because these two sounds are considerably different.

Today, the popularity of the CAH has diminished due to the fact that the hypothesis does not account for all errors that L2 learners produce and not all, L2 learners’ errors come from dissimilar structures as predicted by the CAH (Saville-Troike, 2006: 37). The moderate version of CAH has been criticized for not predicting which L1 structures will be transferred to the L2 and which will not (Major, 2008: 66). Furthermore, the CAH fails to account for the fact that L2 production gradually develops over time (Leather, 1999: 28). These flaws in the CAH have, therefore, reduced the viability of the hypothesis as other new concepts and theories in the field develop.

Nevertheless, Edwards and Zampini (2008: 3) observe that the CAH still plays a role in many L2 pronunciation texts and pedagogical guides, such as Swan and Smith (2001). Similarly, Celce-Murcia et al. (2010: 23) note that the role of L1 transfer, particularly negative transfer, is still valid in accounting for foreign accents especially with regard to the acquisition of distinctive segmental features such as aspiration or voicing and of suprasegmental features such as intonation and rhythm.

The approach that arose after the decline of the CAH was the methodology of Error Analysis (EA), which examines learner errors in order to investigate the learning process (Ellis, 1994). To analyze the learner errors after collecting a sample of learner language, systematic errors have to be identified and classified according to language level, e.g., phonological, morphological, or syntactic errors. Errors are then classified mainly by whether they are intralingual or interlingual errors, and finally errors are evaluated as to how much they affect intelligibility or social acceptability.

However, EA also has some weak points that should be taken into consideration. According to Saville-Troike (2006: 40), these weak points are ambiguity in error classification, lack of positive data on what the learner has acquired, and potential for avoidance.

2. The Interlanguage Hypothesis

As noted in James (1986: 4), the language L2 learners produce not only reflects influences from the L1 but usually shows signs from the L2 as well due to different progress of acquiring L1 and L2 knowledge. He explains that in L1 acquisition there is only one language involved in children's learning because they progress from zero knowledge to adequate mastery. On the other hand, in L2 acquisition, learning progresses from one language as the basis to another, or from monolingualism to be bilingualism. As a result, two languages are involved in the progress of knowledge, during which L2 learners' language occupies on 'intermediate space' between the first language and the second language.

The term *interlanguage*, coined by Selinker (1972), is used to refer to this intermediate stage of L2 learners' speech. To illustrate this point, Figure 2.1 is adapted from James (1986: 5) and Archibald (1998: 2).

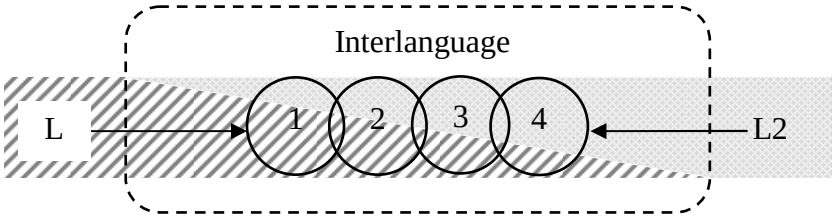

Figure 2.1 Influences on interlanguage

As the arrows show, interlanguage is influenced by characteristics of both the L1 and the L2 as it develops stage by stage towards the target norm, demonstrated by the numbers 1–4. Different shadings indicate the amount of influence from either language at each stage of development. It is common to find a large amount of L1 interference during earlier stages, which then decreases gradually as L2 learners' proficiency improves to approach the target norm.

Celce-Murcia et al. (2010) explain the concept of interlanguage as the linguistic codes of L2 learners that reflect unique systems. Unique, in this case, means that the interlanguage grammar is subject neither to the learners' mother tongues nor to the target languages; instead, it has its own system, which includes both L1 and L2 structures, as well as language universals and communication strategies. Moreover, there is a phenomenon called *fossilization*, which causes a plateau in language learning. It is believed that L2 learners will have great difficulty in getting beyond this stage without exceptional effort and motivation.

The notion of interlanguage has been further developed by Corder, who views interlanguage as a dynamic continuum of development in which L2 learners possibly achieve a target-like system (1992: 25). In Corder's view, the interlanguage hypothesis can account for the acquisition of the L2 phonological system because the acquisition of L2 pronunciation is "a matter of progressively restructuring the mother tongue phonological system in the direction of the target language" (23). Corder also stresses that the starting point of the developmental continuum of second language acquisition is a basic, simple, and possibly universal grammar which differs from that of L1 and L2 (25).

Tarone (1978 cited in Jones, 2002: 181) notes that simplicity in L2 learners' utterances in the earlier stages of learning reflects a universal tendency rather than influence from the mother tongue. Factors such as overgeneralization, approximation, and avoidance become somewhat more significant. Moreover, Maken and Ferguson's (1987 cited in Jones, 2002:181) contend that the phonological processes found in L2 acquisition, such as substitution, assimilation, deletion, and reduplication also occur in L1 acquisition, which may indicate the involvement of universal phonological processes in L2 acquisition (181).

Archibald (1998: 4–8) discusses the nature of interlanguage by drawing upon Major's (1987) Ontogeny Model of second language acquisition. In this model, two types of errors are found in interlanguage grammar: transfer errors and developmental errors. The illustrations from Archibald (1998: 5) presented in Figure 2.2 depict the frequency of these two types of errors over the course of L2 acquisition.

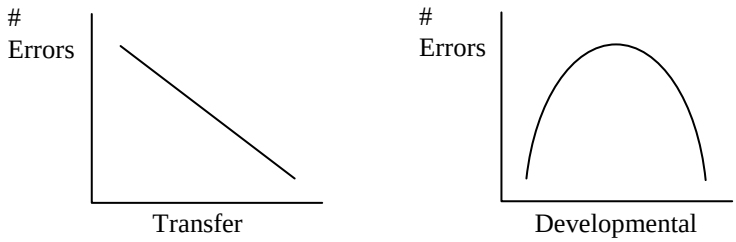

Figure 2.2 Error patterns predicted by the Ontogeny Model

The model holds that transfer errors occur quite frequently at the beginner level, moderately at the intermediate level, and relatively rarely at the advanced level. In contrast, the frequency of developmental errors starts low and then increases as learners pass through the intermediate level because learners have learned some rules in the L2 yet have not mastered all the exceptions. Therefore, learners are likely to overgeneralize those previously learned rules in inappropriate contexts. However, as they pass from the intermediate level to the advanced level, developmental errors gradually decrease. One thing that will be noticed from the graphs is that advanced learners are expected to produce a low number of both transfer errors and developmental errors.

To summarize the concept of interlanguage, Ellis (1997: 33–34) lists six observable facts:

1. Interlanguage represents the L2 learner's mental grammar, which is a system of linguistic rules governing their comprehension and production of the L2.
2. The learner's grammar is permeable, meaning it is influenced not only by the input but also by internal processing. This is evident from the occurrence of errors such as omission, overgeneralization, and transfer.
3. The interlanguage is not stable; the learner reconstructs the mental grammar as their knowledge of L2 develops more complexity. This results in the interlanguage continuum.
4. The interlanguage system contains variable rules at any stage of development. Such variability can be viewed as either mistakes in performance or errors in competence; thus, this issue is still disputed among researchers in the field.
5. Errors that the learner produces in the interlanguage indicate that the learner is using learning strategies to develop their interlangauge.

6. The learner's grammar is likely to stop developing before the learner reaches native-like competence due to fossilization. As a result, errors that occurred in the earlier stages can reappear in the later stages. This is called *backsliding*.

3. The Markedness Theory

Another theory explaining learners' difficulty in L2 acquisition that has received much attention involves the notion of markedness. Maken and Ferguson (1987 cited in Jones, 2002: 181) note that phonological processes such as substitution, assimilation, deletion, and reduplication are evident not only in L1 acquisition but also in L2 acquisition. This shows that difficulty in acquiring L2 pronunciation appears to be universal, and this difficulty may lie in the linguistic features themselves. Thus, the markedness hypothesis predicts that "certain features are inherently more difficult than others, regardless of the learners' language backgrounds" (Jones, 2002: 181). Features that are more complex, less frequent, and more limited are considered marked; conversely, those that are more basic, frequent, and universal are considered unmarked (Celce-Murcia et al., 2010: 25). As a result, the markedness hypothesis posits that unmarked features are acquired before marked features.

The notion of markedness has been identified and applied in different ways. Major (2008: 78) states that markedness can be viewed in terms of hierarchical relationships or statistical frequencies and can even be applied to L1 acquisition. In the field of second language acquisition, Major (2008: 78) states that Eckman's (1977) Markedness Differential Hypothesis (MDH) is supported by a number of studies in phonological acquisition, such as studies of voicing contrasts (Major and Faudree 1996; Yavas 1994), epenthesis in initial consonant clusters in Egyptian learners of English (Broselow 1983), and more. Table 2.1, taken from Saville-Troike (2006: 56), summarizes the essence of Eckman's MDH.

Table 2.1 Markedness Differential Predictions for SLA (Saville-Troike, 2006: 56)

Markedness Differential Predictions for SLA		
Feature in L1	***Feature in L2***	***Prediction***
Marked	Unmarked	L2 feature will be easy to learn
		L1 feature will not transfer to L2
Unmarked	Marked	L1 feature will transfer to L2

Here, it is predicted that L2 learners will have difficulty learning marked features, so L1 features which are unmarked or less marked are expected to transfer into L2 production. In other words, problems in learning L2 constructions occur when they are more complex than those in the learners' L1. Also, the markedness relationship implies only one direction. That is, if a language contains marked features, it should contain less marked ones, but not necessarily the other way round (Ortega, 2009: 38). For instance, Saville-Troike (2006: 56) states that in acquiring English initial CC consonant clusters, as in *school*, Spanish L1 speakers should have difficulty pronouncing the cluster because Spanish does not allow two voiceless consonants in syllable-initial position. As a result, it is common for Spanish speakers to simplify the English cluster, which is a marked feature, by adding a vowel before the cluster. So, they pronounce *school* as [ɛs-kul].

It can be seen that the markedness theory resembles the CAH in predicting areas of difficulty based on L1 and L2 comparative studies. However, as Saville-Troike (57) points out, the markedness theory delves into abstract patterns, principles, and universal constraints to explain why some L1 structures are transferred into L2 production and why some are not. Likewise, Ortega (2009: 37) agrees that the markedness principle is successful in outlining directions of L1 features transfer during L2 acquisition, observing that "each marked member presupposes the existence of the less marked members, and never the other way around."

4. Exposure to L2 Sounds

Other than the linguistic influences discussed earlier, lack of opportunity to practice L2 pronunciation is another major factor that prevents learners from acquiring a native-like L2 accent and reinforces substitution of the L1 phonology

(Khamkhien, 2010: 758–59). Studies reviewed by Khamkhien such as Siriwisut (1994) and Serttikul (2005) show that learners' pronunciation ability is affected by the amount of exposure to the target language in their daily lives. These studies suggest that students receiving more exposure to the target language were likely to evince good pronunciation due to less transfer from L1 pronunciation, as opposed to those receiving exposure to the L2 sounds.

Celce-Murcia et al. (2010: 19) stress the importance of exposure, noting that the less opportunity L2 learners have to be in the target language environment, the more difficulty they will have in learning L2. Accordingly, teachers are obliged to compensate for this inadequacy by providing more L2 experiences in all aspects of language.

Degree of exposure to the target language is a variable that is also mentioned in Krashen's (1982) language acquisition theories. According to Krashen, learners acquire language implicitly through a large amount of exposure to language input that is a little bit beyond the learner's current level yet still comprehensible to the learner (21). With the input hypothesis, Krashen prioritizes successful communication with fluency before mastery of structures because he believes that receiving sufficient input will eventually result in acquisition of those structures naturally, in much the same way that L1 is acquired (21–22). Thus, intensive exposure to comprehensible input is necessary and sufficient for achieving language acquisition.

On the other hand, some researchers argue that although exposure to the target language is important input is necessary but not sufficient for L2 learners to acquire the target language. Evidence is reported in Schmidt's (1983) case study of Wes, an adult ESL learner who had been exposed to English for a long time but never seemed to develop his English grammar. Schmidt drew on several factors to account for Wes's case. One of the factors was that Wes lacked interest in linguistic analysis and hence, did not improve his linguistic competence (171). Schmidt's conclusion follows:

> The question which remains unanswered is whether or not adults really can acquire much grammar through interaction [with the input] alone. If by acquisition we mean to include only wholly unconscious learning, I believe the answer is no, they cannot. (Schmidt, 1983: 172)

Schmidt (1990) later developed the finding from the case of Wes into the notion of noticing. Schmidt reminds us that not all language input can be taken as intake for learning; rather, "intake is that part of the input that the learner notices" (139). Additionally, Schmidt (1993) brings up the notion of specific focus to extend the Noticing Hypothesis as follows:

> [W]hat must be attended to and noticed is not just the input in a global sense but whatever features of the input that are relevant for the target system (Schmidt in press); that is to say, in order to acquire phonology one must attend to phonology; in order to acquire pragmatics, one must notice both linguistic forms and the relevant contextual features. (Schmidt, 1993: 209)

Based on the above, it appears that adult second-language learners learn what they consciously notice and pay attention to but do not learn much about the things they disregard. Therefore, exposure and attention to linguistic features are essential components supporting L2 learning.

5. Age and the Critical Period Hypothesis (CPH)

The ability to attain native-like proficiency in pronunciation is strongly believed to be related to age. A lot of prior research has pointed out that L2 learners who start to learn a second language at an earlier age and in natural environments are more likely to sound like native speakers than adults are (Flege et al., 1995; Piske et al., 2001; Abu-Rabia and Iliyan, 2011). This has given rise to a hypothesis called the Critical Period Hypothesis (CPH), which holds that "there is a period when language acquisition takes place naturally, or effortlessly, and that after that period something happens that makes language acquisition difficult, or at least, different" (Archibald, 1998: 18). This period, which Dulay et al. (1982) say is the turning point in language acquisition, is claimed to end around puberty as a direct result of brain maturation; however, the exact extent of the period is still controversial.

The Critical Period Hypothesis and the effect of age have been widely discussed, particularly with regard to phonology. From a neurological point of view,

Scovel (1988 cited in Ioup, 2008: 41) states that “phonological accents in a second language (L2), more than other linguistic skills, would most exhibit age effects because accent was the only part of language that was physical and demanded neuromuscular programming.” Because hundreds of muscles, such as larynx, lips, and tongue, are used in the articulation of human speech, a degree of muscular control is required for L2 learners to achieve a native-like accent. This might explain why L2 learners who start learning a second language when they are young, perhaps around the age of five, are able to develop better control of the speech muscles than adult L2 learners who have been learned to control the speech muscles only to produce L1 sounds (Brown, 2000: 58). Therefore, Hide and Van de Poel (2002: 29) note that L2 learners often use the automated articulation patterns from their L1 instead of new and slower articulation patterns when pronouncing L2 sounds.

One piece of evidence is used to explain how age and language acquisition ability are connected is the phenomenon known as brain lateralization, or the assigning of certain functions to the specific hemispheres of the brain. The brain is divided into two main halves or hemispheres: the left hemisphere (LH) and the right hemisphere (RH). Each hemisphere is responsible for processing different kinds of activity. For example, most people process much of logic and language in the left hemisphere and non-verbal information and emotions in the right hemisphere. The process of locating these functions in the hemispheres is called lateralization.

Lenneberg (1967) and Scovel (1969), both cited in Brown (2000), suggest that lateralization may begin around the age of two and is completed around puberty. This is why young children can acquire L1 and L2 more easily than adults. Before the brain becomes lateralized, children are neurologically assigning various functions according to each hemisphere’s functions, including both first and second language. Thus, as the brain matures, something happens to it which gradually reduces its ability to acquire fluent control of a second language.

Although a number of studies have similarly found that children have an advantage over adults in learning pronunciation of a second language, Pennington (1995: 102 cited in Jones, 2002: 179) points out that adults and adolescents have skills such as “ability to compare and contrast and recognise patterns in speech not available to children.” The fact that adults do better at analytical activities may be owing to the

mature brain. Brown (2000: 62) suggests that “the lateralization hypothesis may provide another key to cognitive differences between child and adult language acquisition.” When children are mature, the left and the right hemispheres are also completed, and the left hemisphere, which controls the analytical and intellectual functions, becomes more dominant than the right hemisphere, which controls the emotional and non-verbal functions. Thus, it is possible that adults tend to overanalyze and are too intellectually centered on the task of second language learning, making them superior to children at explaining language rules and using meta-linguistic knowledge.

Therefore, the L2 learner’s age must be taken into consideration when planning the way in which L2 pronunciation should be taught because “learners of different ages may respond differently, both emotionally and cognitively, to different kinds of teaching approaches and task types” (Brown, 1992 cited in Jones, 2002: 179). Brown further suggests that young learners might learn L2 pronunciation successfully with activities that employ imitation, while older learners might have to be taught using a more descriptive or analytic approach to allow them to make use of their maturity and analytical skills.

6. Instruction of L2 Pronunciation

Murphy (2003: 113–15) summarizes the three primary trends of pronunciation teaching in the classroom from the past to the present as follows.

The first orientation had its heyday in the 1940s–1950s with the concept of “Listen carefully and repeat what I say” (113). Learners had to listen and memorize the sentence patterns they heard and then repeat them after the teacher because the goal was to have the learners sound the same as the model. There was no explicit pronunciation teaching in this orientation, so the learners had to listen carefully and try to copy the sounds they heard as closely as possible. This concept of pronunciation teaching was based on behaviorist theories which contended that “the human being is an organism capable of a wide repertoire of behaviors” (Richards and Rodgers, 2003: 56). To elaborate, behaviorists believe that people’s behaviors can become habits and continue to develop depending on three factors in learning: stimulus, response, and reinforcement, as shown in Figure 2.3

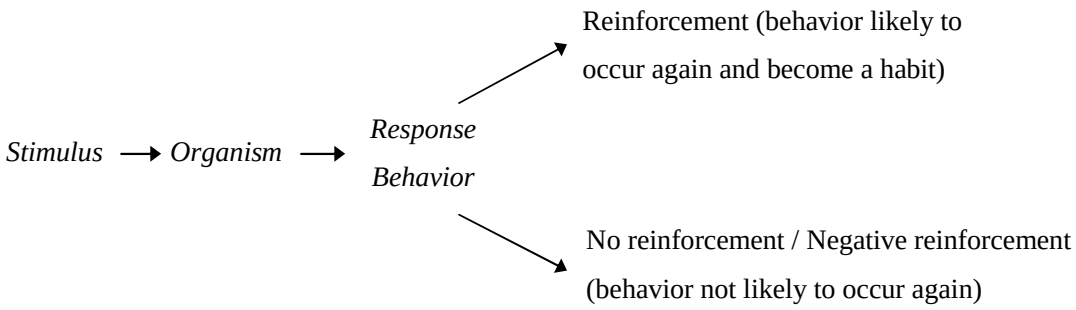

Figure 2.3 The learning process according to behaviorism
(Richards and Rodgers, 2003: 57)

Explain in terms of the first orientation to teaching pronunciation, the *stimulus* is the pronunciation drills and the models given as the input to the learner, who is the *organism*. Then, the learner imitates and reproduces the sounds. This stage, which occurs after the organism receives the stimulus, is called *response behavior*. On the other hand, if the learner produces a satisfactory response, he or she receives *reinforcement* from the teacher, which could be a compliment or a reward, leading the learner to perform the same behavior again. On the other hand, if the learner does not produce a satisfactory response, in other words, pronounces the sound incorrectly, the teacher will not give him or her a compliment and might inflict punishment, i.e., negative reinforcement, instead. Thus, such an unsatisfactory response is not likely to happen again.

The second orientation dominated the 1960s–1970s with the concept of "Let's analyze these sounds closely to figure out how to produce them more clearly" (Murphy, 2003: 113). This orientation contrasts with the previous in that it aims to teach pronunciation explicitly. It places more emphasis on the learner's mental abilities than on behavioral abilities. The teacher might present visual and audio learning materials to help the student learn about features of the sound system in the target language. The teacher may teach the learner phonetic symbols such as the IPA (International Phonetic Alphabet) in order to familiarize him or her with the sounds and enable him/her to use phonetic transcription as a tool to learn speech sounds. This orientation not only aims to teach isolated sounds (phonemic contrasts) but also

intends to teach pronunciation across the word level, such as word stress, linking, and intonation.

The third orientation started in the 1980s with the concept of “Let’s start using these sounds in activities as soon as we can while I produce cues and feedback on how well you’re doing” (Murphy, 2003: 114). This orientation places more emphasis on interactive classroom activities after a brief explanation of the production of sounds so that learners will have opportunities to use the target sounds in meaningful communicative tasks using authentic materials that can be found in real-world contexts. As Murphy explains, “classroom tasks are structured for learners to focus on the expression of meaning while teachers listen in, monitor how well their students are doing, and lend support” (115). Another characteristic of the third orientation is that it pays more attention to suprasegmental features such as word stress, rhythm, and intonation.

These three orientations reflect the trends in pronunciation teaching from the past to the present starting with the listen-and-repeat method, then giving more emphasis to explicit pronunciation teaching, and finally moving to using authentic learning materials to practice the target sounds. With regard to the history and scope of pronunciation teaching, Celce-Murcia et al. (2010: 2) identify two general approaches: intuitive–imitative approaches and analytic–linguistic approaches. These two approaches are discussed below.

The Intuitive–Imitative Approach comprises teaching methodologies that rely on the learner’s ability to listen and imitate the sounds of the target language without any explicit instructions. Good models from the teacher and from teaching materials such as tape cassettes, language labs, CDs, and DVDs are essential sources for the learner to listen to in order to learn pronunciation.

In contrast, the Analytic–Linguistic Approach makes use of linguistic information and tools such as phonetic alphabets, detailed descriptions of how sounds are produced, and explicit teaching. These aids are used to supplement pronunciation teaching. The learner is told to pay attention to the sounds and rhythm of the target language. Celce-Murcia et al. state that the latter approach does not attempt to replace the former one; instead, it aims to develop the Intuitive–Imitative Approach by incorporating linguistic understanding into its practice.

In this study, the direct-teaching method primarily follows Murphy's (2003) second orientation of pronunciation teaching, in which rules, explanations, and phonetic symbols are emphasized. It also employs tasks from Celce-Murcia et al.'s (2010) Analytic–Linguistic Approach. Imitation of pronunciation models was employed with both the direct-teaching group and the English-song group. The use of English songs mainly follows Murphy's first orientation and part of the third orientation of pronunciation teaching, as well as Celce-Murcia et al.'s Intuitive–Imitative Approach. Although students were taught without overt explanations of phonological rules or the usages in which sounds are produced, they received feedback from the researcher on their pronunciation of words and phrases when it did not directly concern the problematic sounds.

There are some additional concepts on L2 processing that are relevant to pronunciation teaching. Morley (2001: 74) says that people process a stream of sounds in two modes: bottom-up and top-down. Bottom-up processing involves paying attention to small details of the language input at the segmental level before making sense of larger units such as phrases and sentences. Top-down processing works the other way round. Attention is first paid to the overall meaning of the language input before a closer look is taken at small details. This resembles learners paying attention to general pronunciation before considering sound segments.

Another relevant concept on L2 processing is explicit and implicit knowledge. According to Brown (2000: 285), explicit linguistic knowledge results from learning facts about language and language rules, while implicit knowledge is automatically derived from performing language tasks without being taught via clear explanations. In other words, learners who have implicit knowledge may be able to use the L2 but may not be able to articulate the rules of a particular attention as those who have explicit knowledge.

It will be observed that the direct-teaching method mainly employs bottom-up processing and provides explicit knowledge to facilitate the pronunciation of the target phonemes. The use of English songs, in contrast, employs top-down processing in order to give students implicit knowledge of the pronunciation of the target phonemes through exposure to English songs.

Theoretical Support of Using Songs in L2 Pronunciation Teaching

Songs are recommended by a number of teachers and researchers to be used as teaching materials (Saslow et. al., 2007; Shen, 2009). Songs are easy to remember and serve as memory aiding tools (Salcedo, 2002). Songs can increase learners' motivation and improve language abilities, particularly listening skills (Chen and Chen, 2009). Furthermore, songs provide learners with friendly and relaxing atmosphere which supports language acquisition (Kind, 1980; Griffee, 1992; Lake, 2002–2003). The following discussions examine theoretical supports in using songs to teach L2 pronunciation.

1. The Input Hypothesis

Learners can learn language through songs because songs provide comprehensible linguistic input, which is essential for language learners to acquire the target language. According to the Input Hypothesis (Krashen, 1982), acquisition takes place when the acquirer receives language input that is a bit more difficult than the current level of the acquirer yet still understandable. The acquirer will then develop their competence to the next level. Krashen refers to such input as *comprehensible input* in the level of '*i* +1,' where *i* is the current level of competence and +1 identifies the language that is a bit more of the next level but not too difficult to understand. Krashen asserts that, although the input is more difficult, the acquirer can understand it because, in real communication, we do not solely rely on linguistic competence. We also rely on contexts, knowledge of the world, and extra-linguistic information such as gestures and facial expressions (21–22). Although this hypothesis has been criticized for the vague definition of comprehensible input and the imprecision of the formula (White, 1987; Repova, 2004), it is considered one of the most influential theories in L2 acquisition (Ellis, 1994: 273). For example, the Input Hypothesis underlies the teaching methods called Total Physical Response (TPR) (Cantoni, 1999: 55). In addition, the hypothesis contributes to the arrangement and design of teaching materials (Wu, 2010). In the present study, a scaffolding of environmental clues, such as using knowledge of the world and extra-linguistic clues to help the students understand the input more clearly, is adopted to support the advantage of songs in making pronunciation in songs comprehensible.

Song lyrics constitute natural language input because they are not deliberately composed for language instruction. The lyrics of songs often express feelings about love, friendship, or holiday celebrations and even mirror current events in society. Thus, it is not too difficult for listeners to understand the overall meaning of songs, yet it is suitably challenging for learners to grasp new vocabulary and expressions from songs and to understand the meaning of songs in more detail. In addition, there are various kinds of songs for learners to listen to, so learners have many options to choose from according to their musical tastes and levels of language complexity.

In addition to words in the lyrics, songs also come in the form of music videos in which other modes of communication are used to convey the meaning. Garza (1994) notes that well-selected music videos may provide multiple modes of communication that are necessary to promote foreign language learning. Different modes found in music videos include audio (music), textual (lyrics), visual (images), and gestural (gestures), all of which are presented in combination. These multiple modes of communication can aid learners in understanding the language and pronunciation in songs. As learners watch the music video, they can observe the movements of the lips and the tongue and imitate the singer's articulation of words. Therefore, the multiple modes contained in songs are believed to enhance the meaning of songs and make them comprehensible to learners in a less threatening way. Moreover, if music videos are what Garza calls *concept videos*, i.e., videos that have a cast of characters to tell the stories in the lyrics, the correlation of images and situations with the lyrics will reinforce the meaning of the target language.

Moreover, with written lyrics, the pronunciation of words in connected speech can be made comprehensible and concrete to the learners. For example, they can learn the phonological processes of assimilation (e.g., *getcha* as oppose to *get you* and *betcha* instead of *bet you*), deletion (e.g., *'bout* for *about*), and reduction (e.g., *gonna* for *going to*) by reading the written lyrics while listening to the song.

2. The Affective Filter Hypothesis

Songs and music are best known for their potentials to create relaxed and receptive states in the listener as well as to affect the deep-emotional touch (Murphey, 1992a: 3). These qualities of songs can lower what Krashen (1982: 31–32) called *the*

affective filter by promoting a warm and friendly atmosphere so learners will let the input pass into the brain and bring about language learning. The operation of the affective filter is illustrated in Figure 2.4 below.

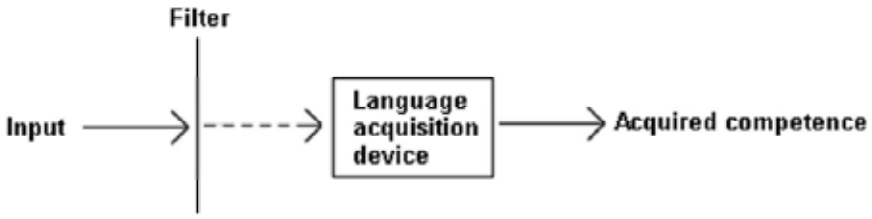

Figure 2.4 The operation of the affective filter (Krashen, 1982: 32)

According to Krashen, acquisition takes place when the affective filter is weak. The filter can be weakened or lowered when learners are highly motivated and feel confident and relaxed. Such a condition allows the input to enter the Language Acquisition Device (LAD) in the brain, triggering acquisition. On the other hand, if learners have little motivation, lack self-confidence, and feel anxious, these factors will strengthen the filter and prevent the input from entering the LAD. As a result, acquisition will not occur or, at least, will occur to only a small extent.

Therefore, simply supplying learners with comprehensible input is not enough for learning; it is also necessary to foster a less threatening atmosphere so that learners will have more confidence in class and positive attitude.

Merrell (2004: 8) suggests that “learning a new concept through a song or listening to music is less threatening than a lecture or worksheet.” Similarly, Kind (1980), Shen (2009), Medina (2010), and Murphey (1992a) note that learning the target language through songs is more enjoyable than via drills and other conventional classroom materials. When learners feel more relaxed and less anxious, it creates an ideal condition for language learning to take place. The language input, i.e., the pronunciation of the target language, can easily pass through the filter to the LAD and stimulate acquisition.

3. The Song Stuck in My Head Phenomenon (SSIMHP)

The most recognizable traits of songs are repetition of the lyrics and a memorable tune. After listening to songs, the rhythm and words seem to stick quickly in the mind of the listener (Adkins, 1997). Owing to this feature, repetition in songs is

expected to play a role in improving L2 learners' pronunciation. Merrell (2004) states that songs give learners opportunities to practice listening and pronouncing the sounds in the lyrics. Repetition of sounds, especially in the chorus, which usually repeats 3–4 times, can help learners to internalize sound patterns they hear without boredom (9).

Since songs appear to stick in the learner's mind easily, Murphey (1990: 58) calls this attribute the Song Stuck in My Head Phenomenon (SSIMHP), referring to the way in which songs echo in our minds even after it has stopped. Murphey remarks that this phenomenon occurs quite commonly (59). It involves the involuntary rehearsal of songs and tunes we have heard, and sometimes it seems as if the song will never get out of our heads. It takes only a few minutes to activate the phenomenon, but once this involuntary rehearsal gets started, both the music and the language in songs may stick in the mind for days or even years (60–61). Vaughans-Rees (1992: 47) provide a clear illustration of the SSIMHP's ability to aid memory when he notes that he can still remember perfectly every word of songs and chants sung about 40 years ago, while he would find it more difficult to repeat anything said to him in prose after 40 minutes.

For this reason, the more learners listen to and sing songs in the target language, the better they should be able to remember how the words in those songs are pronounced. The sounds and the pronunciation of songs should stick in their mind, allowing learners to practice them more easily and naturally by singing along. Papa and Lantorno (1979: viii) add that "Songs are unforgettable. Unlike drills, which usually slip from students' minds as soon as they leave the classroom, songs can last a lifetime and become part of one's own culture."

Related Studies

A goodly amount of SLA research has demonstrated a number of positive results from using songs in the classroom to teach various aspects of language. Previous studies (Abrate, 1983; Anton, 1990; Willis and Mason, 1994; Medina, 2002; Lake, 2002–2003) have found that incorporating songs in the classroom not only enhances language ability but also creates affective impacts on the learners so that they eventually develop their interest and start to like the target language more.

In the following sections, I review studies by Hayes (n.d.), Tình (n.d.), and Rengifo (2009) that argue in favor of using songs to improve L2 pronunciation. On the other hand, studies by Tuan (2010), Hide and Van de Poel (2002), and Yangklang (2006) argue in favor of using minimal-pair drills in explicit teaching, which is part of the use of the direct-teaching method used in this study.

1. Previous Studies on Using Songs to Teach L2 Pronunciation

Hayes (n.d.) used popular Chinese songs to teach Chinese as a foreign language to a class of ten secondary-school students in the UK aged 14–15. Pronunciation, grammar, and vocabulary were the key elements focused on. Hayes introduced a song and briefly explained the story of the song and a few key vocabulary items and then sang with the students a couple of times. Out of the class time, she set up an online classroom which contained a song database that she had created in order to help the students practice listening to and singing songs at home. She also gave the students regular assignments such as having them sing and record their singing, to check their learning progress.

After the course ended, Hayes observed from the students' assignments that their Chinese pronunciation had gotten better, with some of them showing great improvement in their pronunciation. She concluded that the students were able to observe Mandarin pronunciation and increase knowledge of vocabulary and grammar through songs. Most importantly, Hayes argued that when learning a foreign language through songs, "[the students] feel that they are singing for fun instead of doing lots of repetitions for language learning and it also gives them great confidence to learn Mandarin Chinese" (8).

Tình (n.d.) surveyed the attitudes, opinions, and suggestions of teachers and Vietnamese students of grade 11 at Nguyen Gia Thieu high-school after using English songs to teach the pronunciation of English sound segments. The findings showed that more than 80% of the teachers and the students liked to have English songs in pronunciation lessons because songs reduce boredom in class, encourage the students to pay attention to the pronunciation of words in songs, and provide relaxation while they are repeating the sounds. However, most of the teachers noted that the sounds in

songs were not clear enough to hear and imitate due to the linking sounds. Similarly, the students admitted that even though they liked to learn English pronunciation through songs, they thought that the sounds in songs were not clear, the pronunciation was not always Standard English, and it was difficult to follow the speed of most songs.

Thus, Tình concluded that, because songs make the lessons more enjoyable and easier for the students to memorize, they may be an effective way to teach pronunciation (39). However, songs should be carefully selected, paying particular attention to the clarity of sounds and the speed of songs. Additionally, song activities have to be well-designed to aid pronunciation learning.

Rengifo (2009) conducted an action research on the use of karaoke to improve English pronunciation in adult learners of English. He pointed out that karaoke singing allows students to read the lyrics on the screen, sing, and go through the melodies without the singer's voice. The participants were 12–15 Spanish speakers in an adult English education institute whose ages ranged from 18 to 60. The class began with a warm-up activity in which topics to be learned were introduced. English pronunciation was taught with the use of IPA symbols, minimal pairs, and intonation practice before the students were asked to look for those patterns in the song. In the karaoke sessions, the students not only sang with the teacher but also had to sing with correct the intended pronunciation by noticing the difference between the singer's pronunciation of certain sounds and the students' pronunciation.

Rengifo stated that learning English through karaoke singing and providing meaningful activities that were related to the songs helped the students learn many aspects of pronunciation and become aware of the disparity between writing and pronunciation. Likewise, karaoke motivated the students to learn English pronunciation, and the pronunciation of the students who attended the sessions regularly notably improved (104).

2. Previous Studies on Using Minimal Pairs to Teach L2 Pronunciation

Tuan (2010) investigated the use of minimal pairs in teaching 54 non–English–major students in Vietnam to recognize and produce discrete English sounds.

The students were tested on their pronunciation ability before and after attending the experiment. In the experiment, he used software programs for learning English pronunciation as teaching and learning tools which contained phonetic symbols, visual aids, and minimal-pair exercises for practicing sound recognition and pronunciation. The students made six kinds of pronunciation mistakes: omitting word-final consonants, adding word-final /s/ to words that do not end in /s/, inserting schwas in consonant clusters, mispronouncing difficult sounds, failing to differentiate long and short vowels, and failing to differentiate voiced and voiceless consonants.

The posttest results showed that all six problems were solved after using the minimal pairs especially in mispronunciation of difficult sounds (51.80% increased) and final sound omission (50% increased). In conclusion, Tuan found that minimal pairs provided great benefits in teaching pronunciation and in learning at the word level. Findings from the questionnaires and the interviews showed strong appreciation for the effectiveness of using minimal pairs on the part of both the teachers and the students because it was successful in raising students' awareness of the correct pronunciation of discrete sounds that affect communication.

Hide and Van de Poel (2002) based their study on the Motor Theory of Speech Perception, which holds that perception and production of sounds are in a mutual relationship: people cannot hear the sounds they cannot produce and vice versa (18). They studied the interlanguage phonology of Chinese undergraduates learning English as a second language. They hypothesized that teaching pronunciation based on auditory principles may trigger perception and production in the learners before expanding to communication training. The training was done using a learner-centered approach and contextualized communicative tasks in order to promote learner motivation. Various teaching tools were used, such as mirrors to allow the learners to see their articulators while producing sounds, computer programs to record and visualize their production, video tapes to record their communication, and IPA transcriptions to explain sounds. The learners learned sounds in isolation, in minimal pairs, in syllables, and in suprasegments. The learning cycle started with a reproduction stage, in which imitation was the focus; then it moved on to the

production stage, in which the learners worked on communicative exercises, and culminated finally in evaluation exercises to describe their learning progress.

Initially, Hide and Van de Poel found a great degree of L1 influence on the learners' interlanguage, resulting in a strong foreign accent. However, after the program, the learners' sound-discrimination ability and their pronunciation improved significantly. At the segmental level, the learners were able to perceive the problematic L2 sounds more accurately, although their pronunciation of those sounds was sometimes still mixed up.

Yangklang (2006) investigated the use of a Computer-Assisted Instruction (CAI) program consisting of a balance of controlled drills and extemporaneous activities to improve learner pronunciation. The learners were 40 Thai students in grade 10, half of whom were considered to have good pronunciation while the other half had poor pronunciation. All the learners were pretested before using the program and then tested again once a week for three weeks.

The findings indicated that the pronunciation of both groups improved significantly after the use of the CAI program. Furthermore, their reactions to the program were positive. She accounted for the findings by noting that the CAI program offered a visual component, interaction with the program, repetition of learning, and no pressure from the teacher, so the learners could control their learning pace themselves. However, after using the program, the students' problem with pronouncing syllabic /l/ and /l/ in the word-final position of English loan words such as *alcohol*, *tool*, and *install* was not resolved by the program, suggesting that their pronunciation may have fossilized due to the fact that these words were commonly used and pronounced as if they were Thai words (58).

Gap in the Literature

All of the prior studies have found that L2 pronunciation can, in general, be improved with either the use of songs or the use of minimal pairs and phonetic symbols, which form part of the direct-teaching method. Researchers who advocate for songs stress the advantages of songs in enhancing learners' motivation, encouraging them to learn L2 pronunciation naturally, building enjoyable classroom

atmosphere, and bringing real-life pronunciation to the classroom. On the other hand, researchers who argue in favor of the direct teaching of sounds and practicing with minimal pairs also have significant evidence to support their claims for the improvement of the learners' pronunciation at the segmental level. The present study addresses the questions of whether using songs can improve the students' pronunciation of sound segments since most previous research on songs has concentrated on suprasegmental features. Additionally, I investigate the difference results produced by learning L2 pronunciation through songs and learning it via the direct-teaching method, which uses minimal pairs and pronunciation drills as the main activity for pronunciation practice.

Although investigation into learning English through songs is not new, i studies that investigate the effects of using English songs on language learning in Thailand mostly look into aspects other than pronunciation. For example, Phanarangsan (2000) carried out a qualitative study by interviewing high-school students who listened to English-teaching songs, referring to songs that are written for the purpose of teaching English. She found that the English-teaching songs had an effect on the listeners in memorizing vocabulary and making them enjoy learning English. However, students did not look up for more details after listening to the songs. The students were satisfied with the contents in songs, particularly vocabulary contents, and the songs' production, and they utilized songs for various purposes such as studying and entertainment.

Phanchan (2002) also deals with songs and English learning. He investigated two methods of teaching listening and speaking skills with 60 tenth-grade students who were separated into two equal groups. One method used songs as a teaching instrument. With this method, songs and activities such as cloze exercises and singing were used to practice listening and discussion. The other was conventional instruction, in which the contents were taught using explanations and activities such as games and pair work but without using songs. He found that the achievement in listening and speaking skills of students in the song group was not significantly different from that of the students in the conventional teaching group. However, the results from the questionnaire showed that the students in the songs group had highly positive opinions about the use of songs.

There are few studies that formally explore and examine the use of English songs to improve Thai students' English pronunciation. One study that investigates learning English pronunciation through songs is Sakaew (2010: abstract). He found that, after the 14 students were taught English pronunciation through songs activities, they scored 75.42% for their pronunciation performance and 83.28% for their English pronunciation knowledge, which he regarded the good level according to his criteria. However, the findings reported did not provide much detail.

The lack of empirical evidence in the investigation of the use of English songs to improve Thai speakers' English pronunciation skills leaves a gap in the literature that needs to be filled. Thus, I hope that this thesis will initiate the investigation on this matter and make a substantial contribution to the field of second language acquisition, while at the same time providing insights into the field of English language teaching.

CHAPTER III
RESEARCH METHODOLOGY

This chapter discusses the research methodology employed in this study. To begin with, an overview of the research design is presented, followed by detailed descriptions of the population and samples of the study, research procedures, and research instruments. Finally, this chapter ends with an explanation of how the data will be analyzed.

Research Design

A two-group, pretest–posttest, quasi-experimental design was employed in the study in order to compare the students' pronunciation scores before and after they received the treatments. The two independent variables were two different instructional methods: using English songs and using direct teaching. The group that received the direct-teaching method was assigned to the control group (Group 1), and the other group that received English songs as a treatment was the experimental group (Group 2). The dependent variables were the students' scores which referred to their ability to pronounce the ten problematic phonemes /ɡ/, /v/, /θ/, /ð/, /z/, /ʃ/, /ʒ/, /ʧ/, /ʤ/, and /r/. Figure 3.1 illustrates the design of the study.

Control group:	O_1	X_1	O_2
Experimental group:	O_1	X_2	O_2

Figure 3.1. The two-group, pretest–posttest design

O_1	refers to	observation from the pretest.
O_2	refers to	observation from the posttest.
X_1	refers to	treatment using the direct-teaching method.
X_2	refers to	treatment using English songs.

The quantitative data obtained from the students' scores, thus, served as empirical evidence to prove the effects of the two instructional methods on the students' pronunciation of the ten problematic phonemes.

Population and Samples

The population of the study refers to all 30 students who enrolled in the researcher's courses. They were Thai high-school students studying in the range of Mattayom 4 to 6, equivalent to grade 10 to 12, of mixed levels, schools, and genders. They were all learning English as a foreign language (EFL) at school. In this study, every student in the population was a subjects. As a result, no samples were selected out of the whole population.

Recruitment was accomplished by the researcher's announcement of two free English courses. In March 2011, the announcement was posted on the Internet and distributed as leaflets. The two courses were English Pronunciation, which emphasized problematic sounds for Thai speakers, and Learning English through English Songs, which highlighted listening and singing activities, as well as song meanings.

Students interested in attending the courses were asked to register and complete a questionnaire online, which requested basic information about their personal background, education, and English-learning experience. Only those whose backgrounds met the following four criteria were allowed to participate in the study.

First, they had to be Thai learners of English and speak Thai as their first language. A single nationality and mother tongue were preferred to produce a homogenous group of learners and reduce the possibility of influence from different mother tongues.

Second, they could not have studied in any international or English Program (EP) schools or in countries where English was spoken as the official language.

Third, they could not have ever received formal instruction or a course on English pronunciation in which sounds were taught directly and explicitly. This helped to ensure that their pronunciation ability had not been affected by learned knowledge.

Fourth, they could not ever have been to English-speaking countries before. This included holiday trips and language-learning trips because spending time in an English-speaking environment could affect the students' pronunciation skills (Piske et al., 2001: 197).

Table 3.1 summarizes the information of all 30 students in the study classified into two groups, each of which contained 15 students.

Table 3.1 Summary of Participants (n = 30)

		Group 1		***Group 2***		***Total***	
Sex	Female	14	(93.33%)	7	(46.67%)	21	(70%)
	Male	1	(6.67%)	8	(53.33%)	9	(30%)
Age	15	2	(13.33%)	1	(6.67%)	3	(10%)
	16	5	(33.33%)	0	(0%)	5	(17%)
	17	0	(0%)	4	(26.67%)	4	(13%)
	18	8	(53.33%)	6	(40%)	14	(47%)
	19	0	(0%)	4	(26.67%)	4	(13%)
Level	M.4	1	(6.67%)	1	(6.67%)	2	(7%)
	M.5	6	(40%)	3	(20%)	9	(30%)
	M.6	8	(53.33%)	11	(73.33%)	19	(63%)
School	Bangkok	13	(86.67%)	14	(93.33%)	27	(90%)
	Others	2	(13.33%)	1	(6.67%)	3	(10%)

As the table shows, there were 21 females (70%) and 9 males (30%) with age range of 15–19 (the mean age was 17.37). Most of them were studying in Mattayom 6 (63%). The majority of them came from various schools in Bangkok (90%), but a few came from provincial schools in Pracheenburi and Trang (10%).

Research Procedure

The research procedure of this study was divided into three phases. The first phase comprised the preparation of the two instructional methods, namely the direct-teaching method and the use of English songs. The second phase involved conducting the experiment by giving the students the treatments. The third phase consisted of the

evaluation of the effects of the two methods on the students' ability to pronounce the ten phonemes. Detailed descriptions of each phase follow:

Phase 1: Preparation of the Two Instructional Methods

After a large percentage of the literature review had been done, I created research instruments including lesson plans, the pre- and posttest on the pronunciation of the ten phonemes, and the evaluation form for the students' pronunciation ability. These instruments were presented to three experts for validation (see more in the Research Instruments section). Then they were revised according to the experts' comments and suggestions.

Phase 2: Conducting the Experiment

The experiment began when my courses started. Both the English Pronunciation course and the Learning English through English Songs course started on April 5, 2011, and ended on May 13, 2011, excluding the week of April 12–15 which was the Songkran public holiday. Each course took 15 hours to complete (90 minutes/period, 10 periods/course). The class met twice a week on Tuesdays and Fridays for five weeks at the Faculty of Arts, Chulalongkorn University. Both courses were taught on the same days but at different times. The English Pronunciation course started from 1 to 2.30 in the afternoon, and the other course started from 3.30 to 5 in the afternoon.

Stage 2.1 (Period 1)

In the first class, I had the students take the pretest in order to measure their current abilities to pronounce the target sounds. Students were tape-recorded reading for later evaluation by the judges. After the students finished the pretest, Iexplained the course contents and what students would be doing each week. Group 2 students were also asked to list their favorite English songs so that I would know what songs they wanted to learn.

Stage 2.2 (Periods 2–9)

Two kinds of treatments, i.e., the direct-teaching method and English songs, were given to each group during this stage. Group 1 students were given the direct-teaching method. Word lists, minimal pairs, and sound discrimination were the

key pronunciation exercises although I employed some supplementary activities such as games. They were taught about places of articulation, manners of articulation, and phonetic symbols that represent the sounds they learned. Group 2 students were given English songs as the treatment; listening to and singing songs were the main activities.

The supplementary activities used with each group were designed by me. They are detailed below.

1. Activities for Group 1

1.1 *The Broken Telephone* – This game was used to practice similar sounds in a sentence, for example, "he is *playing/praying* in the room." The students were asked to line up in three rows. The first student in each row drew a piece of paper containing a sentence. They had to remember the sentence and whisper it into the second student's ear. Then the second student whispered to the next student in the same row. The last student in each row had to write the sentence he/she heard on the board.

1.2 *Paper-Cup Telephones* – Handmade telephones were used to practice voiced and voiceless sound contrasts such as *sip–zip* and *cheap–jeep*. Since the paper-cup telephone uses the principle of sound waves traveling through a taut string, when a student from one end pronounces a voiced sound, the air from his/her speech will create a vibration that passes through the medium, i.e., the string, to the other end. This makes it easier to notice the voicing quality by feeling the vibration of the paper cup and the string when pronouncing voiced sounds in contrast with voiceless sounds.

1.3 *Identical Twins or Fraternal Twins* – This was a pair-work activity in which the students were paired up and given two word cards to read. Some pairs of the word cards contained the same word, representing 'identical twins', but some pairs contained minimal pairs, representing 'fraternal twins'. For example, a pair of students received the word *rate* on one card and the word *late* on the other card. Student A read the first word and Student B read the second in front of the class. The other students then had to identify whether these two students were 'identical twins' or 'fraternal identical twins'. In this example, Students A and B were 'fraternal twins' because, although *rate* and *late* sound similar, they are different words.

2. Activities for Group 2

2.1 *Watching Music Videos* – This presented a good opportunity for the students to notice the singer's manners and places of articulations. The students were asked to observe the singer's mouth and imitate the movement of the lips and the tongue while I paused at certain shots in the video for the students to notice.

2.2 *What Are the Missing Letters/Words* – This activity focused on rhyming words which resemble minimal pairs. The students were given a portion of lyrics with some blanks. They guessed the missing letters/words from the rhymes before listening to the song. Then they had to complete all the blanks while listening.

2.3 *Bold Words* – Some words in the lyrics were written in a bold face font so that the students would attend to how these words were pronounced. First, the students were asked to pronounce the words by themselves before checking their pronunciation against the song. This activity was designed to make the students aware of the discrepancy between spelling and pronunciation, as in "So I say a little **prayer**."

2.4 *Correct the Lyrics* – This activity reflected a real world task. Because lyrics on the Internet are not always correct, the students had to listen to the song and check whether the underlined words were correct or not. For example, "If our love was a fairy tale, I would <u>chart</u> (charge) in and rescue you."

2.5 *Lip-Synching* – This activity helped the students to practice the movement of their speech organs and prepared them to match the full speed and rhythm of the song before they had to sing out loud.

2.6 *Reading Aloud before Singing* – The purpose of this activity was to break the lyrics down into smaller lines or verses so that they could learn to read the lyrics before they started to sing. Simplifying a singing task can make singing seem easier and make students feel more confident.

<u>Stage 2.3 (Period 10)</u>

In the last period, the students were asked to take the posttest, which covered the same set of words and sentences as the pretest. Using the same test provided a

convenient way to observe changes in the students' pronunciation of words before and after they received the experimental treatments.

Phase 3: Evaluation of the Effects of the Two Methods on the Students' Pronunciation Ability

When the courses ended, the students' pretest and posttest voice recordings were passed to the three judges, who were qualified to evaluate the students' pronunciation. Judge A and Judge B were native speakers of English. Judge A was a Canadian and also an English teacher with approximately ten years of experience teaching Thai students. Accordingly, he can speak both English and some conversational Thai. Judge B was an American who can speak only English. He graduated from a technical college in State of Georgia. He had previously taught English for one year as a part-time job to seven-year-old Mexican children living in America. Judge C was a bilingual English teacher. He was an Iranian; however, he had moved to America when he was three years old and lived there for 15 years, during which time English was primarily used along with Farsi. Therefore, he was considered a Farsi–English bilingual. Judge C had taught English in Iran for five years before moving to Thailand. He continued teaching English to students from primary-school up to university level. At the time the study was being conducted, he was also doing a master's degree in communicative English at a university in Thailand. Additionally, he had taken courses on English phonetics and phonology. Thus, Judge C was considered qualified to evaluate the students' pronunciation.

The judges received 60 voice recordings all at once, consisting of both the pretest and the posttest recordings from the two groups. They were not told which ones were the pretest or the posttest or which ones were from the experimental group or the control group in order to keep them free of bias. They were asked to grade only the pronunciation of the target sounds based on the evaluation form.

When the judges completed the evaluation, the mean scores of the pretest and the posttest were compared to analyze the effects of the two methods on the students' pronunciation ability of the target sounds. The statistical analyses used in this study were descriptive statistics, paired sample *t*-test, and independent sample *t*-test calculated using SPSS 11.5 for Windows.

Research Instruments

Three research instruments were used in this study: lesson plans, the pre- and posttest on pronunciation of the target phonemes, and the evaluation form. They are described in detail below.

1. Lesson Plans

Lesson plans can be compared to a compass or a map for teachers to guide their teaching in order to reach the goal of the lesson. Jensen (2001: 403) considers a lesson plan as "a map or checklist that guides us [teachers] in knowing what we want to do next." They can be written as a simple checklist or as a detailed lesson plan. In this study, the lesson plans that the researcher wrote presented clear step-by-step directions (see Appendix A). They started with the title and objectives of the lesson, focused contents, materials used in class, evaluation of the students' performance, and teaching procedures.

For the control group, or Group 1, the researcher constructed lesson plans based on the pronunciation course book *English Pronunciation in Use* by Mark Hancock (2003). This book is suitable for both self-study and classroom use, so the students could study or review at home by themselves. It simplifies technical terms such as *voiced* and *voiceless sounds* by explaining that there is or is not voice from the throat together with illustrations of the mouth shape and the inner oral cavity (Hancock, 2003). It provides exercises and minimal pairs for receptive and productive practice. In addition, there is a section that focuses on confusing sound pairs such as /t/ and /θ/, /d/ and /ð/ which cause a lot of difficulty for Thai speakers. For these reasons, this book was selected for the main course material.

For the experimental group, or Group 2, I constructed lesson plans based on the songs that the students requested and the songs that I selected. The students were asked to list the songs they wanted to sing or to learn in the first period. This was calculated to meet the students' needs so that they would feel motivated to practice singing. Murphey (1992a: 14) stresses the importance of using the students' choice of songs: "[the songs] that the students listen to already and want to hear will probably have the greatest impact on them." However, since some of the target sounds, such as /ʒ/ and /ʧ/, rarely occurred in the student selected songs, I had to select additional

songs that contained these sounds. Therefore, the English songs used in class were selected based on the following criteria: (1) they contained the target sounds to be taught; (2) they were well-known or familiar to the students; (3) they covered various types of song to suit individual tastes; and (4) they had appropriate meanings, e.g., I avoided songs whose subject matter contained too much sexuality.

Validity of Lesson Plans

Three experts who had more than five years of experience in EFL teaching and/or had taught English phonetics and phonology were invited to validate two examples of the lesson plans. The lesson-plan evaluation form consisted of a three-point scale of the experts' opinions for each assessment issue including objectives of the lesson, overall teaching procedures, and evaluation criteria of the students' performance.

Item-Objective Congruence index (IOC) was employed in validating the instrument, based on the responses from the three experts, as follows:

1	meant	the item is appropriate.
0	meant	the evaluator was unsure of the items appropriateness.
-1	meant	the item is not appropriate.

The responses then were calculated according to the following formula:

$$IOC = \frac{R}{N}$$

IOC	refers to	the index of congruence.
R	refers to	the sum of scores from the experts.
N	refers to	the number of experts.

The results of the lesson-plan evaluation are reported in Table 3.2 and Table 3.3.

Table 3.2 The Results of the Evaluation of the Lesson Plan for the Direct-Teaching Group Rated by Three Experts

Items	***Experts' Opinions***			
	(1)	***(0)***	***(-1)***	***IOC***
1. Terminal objective:				
1.1. Realistic goal	3	0	0	**1**
2. Enabling objectives:				
2.1. Relevant to the terminal objective	3	0	0	**1**
2.2. Demonstrate sub-skills in order to accomplish the terminal objective	3	0	0	**1**
3. Materials:				
3.1. Promote learning	3	0	0	**1**
3.2. Authentic	2	1	0	**0.67**
3.3. Interesting	3		0	**1**
4. Evaluation:				
4.1. Assess the students' knowledge and performance according to the enabling objectives and the terminal objective	3	0	0	**1**
5. Procedures:				
5.1. Activate the students' previous knowledge in order to make connection with the new knowledge	3	0	0	**1**
5.2. Appropriate time spent in each procedure	3	0	0	**1**
5.3. Appropriate sequencing	3	0	0	**1**
6. Activities/tasks:				
6.1. Encourage the students to participate in the lesson	3	0	0	**1**
6.2. Contain various types of activities/tasks	2	1	0	**0.67**
6.3. Promote co-operative learning and friendly atmosphere in the classroom	3	0	0	**1**
6.4. Appropriate difficulty, not too difficult and not too easy	3	0	0	**1**
7. Assistance from the teacher:				
7.1. Provide appropriate amount of assistance when needed	3	0	0	**1**
Grand mean score of IOC				***0.97***

(n = 3)

Table 3.3 The Results of the Evaluation of the Lesson Plan for the English-Song Group Rated by Three Experts

Items	***Experts' Opinions***			
	(1)	***(0)***	***(-1)***	***IOC***
1. Terminal objective:				
1.1. Realistic goal	3	0	0	**1**
2. Enabling objectives:				
2.1. Relevant to the terminal objective	3	0	0	**1**
2.2. Demonstrate sub-skills in order to accomplish the terminal objective	3	0	0	**1**
3. Materials:				
3.1. Promote learning	3	0	0	**1**
3.2. Authentic	3	0	0	**1**
3.3. Interesting	2	1	0	**0.67**
4. Evaluation:				
4.1. Assess the students' knowledge and performance according to the enabling objectives and the terminal objective	3	0	0	**1**
5. Procedures:				
5.1. Activate the students' previous knowledge in order to make connection with the new knowledge	3	0	0	**1**
5.2. Appropriate time spent in each procedure	3	0	0	**1**
5.3. Appropriate sequencing	3	0	0	**1**
6. Activities/tasks:				
6.1. Encourage the students to participate in the lesson	3	0	0	**1**
6.2. Contain various types of activities/tasks	3	0	0	**1**
6.3. Promote co-operative learning and friendly atmosphere in the classroom	3	0	0	**1**
6.4. Appropriate difficulty, not too difficult and not too easy	3	0	0	**1**
7. Assistance from the teacher:				
7.1. Provide appropriate amount of assistance when needed	3	0	0	**1**
Grand mean score of IOC				***0.99***

(n = 3)

The range of the index score for an item is from –1 to 1. The value –1 indicates that the experts all agree that the item is inappropriate and does not measure the objectives it intends to measure. On the other hand, the value 1 indicates that all the experts agree that the item is appropriate and clearly measures the objectives it intends to measure. Thus, an index score with a value between 0.5 and 1 indicates that the research instrument is valid. As a result, the grand mean IOC scores give the lesson plans used in this study a high validity rating (IOC = 0.97 for Group 1's sample lesson plan and IOC = 0.99 for Group 2's sample lesson plan).

2. Pre- and Posttest of the Students' Pronunciation of the Target Phonemes

The pre- and posttest (see Appendix B) was designed to check the students' ability to pronounce the ten problematic English consonant phonemes when they occur in word-initial, -medial, and -final positions. The pretest was administered before the students were given the treatments to establish the students' prior ability. After giving them treatments, the posttest consisting of the same set of contents as in the pretest was administered to measure their improvement. The pre- and posttest was used because it allowed me to observe changes in the students' pronunciation more clearly on the basis of a direct comparison of the students' pre- and posttest scores. The test was composed of two parts: Part 1 involved reading 60 words in isolation, and Part 2 involved reading 10 sentences.

In Part 1, each target sound appeared in six words evenly distributed among the different positions, i.e., twice each in initial, medial, and final positions. The /ʒ/ sound, which rarely occurs in initial position, formed an exception, appearing four times in medial and twice in final position.

In Part 2, the ten sentences was designed to test the students' ability to pronounce the target sounds in continuous speech. Each sentence tested one target sound occurring in all syllable positions in three words. For example, the first sentence was "I *think nothing* will be on sale next *month*." This sentence tested the /θ/ sounds in three words: *<u>th</u>ink, no<u>th</u>ing,* and *mon<u>th</u>*. However, the third sentence, which tested the /ʒ/ sound, lacked a word with this sound in initial position due to its rare occurrence. Therefore, the sentence "A *mirage* is an *illusion* which *usually* occurs

in hot places" contains three words in which the /ʒ/ sound appears twice in medial position and once in final position, i.e., *illu<u>s</u>ion, u<u>s</u>ually,* and *mira<u>ge</u>*.

Before the students were recorded reading either the pretest or the posttest, they were given some time to prepare themselves. They were told not to worry about mispronunciation of the words. This helped them feel relaxed and less nervous. The test took each student about three minutes to complete.

<u>Validity of Pretest and Posttest</u>

The same group of experts that evaluated the lesson plans was invited to validate the pre- and posttest using the IOC index scores. The experts filled in the evaluation form using a three-point scale to express their opinions. Table 3.4 gives the results of the pre- and posttest evaluation.

Table 3.4 The Results of the Evaluation of the Pre- and Posttest Rated by Three Experts

Items	***Experts' Opinions***			
	(1)	***(0)***	***(-1)***	***IOC***
1. Pre- and Posttest Part 1:				
1.1. Clear instruction	2	0	1	**0.33**
1.2. Degree of difficulty in reading the selected words	3	0	0	**1**
1.3. Appropriate occurrence of the target sounds	2	1	0	**0.67**
2. Pre- and Posttest Part 2:				
2.1. Clear instruction	2	0	1	**0.33**
2.2. Degree of difficulty in reading the selected words	3	0	0	**1**
2.3. Appropriate occurrence of the target sounds	2	1	0	**0.67**
Grand mean score of IOC				***0.67***

(n = 3)

The results from the evaluation show that the English pronunciation pre- and posttest was acceptable with an IOC value of 0.67, indicating that the pre- and posttest was appropriate and could be used to rate students' pronunciation ability.

However, two items were rated as inappropriate (–1), which were the instructions in Part 1 and Part 2 telling the students to "Read the following words" and "Read the following sentences," respectively. Expert C pointed out that the word *read* in the instructions was ambiguous and could be interpreted in several ways, for example, to read silently, to read for comprehension, or to read aloud. So, more appropriate words would be *pronounce* or *read aloud*. In response to Expert C's comment, the word *read* in the instructions of the pre- and posttest was changed to *pronounce* to make the meaning clearer.

3. Evaluation Form

The evaluation form was used in grading the students' pronunciation of the target sounds in the pretest and the posttest (see Appendix C). It took the form of a four-point scale, ranging from *Good, Acceptable, Not Clear,* and *Fail*. All the judges received directions in how to use the evaluation form to make certain that they understood the process of using the form. In the directions, they were told to grade only the target sounds and that mispronunciation of other sounds in the words was not the focus of the study. For example, the target sound for the word *realize* was the /z/ phoneme. The judges only graded whether the pronunciation of the /z/ phoneme was good, acceptable, not clear, or fail. They were told to ignore mispronunciation of other sounds as long as the target sound was pronounced. For example, the student might pronounce the word *realize* as [li.lɪ.'ze:]. In this case, if the student pronounced the /z/ sound correctly, he or she would be given a score of *Good* or *Acceptable* on this sound even though the other sounds were incorrect. The judges were also able to leave comments or notes on the students' pronunciation afterwards.

The judges were asked to give a score of *Good* (3 points) if the sounds were pronounced clearly and accurately or with native-like pronunciation, *acceptable* (2 points) if the sounds were not so accurately pronounced yet understandable, *not clear* (1 point) if the sounds were difficult to perceive and, *fail* (0 points) if the sounds were pronounced inaccurately and caused misunderstanding. The scores from each of the judges were then combined to produce mean scores for each student. For example, in grading Student A's pronunciation in the /ð/ sound of the word *mother*, if Judge A gave *Good = 3,* Judge B gave *Acceptable = 2,* and Judge C gave *Acceptable = 2,* the

average score for this student's pronunciation of the /ð/ sound in this word would be 2.33.

Validity of Evaluation Form

The same group of experts who evaluated the lesson plans and the pre- and posttest was also invited to validate the evaluation form using the IOC index score. The experts filled in the evaluation form which consisted of a three-point scale to express their opinions. Table 3.5 below presents the results.

Table 3.5 The Results of the Judges' Evaluation Form Rated by Three Experts

Items	***Experts' Opinions***			
	(1)	***(0)***	***(-1)***	***IOC***
1. Clear guideline for the judges to use the evaluation form	3	0	0	**1**
2. Appropriate scoring system	3	0	0	**1**
Grand mean score of IOC				***1***

(n = 3)

The results of the IOC evaluation show that all three experts were satisfied with the judges' evaluation form. The grand mean IOC score of 1 indicates that the evaluation form was appropriate and could be used to rate the students' pronunciation ability.

Data Collection

The data collection process was carried out in accordance with the research procedures. To start with, the students in both groups were pretested in the first period of the courses to determine their prior pronunciation ability. In the last period, after the students had completed the courses, they were posttested by having their readings recorded again. Then, all 60 voice recordings from both groups, i.e., 30 for each group's pre- and posttest, together with the evaluation form were sent to the judges to grade. The raw scores from each of the judges were combined to produce mean scores for each student. Figure 3.2 summarizes the data collection process and the research instruments used to collect the data.

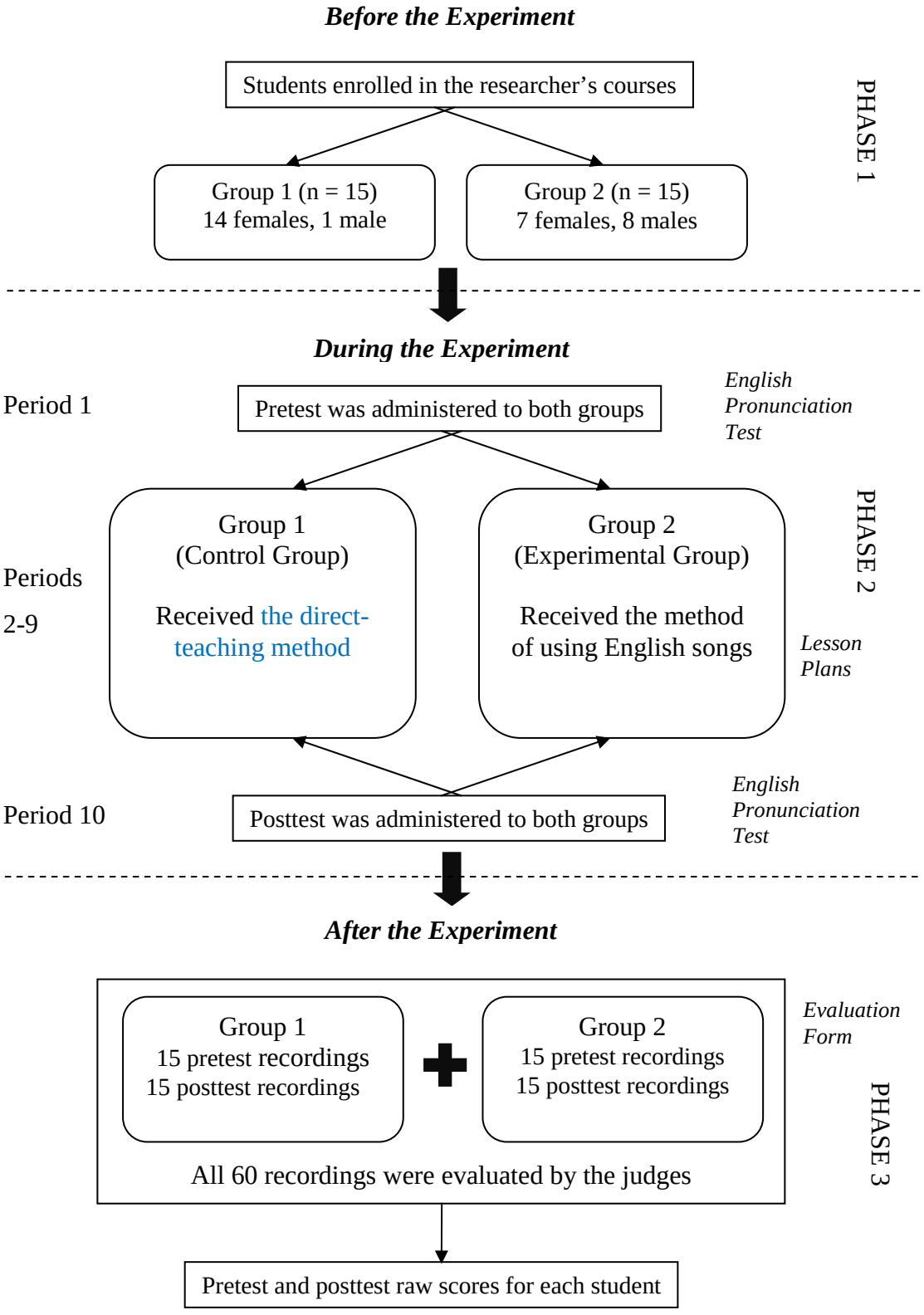

Figure 3.2. The data collection process

Data Analysis

1. Data Analyses for Research Question 1

Research question 1 concerned the effects of the use of English songs on the students' pronunciation of ten consonant phonemes when compared with the use of the direct-teaching method. The independent variables were the use of English songs and the direct-teaching method. The dependent variables were the students' abilities to pronounce the ten consonant phonemes.

In order to compare the effects of the two methods on the students' pronunciation of the ten phonemes, a paired sample *t*-test was used to examine the significant difference between the pretest mean scores and the posttest mean scores of each group. Then an independent sample *t*-test was used to compare the means of the difference scores of the pre- and posttest between groups, assuming that the difference scores indicate the amount of improvement. In addition, basic descriptive statistics such as mean score ($\bar{x}$), percentage (%), and standard deviation (SD) were also presented.

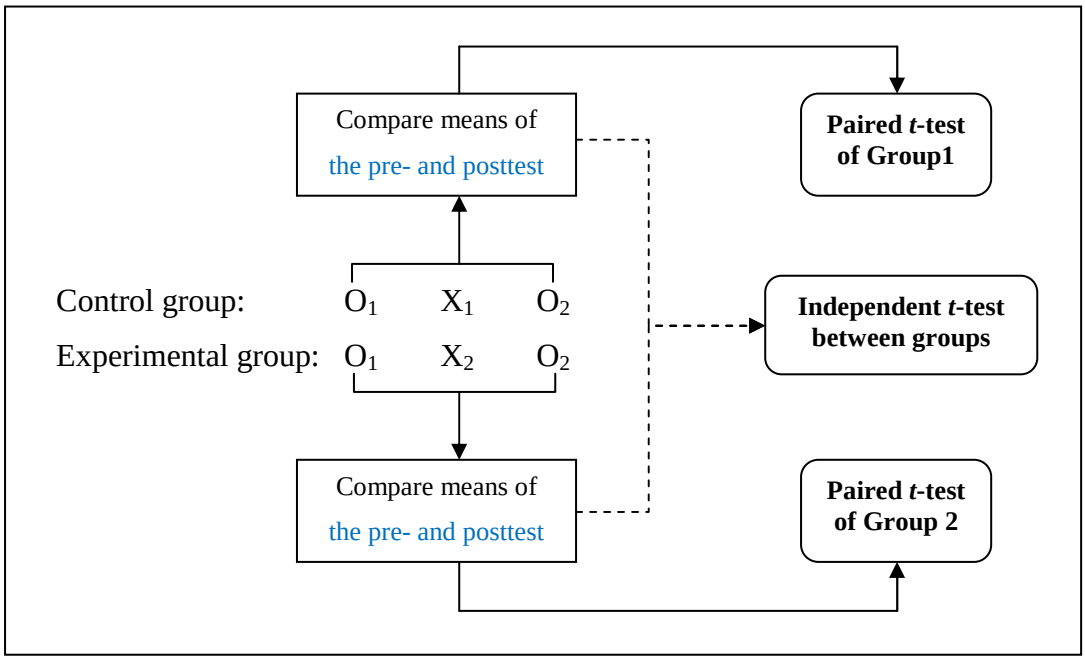

Figure 3.3. Diagram illustrating the data analyses for research question 1

2. Data Analyses for Research Question 2

Research question 2 concerned the extent to which the pronunciation of each phoneme was improved with the use of English songs and the use of the direct-teaching method. The independent variables were the method of using English songs and the use of the direct-teaching method. The dependent variables were the students' abilities to pronounce ten consonant phonemes

To answer this research question, percentage difference scores were calculated for each phoneme to demonstrate the extent of improvement. Then they were compared within a single group and between the two groups. A paired sample *t*-test was used to determine whether the difference between the pre- and posttest mean scores for each phoneme within a single group were significant.

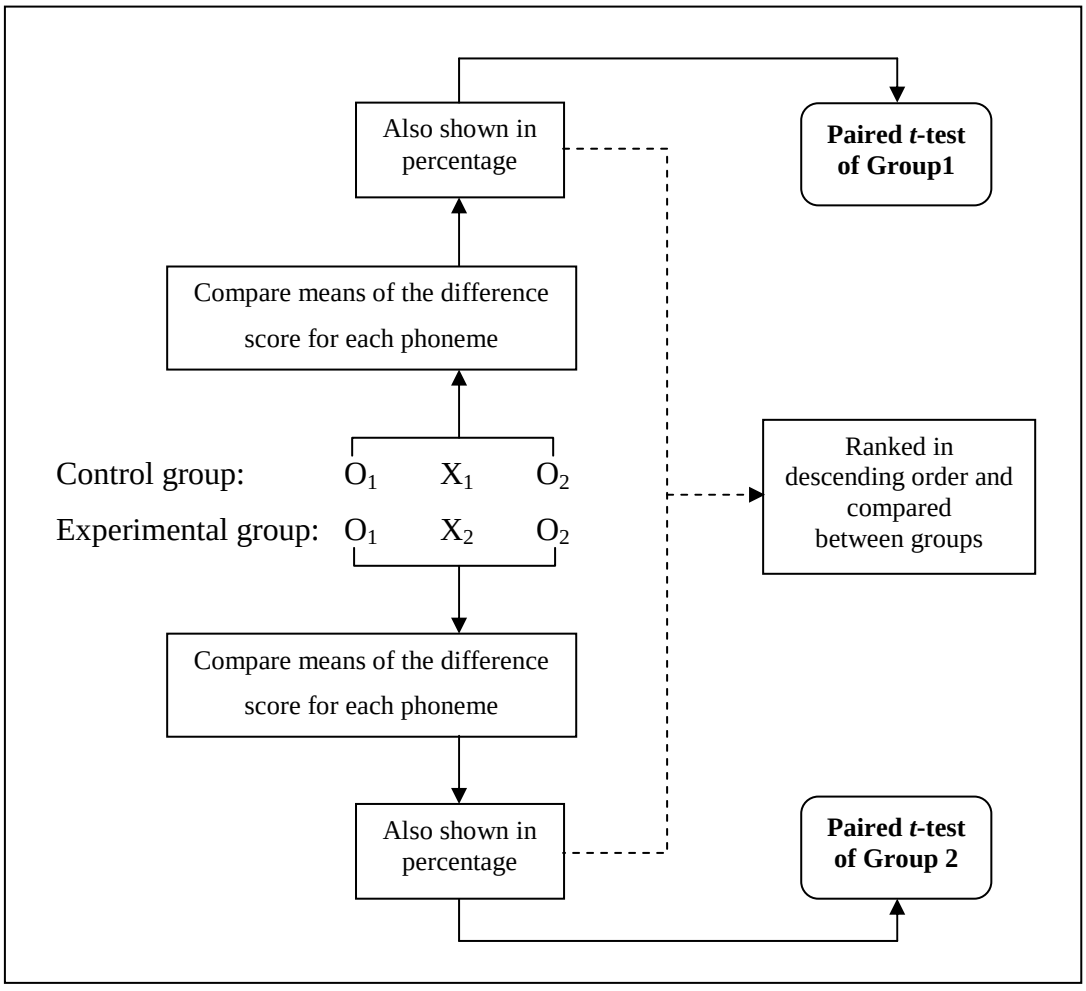

Figure 3.4. Diagram illustrating the data analyses for research question 2

As shown and summarized in Figure 3.3 and Figure 3.4, this study employed a quasi-experimental research method in which the English-song group served as the experimental group and the direct-teaching group as the control group. The students in both groups were pretested before the treatments were given to them and posttested after completing the treatment. Then, the students' pronunciation scores from the pretest and the posttest were compared to determine their improvement in pronouncing the problematic phonemes both within groups and between the groups. The statistical analyses employed in this study were descriptive statistics, paired sample *t*-tests, and independent sample *t*-tests calculated using SPSS 11.5 for Windows.

The findings for each research question are presented in chapter IV together with further investigation of additional findings relevant to support the main findings.

CHAPTER IV
RESEARCH FINDINGS

This chapter presents the results of the study. The findings are presented in two main sections. First, the major findings that answer the two research questions are presented. Then additional findings are introduced.

Major Findings Relating to the Research Questions

1. Comparison of the Effects of the Two Methods on the Students' Ability to Pronounce the Ten Phonemes

Research question 1 investigated whether using English songs has significant effects on the students' pronunciation of ten consonant phonemes when compared with the use of the direct-teaching method.

Table 4.1 presents the paired sample *t*-test analysis of the students' pre- and posttest mean scores.

Table 4.1 Paired Sample *t*-Test of the Pre- and Posttest Mean Scores within Groups

Methods	***Tests***	***Means***	***SD***	***Mean Differences***	**t-*Values***	***Sig. (2-tailed)***
Direct Teaching (Group 1)	Pretest	178.20 (66.00%)	19.86	-26.89 (9.96%)	-6.609	0.000*
	Posttest	205.09 (75.96%)	17.00			
English Songs (Group 2)	Pretest	154.82 (57.34%)	11.04	-22.69 (8.40%)	-5.294	0.000*
	Posttest	177.51 (65.74%)	19.94			

(*$p < 0.05$, full score = 270, n = 15)

Table 4.1 shows that Group 1 had a pretest mean score of 178.20 (SD = 19.86), while its posttest mean score increased to 205.09 (SD = 17). Group 2 had a pretest mean score of 154.82 (SD = 11.04), and its posttest mean score also rose to 177.51 (SD = 19.94). The standard deviations (SD) suggest that after the treatments were given, the diversity of the pronunciation ability of Group 1 students became narrower.

In contrast, the standard deviations for Group 2 show that the students' pronunciation ability became even more varied after they received the treatment.

The paired sample *t*-test values show that there were significant differences observed in both groups after they received the treatments. For Group 1, the mean difference is –26.89, and the *t*-value is –6.609. These indicate that the difference between the pre- and posttest mean scores is significant at the 0.05 level. Likewise for Group 2, the mean difference of –22.69 and the *t*-value is of –5.294 indicate a significant difference between the pretest and the posttest mean scores.

On the basis of the data in Table 4.1, I conclude that both the use of English songs and the use of the direct-teaching method had a significant effect on the students' pronunciation ability, which is supported by the higher mean score in the posttest.

However, the data show that both the pretest and the posttest mean scores of Group 1 (178.20 and 205.09, respectively) and Group 2 (154.82 and 177.51, respectively) are quite different, from which it may be assumed that overall, Group 1 students had stronger pronunciation skills than Group 2 students. To investigate the truth of this assumption, an independent sample *t*-test was employed to see if there were significant differences between Group 1's and Group 2's pre- and posttest mean scores. The results are presented in Table 4.2.

Table 4.2 Independent Sample *t*-Test of the Pre- and Posttest Mean Scores

Tests	***Methods***	***Mean***	***SD***	***Mean difference***	**t-*Values***	***Sig. (2-tailed)***
Pretest	Group 1	178.20 (66.00%)	19.86	23.38 (8.66%)	3.985	0.001*
	Group 2	154.82 (57.34%)	11.04			
Posttest	Group 1	205.09 (75.96%)	17.00	27.58 (10.22%)	4.076	0.000*
	Group 2	177.51 (65.74%)	19.94			

(*$p < 0.05$, full score = 270, n = 15)

The results in Table 4.2 indicate that there are statistically significant differences between the pretest mean scores and the posttest mean scores of Group 1 and Group 2. These results confirm that Group 1 students had fundamentally stronger pronunciation skills than Group 2 students, allowing them to score higher than the students in the second group.

The standard deviations, which show the level of dispersion, indicate that Group 1's pretest scores (SD = 19.86) spread out or varied more than Group 2's pretest scores (SD = 11.04). An interesting finding arises when looking at the standard deviation in the posttest. The SD values indicate that, after receiving the treatments, Group 1's posttest scores huddled together around the mean (SD = 17.00), whereas Group 2's posttest scores became more varied than before (SD = 19.94).

In addition, an independent sample *t*-test analysis was carried out to observe whether the mean differences of the pretest and the posttest of Group 1 (–26.89) and that of Group 2 (–22.69) were significantly different or not. Table 4.3 reports the raw scores of each student, and Table 4.4 reports the findings of the independent sample *t*-test analysis.

It can be observed from the data in Table 4.3 that the pronunciation ability of every student in the direct-teaching group improved after the instruction. The maximum difference score was 58.00 for Student 8, the minimum was 4.00 for Student 4, and no regression was found. The pronunciation ability of most students in the English-song group also increased after the instruction. The maximum difference score was 49.00 for Student 28, and the minimum was 2.00 for Student 27; however, a regression was observed in Student 26 due to the negative value of –3.33.

Therefore, the raw scores in Table 4.3 show that the direct-teaching method assisted all Group 1 students to achieve higher scores on the posttest, whereas the use of English songs did not result in improved pronunciation ability for every student.

Table 4.3 The Raw Scores of Group 1 and Group 2 Students

Student	***Direct Teaching (Group 1)***			***Student***	***English Songs (Group 2)***		
	pretest	***posttest***	***difference scores***		***pretest***	***posttest***	***difference scores***
1	182.00	223.33	41.33	16	156.33	188.00	31.67
2	168.33	186.67	18.33	17	163.67	170.33	6.67
3	159.33	205.67	46.33	18	176.33	207.67	31.33
4	178.67	182.67	4.00	19	135.00	169.00	34.00
5	150.67	165.00	14.33	20	151.67	172.33	20.67
6	203.67	226.33	22.67	21	159.00	192.33	33.33
7	209.00	220.00	11.00	22	152.67	183.00	30.33
8	154.67	212.67	58.00	23	169.33	174.67	5.33
9	190.33	214.67	24.33	24	158.67	163.33	4.67
10	198.00	217.67	19.67	25	145.67	185.33	39.67
11	188.33	201.33	13.00	26	149.33	146.00	-3.33
12	182.00	211.67	29.67	27	135.67	137.67	2.00
13	192.33	214.33	22.00	28	153.67	202.67	49.00
14	173.00	200.00	27.00	29	155.00	168.67	13.67
15	142.67	194.33	51.67	30	160.33	201.67	41.33
Mean	178.20	205.09	26.89	Mean	154.82	177.51	22.69

(Full score = 270)

Table 4.4 Independent Sample *t*-Test of the Difference Scores between the Two Groups

Methods	***n***	***Mean***	***SD***	***Mean difference***	**t-*Value***	***Sig. (2-tailed)***
Group 1	15	26.89 (9.96%)	15.76	4.20 (1.56%)	.711	.483
Group 2	15	22.69 (8.40%)	16.60			

(*p < 0.05)

Nevertheless, Table 4.4 showing the results from the independent sample *t*-test analysis indicates that, although the mean of the difference score of Group 1 (26.89) is higher than that of Group 2 (22.69) by 4.20 or 1.56%, no significant difference is found between the two means because the *p*-value (.483) exceeds the 0.05 level. Moreover, the SD values reveal wide dispersion of the difference scores in both Group 1 (15.76) and Group 2 (16.60). Thus, the data suggest that the increases in the difference scores from the use of the direct-teaching method and the use of English songs are not statistically different. Both methods had similar effects on the students' pronunciation improvement in general.

To summarize the findings for research question 1, I found that the use of English songs and the use of the direct-teaching method can both increase students' overall pronunciation ability with regard to the ten target phonemes at a significant level as confirmed by the paired sample *t*-test analysis in Table 4.1. Although it is noted in Table 4.3 that the mean of the difference score of the English songs group is lower than that of the direct-teaching group, the findings from the independent sample *t*-test analysis in Table 4.4 prove that the difference is not statistically significant. Therefore, I concluded that the use of English songs and the use of the direct-teaching method produce similar improvements in the students' pronunciation in general.

2. The Extent of the Students' Improvement in Pronouncing the Problematic Sounds

Research question 2 examined the extent of the improvement of the pronunciation of each phoneme with the use of English songs and the use of the direct-teaching method.

Table 4.5 and Table 4.6 summarize the descriptive statistics of the pre- and posttest mean scores of the direct-teaching group and the English-song group respectively.

Table 4.5 Descriptive Statistics of the Pre- and Posttest Scores of the Direct-Teaching Group (Group 1) Regarding Each of the Phonemes

Phonemes	***Group 1 (Pretest)***					***Group 1 (Posttest)***				
	Min	***Max***	***Mean***	***%***	***SD***	***Min***	***Max***	***Mean***	***%***	***SD***
1. /θ/	9.67	21.00	**15.24**	**56.46%**	3.54	9.67	23.33	**18.53**	**68.64%**	3.73
2. /ð/	10.67	19.33	**15.58**	**57.70%**	2.82	7.33	22.33	**17.49**	**64.77%**	3.32
3. /ʒ/	10.33	20.33	**13.84**	**51.28%**	3.07	13.33	22.67	**18.24**	**67.57%**	3.05
4. /ʤ/	11.33	23.00	**16.02**	**59.34%**	3.58	17.67	24.33	**21.33**	**79.01%**	2.26
5. /ʃ/	16.00	24.00	**20.04**	**74.24%**	2.27	15.00	24.67	**20.84**	**77.20%**	2.99
6. /ʧ/	14.00	24.00	**17.47**	**64.69%**	2.86	12.67	24.00	**19.22**	**71.19%**	3.66
7. /g/	14.67	24.00	**20.04**	**74.24%**	3.18	18.33	25.00	**22.29**	**82.55%**	1.98
8. /z/	15.00	24.00	**20.60**	**76.30%**	2.51	19.67	24.67	**23.22**	**86.01%**	1.32
9. /r/	13.00	24.00	**18.98**	**70.29%**	3.46	16.00	24.33	**21.71**	**80.41%**	2.79
10. /v/	16.67	24.00	**20.38**	**75.47%**	2.49	15.33	24.00	**22.20**	**82.22%**	2.64

(Full score for each phoneme = 27)

Table 4.6 Descriptive Statistics of the Pretest and Posttest Scores of the English-Song Group (Group 2) Regarding Each of the Phonemes

Phonemes	***Group 2 (Pretest)***					***Group 2 (Posttest)***				
	Min	***Max***	***Mean***	***%***	***SD***	***Min***	***Max***	***Mean***	***%***	***SD***
1. /θ/	8.67	17.67	**12.36**	**45.76%**	2.42	8.00	20.67	**15.16**	**56.13%**	3.28
2. /ð/	8.33	14.67	**10.78**	**39.92%**	1.79	4.67	20.33	**13.44**	**49.79%**	5.03
3. /ʒ/	12.33	16.33	**14.04**	**52.02%**	1.34	10.33	22.00	**15.40**	**57.04%**	3.47
4. /ʤ/	10.67	18.67	**14.62**	**54.16%**	2.32	13.33	24.33	**18.69**	**69.22%**	3.54
5. /ʃ/	16.67	22.00	**19.22**	**71.19%**	1.71	16.33	23.33	**20.04**	**74.24%**	1.90
6. /ʧ/	7.67	20.00	**15.71**	**58.19%**	3.10	12.67	22.00	**17.49**	**64.77%**	2.83
7. /g/	15.00	21.33	**18.29**	**67.74%**	1.98	18.33	24.00	**21.49**	**79.59%**	1.82
8. /z/	12.67	21.33	**17.40**	**64.44%**	1.92	15.00	24.67	**21.53**	**79.75%**	2.66
9. /r/	12.00	20.33	**15.49**	**57.37%**	2.68	10.00	22.67	**15.38**	**56.95%**	4.00
10. /v/	14.33	19.67	**16.91**	**62.63%**	1.70	16.33	22.67	**18.89**	**69.96%**	1.99

(Full score for each phoneme = 27)

According to Table 4.5 and Table 4.6, it is observed that the posttest mean scores for almost all of the phonemes are higher than the pretest mean scores in both groups. Group 1 has higher posttest scores than the pretest scores for every phoneme (see Table 4.5), while Group 2 has higher posttest scores than the pretest scores for all phonemes except /r/, which was a bit lower (see Table 4.6). All of the maximum posttest scores from both groups are found to be higher than the maximum pretest scores. Therefore, the findings suggest that the students were generally able to improve their abilities to pronounce the ten problematic consonant phonemes with the use of the direct-teaching method and the use of English songs.

To show how much improvement was made on each phoneme with the different instructional methods, Table 4.7 presents a comparison of the pre- and posttest mean scores for each phoneme from the two groups and the difference scores for each phoneme shown as percentages.

Table 4.7 Comparison of the Pre- and Posttest Mean Scores and the Difference Scores for Each Phoneme from the Direct-Teaching Group and the English-song Group

Phonemes	***Direct Teaching (Group 1)***				***English Songs (Group 2)***			
	pretest mean	***posttest mean***	***mean diff***	***mean diff (%)***	***pretest mean***	***posttest mean***	***mean diff***	***mean diff (%)***
/θ/	15.24	18.53	3.29	**12.19**	12.36	15.16	2.8	**10.37**
/ð/	15.58	17.49	1.91	**7.07**	10.78	13.44	2.66	**9.85**
/ʒ/	13.84	18.24	4.4	**16.30**	14.04	15.4	1.36	**5.04**
/ʤ/	16.02	21.33	5.31	**19.67**	14.62	18.69	4.07	**15.07**
/ʃ/	20.04	20.84	0.8	**2.96**	19.22	20.04	0.82	**3.04**
/ʧ/	17.47	19.22	1.75	**6.48**	15.71	17.49	1.78	**6.59**
/g/	20.04	22.29	2.25	**8.33**	18.29	21.49	3.2	**11.85**
/z/	20.6	23.22	2.62	**9.70**	17.4	21.53	4.13	**15.30**
/r/	18.98	21.71	2.73	**10.11**	15.49	15.38	-0.11	**-0.41**
/v/	20.38	22.2	1.82	**6.74**	16.91	18.89	1.98	**7.33**

(Full score for each phoneme = 27)

Table 4.7 shows that the students' improvement on the ten phonemes varies from sound to sound and from group to group. In Group 1, the pronunciation of /ʤ/ improved the most by 19.67%, while the least improvement was found in the pronunciation of /ʃ/, which only increased by 2.96%. In the English-song group, the highest improvement was found in the pronunciation of /z/ (15.30%), whereas /ʃ/ improved the least (3.04%). Also, the posttest mean score for /r/ was a bit lower than its pretest mean score. As a result, the difference of the pre- and posttest mean scores for /r/ is –0.41%.

Next, Table 4.8 and Table 4.9 report the paired sample *t*-test analysis of each group in order to prove the significant differences between the students' pre- and posttest mean scores for each phoneme. After that, Table 4.10 summarizes and ranks the students' pronunciation improvement for each phoneme.

Table 4.8 Paired Sample *t*-Test of the Pre- and Posttest Mean Scores for Group 1

Phonemes	***Tests***	***Means***	***SD***	***Mean differences***	**t-*Values***	***Sig. (2-tailed)***
/θ/	Pretest	15.24	3.54	-3.29	-2.719	0.017*
	Posttest	18.53	3.73			
/ð/	Pretest	15.58	2.82	-1.91	-1.927	0.075
	Posttest	17.49	3.32			
/ʒ/	Pretest	13.84	3.07	-4.40	-4.790	0.000*
	Posttest	18.24	3.05			
/ʤ/	Pretest	16.02	3.58	-5.31	-7.504	0.000*
	Posttest	21.33	2.26			
/ʃ/	Pretest	20.04	2.27	-0.8	-.810	0.432
	Posttest	20.84	2.99			
/ʧ/	Pretest	17.47	2.86	-1.75	-2.467	0.027*
	Posttest	19.22	3.66			
/g/	Pretest	20.04	3.18	-2.25	-3.615	0.003*
	Posttest	22.29	1.98			
/z/	Pretest	20.60	2.51	-2.62	-3.803	0.002*
	Posttest	23.22	1.32			
/r/	Pretest	18.98	3.46	-2.73	-3.758	0.002*
	Posttest	21.71	2.79			
/v/	Pretest	20.38	2.49	-1.82	-2.559	0.023*
	Posttest	22.20	2.64			

(*$p < 0.05$, full score = 27, n = 15)

The paired sample *t*-test analysis in Table 4.8 proves that there are eight phonemes for which the pre- and posttest mean scores are significantly different at the 0.05 level. These phonemes are /θ/, /ʒ/, /ʤ/, /ʧ/, /g/, /z/, /r/, and /v/. The findings suggest that the students' pronunciation of all the phonemes except /ð/ and /ʃ/ was improved with the direct-teaching method.

Table 4.9 Paired Sample *t*-Test of the Pre- and Posttest Mean Scores for Group 2

Phonemes	***Tests***	***Means***	***SD***	***Mean differences***	***t-Values***	***Sig. (2-tailed)***
/θ/	Pretest	12.36	2.42	-2.8	-3.016	0.009*
	Posttest	15.16	3.28			
/ð/	Pretest	10.78	1.79	-2.66	-2.149	0.050*
	Posttest	13.44	5.03			
/ʒ/	Pretest	14.04	1.34	-1.36	-1.428	0.175
	Posttest	15.40	3.47			
/ʤ/	Pretest	14.62	2.32	-4.07	-4.561	0.000*
	Posttest	18.69	3.54			
/ʃ/	Pretest	19.22	1.71	-0.82	-1.322	0.208
	Posttest	20.04	1.90			
/ʧ/	Pretest	15.71	3.10	-1.78	-2.080	0.056
	Posttest	17.49	2.83			
/g/	Pretest	18.29	1.98	-3.2	-5.394	0.000*
	Posttest	21.49	1.82			
/z/	Pretest	17.4	1.92	-4.13	-5.420	0.000*
	Posttest	21.53	2.66			
/r/	Pretest	15.49	2.68	0.11	.149	0.884
	Posttest	15.38	4.00			
/v/	Pretest	16.91	1.70	-1.98	-2.783	0.015*
	Posttest	18.89	1.99			

(*$p < 0.05$, full score = 27, n = 15)

In Table 4.9, the paired sample *t*-test analysis shows that there are six phonemes for which the pre- and posttest mean scores are significantly different at the 0.05 level. These phonemes are /θ/, /ð/, /ʤ/, /g/, /z/, and /v/. The findings suggest that the use of English songs improved the pronunciation of all the phonemes except the four, namely /ʒ/, /ʃ/, /ʧ/, and /r/.

Table 4.10 Summary of the Students' Pronunciation Improvement on Each Phoneme Ranked in Descending Order by the Percentage of the Means of the Difference Score

Rank	***Group 1***			***Group 2***		
	Phonemes	***Mean diff***	***Sig. 2-tailed***	***Phonemes***	***Mean diff***	***Sig. 2-tailed***
1	/ʤ/	19.67%	0.000*	/z/	15.30%	0.000*
2	/ʒ/	16.30%	0.000*	/ʤ/	15.07%	0.000*
3	/θ/	12.19%	0.017*	/g/	11.85%	0.000*
4	/r/	10.11%	0.002*	/θ/	10.37%	0.009*
5	/z/	9.70%	0.002*	/ð/	9.85%	0.050*
6	/g/	8.33%	0.003*	/v/	7.33%	0.015*
7	/ð/	7.07%	0.075	/ʧ/	6.59%	0.056
8	/v/	6.74%	0.023*	/ʒ/	5.04%	0.175
9	/ʧ/	6.48%	0.027*	/ʃ/	3.04%	0.208
10	/ʃ/	2.96%	0.432	/r/	-0.41%	0.884

(*$p < 0.05$)

It can be concluded from Table 4.10 that the direct-teaching method was proven to be effective in improving the students' pronunciation of the eight phonemes /ʤ/, /ʒ/, /θ/, /r/, /z/, /g/, /v/, and /ʧ/ in descending order. The percentage of the means of the difference scores indicates how much the students' pretest and posttest mean scores for each phoneme differed along with the significant values. With regard to the phoneme /ð/, if we look back at Table 4.8, we will find that the improvement was not significant because the SD value in the posttest was greater than that of the pretest (see Table 4.8 for these values) and it is not balanced by a greater improved score. As a result, the students' improvement is not statistically significant despite the 7.07% increase.

The method of using English songs also proved effective in improving the students' pronunciation of the six phonemes /z/, /ʤ/, /g/, /θ/, /ð/, and /v/ in descending order. It can be observed that both methods improved student pronunciation of the five phonemes /ʤ/, /θ/, /z/, /g/, and /v/. Thus, it is possible that these five phonemes may not be too difficult for students to learn when compared with the other phonemes.

To summarize the findings for research question 2, the results in Table 4.8 confirm that the direct-teaching method can significantly improve the students' pronunciation of eight phonemes. Table 4.9 shows that the use of English songs can improve the students' pronunciation of six phonemes at a significant level but fails to improve the students' pronunciation of the phoneme /r/. Moreover, Table 4.10 points out that both methods can be used to improve the students' pronunciation of five of the phonemes.

3. Summary of the Major Findings

In answer to research question 1, the findings show that the use of English songs and the direct-teaching method can both improve the students' pronunciation of the ten problematic English consonant phonemes in general at the 0.05 level of significance, as demonstrated by the pretest and the posttest mean scores, in which the posttest mean score of the direct-teaching group is a bit higher than that of the other group.

In answer to research question 2, the findings reveal that the use of the direct-teaching method provides more productive results than the use of English songs. With the direct-teaching method, the students' pronunciation of eight phonemes, namely, /ʤ/, /ʒ/, /θ/, /r/, /z/, /g/, /v/, and /ʧ/, was significantly improved. That is to say, there is a significant increase in the students' posttest mean score for each of these phonemes when compared with the pretest mean score. With the use of English songs, the students' pronunciation of six phonemes, i.e., /z/, /ʤ/, /g/, /θ/, /ð/, and /v/, was found to have significantly improved. Though there was little improvement of the students' pronunciation of the phoneme /ʃ/ in either groups, the students' pretest mean scores (74.24% in Group 1 and 71.19% in Group 2) suggest that /ʃ/ was not problematic for them from the start.

Additionally, it should be noted that, although the use of English songs can improve the students' pronunciation in general, Table 4.3 shows that one student in the English-song group, i.e., Student 26, performed slightly worse in the posttest (the difference score of the pre- and posttests was –3.33). Moreover, Table 4.7 also reveals that the students' pronunciation of the sound /r/ became poorer after the treatment (the difference mean score of the pre- and posttests for this sound was (–0.11 or –0.41%).

Therefore, I suggest that learning L2 pronunciation through English songs alone could be generally effective, yet it may not work for every student or for some particular phonemes.

Additional Findings from Quantitative Data

Further investigation on the effect of the use of English songs and the direct-teaching method on the students' pronunciation ability led to additional findings that deserve to be discussed since they provide additional support and strengthen the major findings. Additional findings are presented below.

1. The Students' Pronunciation of the Target Phonemes in Reading from a Word List and in Connected Speech

In the pronunciation test, the students had to read two sections: a list of 60 words and 10 sentences, all of which contained the target phonemes. This section takes a closer look at each section of the test and then compares the effects of the use of English songs and the direct-teaching method from the results of the two sections.

Section 1: Pronouncing a List of 60 Words

Table 4.11 reports the summary of the paired sample *t*-test analysis for each phoneme when the students read the 60 words in isolation. To examine each student's pre- and posttest raw scores, see Appendix D.

The results show that the direct-teaching method improved the students' pronunciation of almost every phoneme (eight phonemes), with the exception of the phonemes /ʃ/ and /ʧ/, at a significance level of 0.05, while the use of English songs improved the students' pronunciation of only five phonemes, namely, /ð/, /ʤ/, /g/, /z/, and /v/. Moreover, the use of English songs did not improve the students' pronunciation of the phoneme /r/ since the posttest mean score for this phoneme (10.11) is 0.07 lower than the pretest mean score (10.18). This suggests that the direct-teaching method is more effective than the use of English songs at improving student pronunciation when reading words in isolation.

Section 2: Pronouncing 10 Sentences

Table 4.12 reports the summary of the paired sample *t*-test analysis for each phoneme when the students read the words containing the target phonemes in connected speech.

Table 4.12 shows that the use of English songs improved the students' pronunciation of six phonemes, /θ/, /ʒ/, /ʤ/, /ʧ/, /g/, and /z/, in connected speech at a significance level of 0.05. As for the direct-teaching method, the results appear to be similar, i.e., improvement of the students' pronunciation of five phonemes, except that there was no significant difference between the pre- and posttest mean scores for the phoneme /θ/. Furthermore, the findings reveal that, in the direct-teaching group, the posttest mean scores for the phonemes /θ/ and /ð/ decreased slightly by 0.24 and 0.38, respectively, whereas, in the English-song group, only the posttest mean score of the phoneme /r/ dropped slightly by 0.04. Thus, the findings suggest that using English songs may be a bit more effective than the direct-teaching method when the target phonemes are being pronounced in connected speech.

Table 4.11 Paired Sample *t*-Test of the Pre- and Posttest Mean Scores in Section 1

Phonemes	***Methods***	***Tests***	***Means***	***SD***	***Mean differences***	***t-Values***	***Sig. (2-tailed)***
/θ/	G1	Pretest	8.76	3.21	-3.53	-3.249	0.006*
		Posttest	12.29	2.76			
	G2	Pretest	8.29	2.25	-1.44	-1.581	0.136
		Posttest	9.73	2.56			
/ð/	G1	Pretest	10.00	2.15	-2.29	-3.244	0.006*
		Posttest	12.29	2.15			
	G2	Pretest	6.82	1.45	-2.27	-2.394	0.031*
		Posttest	9.09	3.82			
/ʒ/	G1	Pretest	8.67	2.23	-3.47	-5.305	0.000*
		Posttest	12.13	2.17			
	G2	Pretest	9.20	0.83	-0.69	-0.893	0.387
		Posttest	9.89	2.58			
/ʤ/	G1	Pretest	10.67	2.43	-3.62	-6.050	0.000*
		Posttest	14.29	1.76			
	G2	Pretest	10.45	1.83	-2.82	-4.536	0.000*
		Posttest	13.27	1.95			
/ʃ/	G1	Pretest	13.31	1.26	-0.49	-0.652	0.525
		Posttest	13.80	2.12			
	G2	Pretest	12.62	1.17	-0.78	-1.435	0.173
		Posttest	13.40	1.55			
/ʧ/	G1	Pretest	11.56	2.26	-1.02	-1.627	0.126
		Posttest	12.58	2.70			
	G2	Pretest	11.09	2.18	-0.76	-0.971	0.348
		Posttest	11.84	1.82			
/g/	G1	Pretest	12.91	2.51	-1.74	-3.268	0.006*
		Posttest	14.65	1.75			
	G2	Pretest	12.07	1.61	-1.64	-3.320	0.005*
		Posttest	13.71	1.64			
/z/	G1	Pretest	13.89	1.79	-1.53	-2.552	0.023*
		Posttest	15.42	1.21			
	G2	Pretest	12.18	1.47	-2.53	-4.453	0.001*
		Posttest	14.71	1.50			
/r/	G1	Pretest	12.16	2.84	-2.53	-3.902	0.002*
		Posttest	14.69	2.02			
	G2	Pretest	10.18	2.08	0.07	0.111	0.913
		Posttest	10.11	2.88			
/v/	G1	Pretest	13.33	1.98	-1.47	-2.410	0.030*
		Posttest	14.80	1.82			
	G2	Pretest	11.16	1.21	-1.38	-3.041	0.009*
		Posttest	12.53	1.22			

(*$p < 0.05$, full score = 18, n = 15, G1 = Group 1, G2 = Group 2)

Table 4.12 Paired Sample *t*-Test of the Pre- and Posttest Mean Scores in Section 2

Phonemes	***Methods***	***Tests***	***Means***	***SD***	***Mean differences***	**t-*Values***	***Sig. (2-tailed)***
/θ/	G1	Pretest	6.49	0.97	0.25	0.764	0.457
		Posttest	6.24	1.44			
	G2	Pretest	4.07	1.10	-1.36	-3.931	0.002*
		Posttest	5.42	1.03			
/ð/	G1	Pretest	5.58	0.96	0.38	0.930	0.368
		Posttest	5.20	1.45			
	G2	Pretest	3.95	0.94	-0.40	-0.940	0.363
		Posttest	4.36	1.49			
/ʒ/	G1	Pretest	5.18	1.27	-0.93	-2.238	0.042*
		Posttest	6.11	1.23			
	G2	Pretest	4.84	0.85	-0.67	-2.413	0.030*
		Posttest	5.51	1.17			
/ʤ/	G1	Pretest	5.36	1.42	-1.69	-6.133	0.000*
		Posttest	7.04	0.98			
	G2	Pretest	4.18	0.95	-1.24	-2.741	0.016*
		Posttest	5.42	1.77			
/ʃ/	G1	Pretest	6.73	1.32	-0.31	-0.891	0.388
		Posttest	7.04	1.24			
	G2	Pretest	6.60	1.03	-0.04	-0.115	0.910
		Posttest	6.64	1.01			
/ʧ/	G1	Pretest	5.91	1.40	-0.73	-2.194	0.046*
		Posttest	6.64	1.47			
	G2	Pretest	4.62	1.38	-1.02	-2.653	0.019*
		Posttest	5.64	1.68			
/g/	G1	Pretest	7.13	0.98	-0.51	-2.201	0.045*
		Posttest	7.64	0.76			
	G2	Pretest	6.22	0.71	-1.55	-6.653	0.000*
		Posttest	7.78	0.41			
/z/	G1	Pretest	6.71	1.12	-1.09	-3.980	0.001*
		Posttest	7.80	0.30			
	G2	Pretest	5.22	0.84	-1.60	-4.691	0.000*
		Posttest	6.82	1.51			
/r/	G1	Pretest	6.82	0.98	-0.20	-0.841	0.414
		Posttest	7.02	1.08			
	G2	Pretest	5.31	0.92	0.04	0.128	0.900
		Posttest	5.27	1.58			
/v/	G1	Pretest	7.05	0.88	-0.35	-1.889	0.080
		Posttest	7.40	0.99			
	G2	Pretest	5.76	0.63	-0.60	-1.759	0.100
		Posttest	6.36	1.12			

(*$p < 0.05$, full score = 9, n = 15, G1 = Group 1, G2 = Group 2)

To conclude the findings in this section, the direct-teaching method provided better results than the method of using English songs in pronouncing a list of words. It can be assumed that pronouncing a list of words in isolation is similar to the practicing of reading minimal pairs aloud that the students in the direct-teaching group had done when they learned those sounds. As a result, Group 1 students were more familiar with this kind of pronunciation task than Group 2 students. As for pronouncing sentences, not much difference was observed between the two methods since both groups of students improved significantly in the pronunciation of five phonemes in the direct-teaching group and six phonemes in the English-song group.

2. The Students' Pronunciation of the Target Phonemes in Different Syllable Positions

This section looks into the students' ability to pronounce the target phonemes in different syllable positions, i.e., initial, medial, and final positions. Table 4.13 and Table 4.14 present Group 1's and Group 2's pre- and posttest mean scores together with percentages respectively. Then Figure 4.1 to Figure 4.4 present bar charts illustrating the students' abilities to pronounce the target sounds in the pretest and the posttest, shown in percentage values. After that, Table 4.15 to Table 4.17 present the paired sample *t*-test analyses of the differences between the pre- and posttest mean scores for consonants in initial, medial, and final positions, respectively.

Table 4.13 Group 1's Mean Scores and Percentages on Pronouncing the Target Phonemes in Different Syllable Positions

Phonemes	***Initial position***		***Medial position***		***Final position***	
	pretest	**posttest**	**pretest**	**posttest**	**pretest**	**posttest**
/θ/	4.80 (53.33%)	5.71 (63.46%)	6.38 (70.86%)	7.16 (79.51%)	4.07 (45.19%)	5.67 (62.96%)
/ð/	4.42 (49.14%)	5.78 (64.20%)	5.96 (66.17%)	6.80 (75.56%)	5.20 (57.78%)	4.91 (54.57%)
/ʒ/	-	-	11.18* (62.10%)	13.29* (73.83%)	2.67 (29.63%)	4.96 (55.06%)
/ʤ/	6.13 (68.15%)	7.73 (85.93%)	5.80 (64.44%)	7.60 (84.44%)	4.09 (45.43%)	6.00 (66.67%)
/ʃ/	7.84 (87.16%)	7.89 (87.65%)	7.49 (83.21%)	7.42 (82.47%)	4.71 (52.35%)	5.53 (61.48%)
/ʧ/	6.24 (69.38%)	6.98 (77.53%)	6.58 (73.09%)	6.76 (75.06%)	4.64 (51.60%)	5.49 (60.99%)
/ɡ/	7.69 (85.43%)	8.07 (89.63%)	6.13 (68.15%)	7.42 (82.47%)	6.22 (69.14%)	6.80 (75.56%)
/z/	7.24 (80.49%)	7.64 (84.94%)	7.36 (81.73%)	7.98 (88.64%)	6.00 (66.67%)	7.60 (84.44%)
/r/	6.20 (68.89%)	7.18 (79.75%)	6.64 (73.83%)	7.49 (83.21%)	6.13 (68.15%)	7.04 (78.27%)
/v/	5.73 (63.70%)	6.53 (72.59%)	7.38 (81.98%)	7.84 (87.16%)	7.27 (80.74%)	7.82 (86.91%)
Total	**56.31 (69.52%)**	**63.51 (78.41%)**	**70.89 (71.60%)**	**79.76 (80.56%)**	**51.00 (56.67%)**	**61.82 (68.69%)**

(*Full score = 18; otherwise = 9)

Table 4.14 Group 2's Mean Scores and Percentages on Pronouncing the Target Phonemes in Different Syllable Positions

Phonemes	***Initial position***		***Medial position***		***Final position***	
	pretest	**posttest**	**pretest**	**posttest**	**pretest**	**posttest**
/θ/	4.04 (44.94%)	4.84 (53.83%)	5.76 (63.95%)	6.16 (68.40%)	2.56 (28.40%)	4.16 (46.17%)
/ð/	3.47 (38.52%)	4.27 (47.41%)	4.69 (52.10%)	5.29 (58.77%)	2.62 (29.14%)	3.89 (43.21%)
/ʒ/	-	-	12.58 (68.88%)	12.73 (70.74%)	1.47 (16.30%)	2.67 (29.63%)
/ʤ/	6.42 (71.36%)	7.73 (85.93%)	5.47 (60.74%)	7.04 (78.27%)	2.73 (30.37%)	3.91 (43.46%)
/ʃ/	7.36 (81.73%)	8.00 (88.89%)	7.20 (80.00%)	7.64 (84.94%)	4.67 (51.85%)	4.40 (48.89%)
/ʧ/	6.04 (67.16%)	6.51 (72.35%)	5.80 (64.44%)	6.29 (69.88%)	3.87 (42.96%)	4.69 (52.10%)
/ɡ/	7.22 (80.25%)	8.00 (88.89%)	5.56 (61.73%)	7.47 (82.96%)	5.51 (61.23%)	6.02 (66.91%)
/z/	6.87 (76.30%)	7.53 (83.70%)	6.58 (73.09%)	7.56 (83.95%)	3.96 (43.95%)	6.44 (71.60%)
/r/	4.11 (45.68%)	4.36 (48.40%)	5.13 (57.04%)	5.09 (56.54%)	6.24 (69.38%)	5.93 (65.93%)
/v/	3.24 (36.05%)	3.56 (39.51%)	6.67 (74.07%)	7.73 (85.93%)	7.00 (77.78%)	7.60 (84.44%)
Total	**48.78 (60.22%)**	**54.80 (67.65%)**	**65.42 (66.08%)**	**73.00 (73.74%)**	**40.62 (45.14%)**	**49.71 (55.23%)**

(*Full score = 18; otherwise = 9)

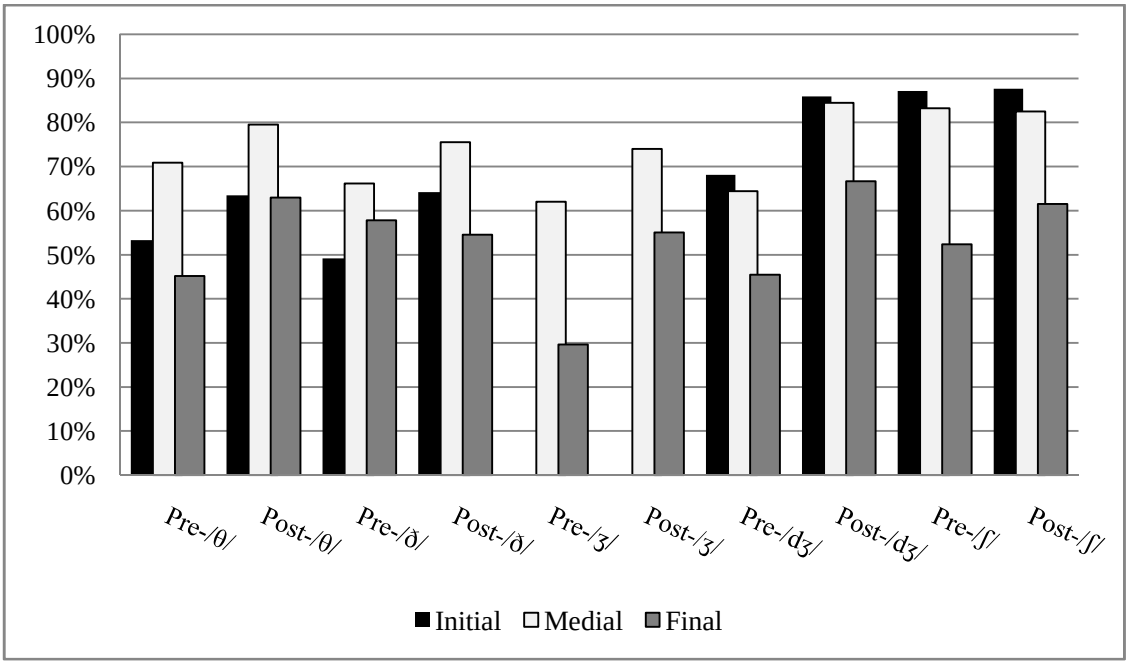

Figure 4.1. Group 1's pre- and posttest results for the students' pronunciation of /θ/, /ð/, /ʒ/, /dʒ/, and /ʃ/ in different syllable positions

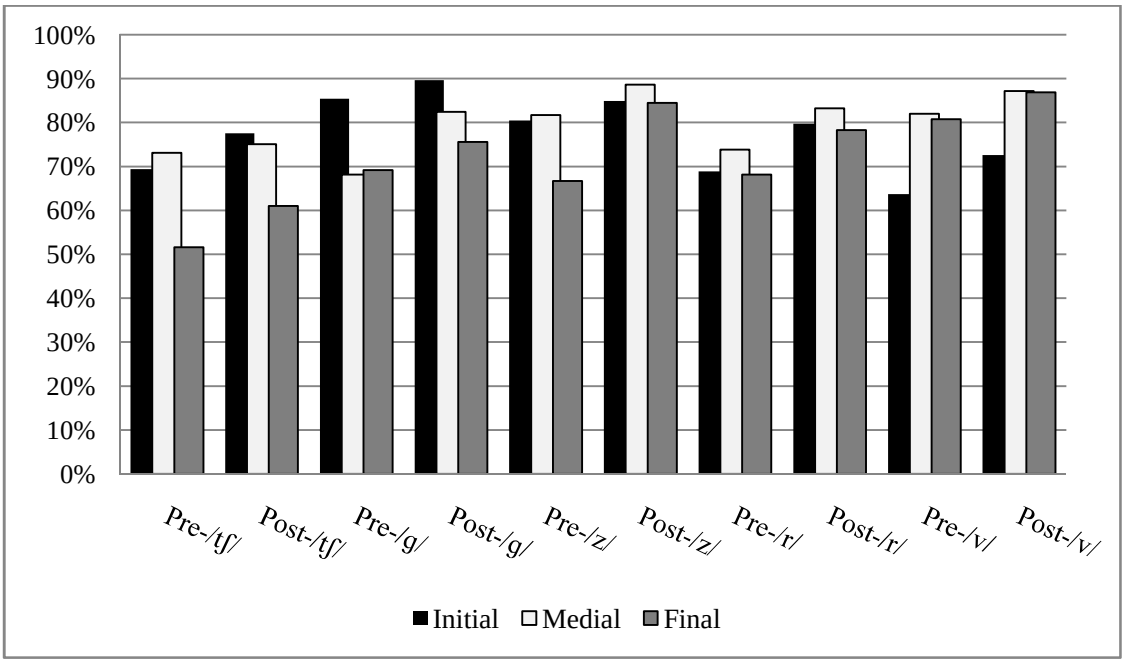

Figure 4.2. Group 1's pre- and posttest results for the students' pronunciation of /ʧ/, /g/, /z/, /r/, and /v/ in different syllable positions

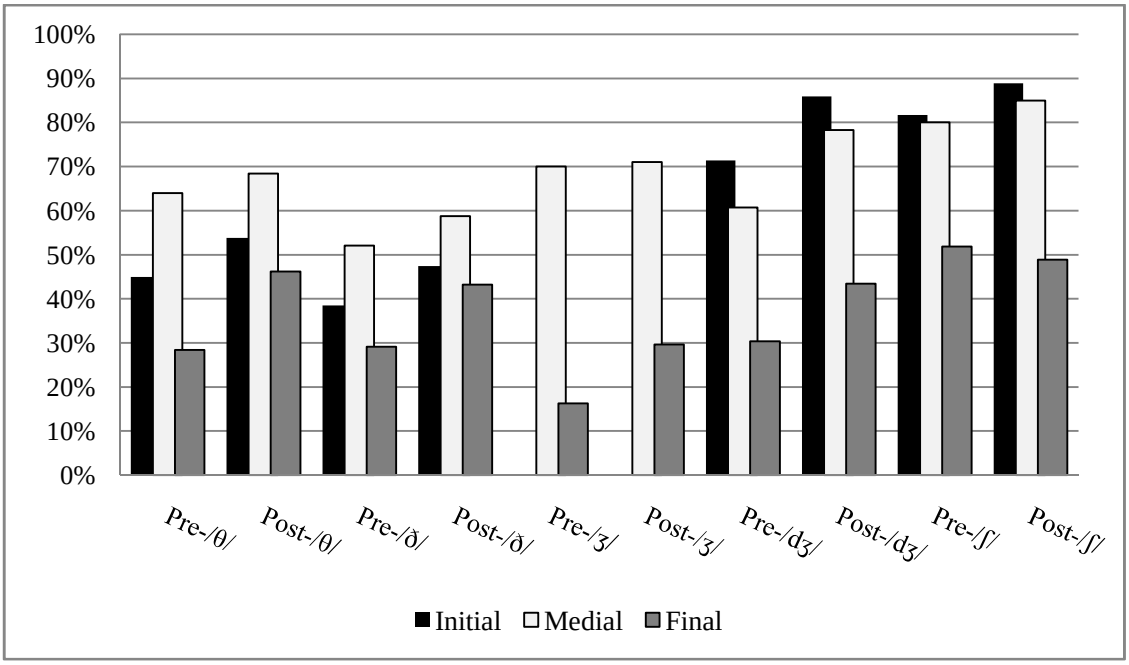

Figure 4.3. Group 2's pre- and posttest results for the students' pronunciation of /θ/, /ð/, /ʒ/, /dʒ/, and /ʃ/ in different syllable positions

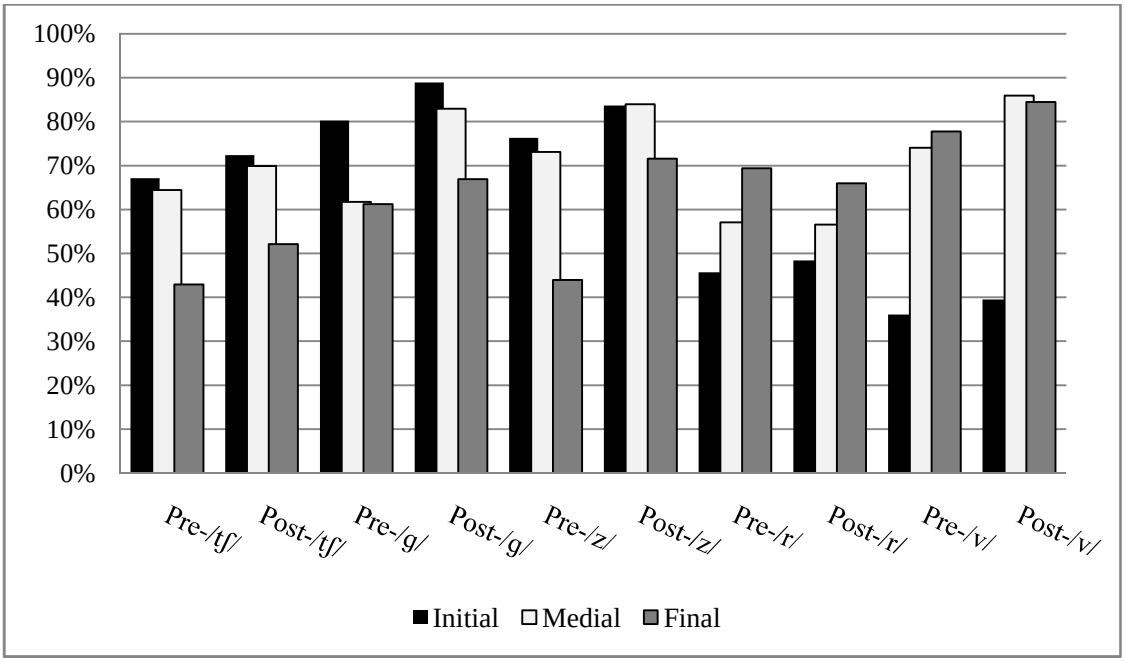

Figure 4.4. Group 2's pre- and posttest results for the students' pronunciation of /ʧ/, /g/, /z/, /r/, and /v/ in different syllable positions

According to Table 4.13 and Table 4.14 as well as Figure 4.1 to Figure 4.4, the percentages of the pretest and the posttest scores show that, both before and after receiving the treatments, the students from the two groups had the most difficulty in pronouncing the ten phonemes in final position, followed by the initial and the medial positions.

The findings point out that the /ʒ/ sound in word-final position was the most problematic for the students even after the treatment. Group 1 scored 55.06% for this sound in the final position (see Table 4.13) and Group 2 scored only 29.63% (see Table 4.14). Even in the pretest, Group 1 scored only 29.63% for this sound /ʒ/ in word-final position, and Group 2 scored 16.30%. The pretest mean scores of both groups were the lowest for this phoneme out of all the sounds occurring word-finally.

In contrast, the phoneme that was the least problematic for the students after the treatments was /g/ in word-initial position. Examination of each group's pretest mean score shows that Group 1 scored 85.43% and Group 2 scored 80.25% when pronouncing /g/ word-initially. After the treatment, Group 1's score for this sound rose to 89.63%, and Group 2's score rose to 88.89% in the posttest. Therefore, it can be assumed that /g/ was not problematic for them from the start and that the treatments increased the scores even more. In addition to the /g/ sound, the pronunciation of /ʃ/ in word-initial position was also not problematic for them from the beginning. Group 1's score for this sound was 87.16%, and Group 2's score was 81.73%. Both groups' pretest mean scores for /ʃ/ were the highest of all the sounds in word-initial position. As a result, not much improvement of the students' pronunciation of /ʃ/ was observed after the treatment. Group 1's posttest mean score for /ʃ/ rose slightly to 87.65%, and Group 2's went up to 88.89%.

There are also some concerns that need to be addressed. Table 4.13 and Table 4.14 show that the students' pronunciation of some phonemes showed hardly any improvement (/ʃ/, /ð/, and /ʒ/) and some even became worse after the treatments (the /ʃ/ and /r/). For example, Table 4.13 shows that, after the treatments, Group 1's posttest mean score for the phoneme /ʃ/ in initial position increased by only 0.49% (from 87.16% to 87.65%), /ʃ/ in medial position dropped slightly by 0.74% (from 83.21% to 82.47%), and the posttest mean score for the phoneme /ð/ in final position decreased by 3.21% (from 57.78% to 54.57%).

As for Group 2, Table 4.14 shows that the pronunciation of the phoneme /ʒ/ in medial position increased slightly by 1.86% (from 68.88% to 70.74%), and the score for the phoneme /r/ in initial position went up by only 2.72% (from 45.68% to 48.40%). However, the posttest mean scores for the phoneme /r/ in medial and final position actually went down by 0.50% (from 57.04% to 56.54%) and 3.45% (from 69.38% to 65.93%), respectively. Group 2's posttest mean score for the phoneme /ʃ/ in final position also decreased by 2.96% (from 51.85% to 48.89%). Therefore, it can be observed that, even though the students' pronunciation of a phoneme can be improved overall, they may still have difficulty pronouncing the phoneme in some syllable positions, particularly in medial and final positions, even after the treatments.

Next, Table 4.15 to Table 4.17 present the results of the paired sample *t*-test analyses of the differences between the pre- and posttest mean scores for each phoneme in different syllable positions.

Table 4.15 Paired *t*-Test of the Pre- and Posttest Mean Scores in Initial Position

Phonemes	***Methods***	***Tests***	***Means***	***SD***	***Mean differences***	**t-*Values***	***Sig. (2-tailed)***
/θ/	G1	Pretest	4.80	1.25	-0.91	-1.344	0.200
		Posttest	5.71	2.43			
	G2	Pretest	4.04	1.24	-0.80	-2.064	0.058
		Posttest	4.84	1.23			
/ð/	G1	Pretest	4.42	1.23	-1.36	-2.519	0.025*
		Posttest	5.78	1.45			
	G2	Pretest	3.47	0.96	-0.80	-1.967	0.069
		Posttest	4.27	1.55			
/ʒ/	G1	Pretest	-	-	-	-	-
		Posttest	-	-			
	G2	Pretest	-	-	-	-	-
		Posttest	-	-			
/ʤ/	G1	Pretest	6.13	1.13	-1.60	-6.089	0.000*
		Posttest	7.73	0.61			
	G2	Pretest	6.42	1.16	-1.31	-5.098	0.000*
		Posttest	7.73	0.57			
/ʃ/	G1	Pretest	7.84	0.28	-0.04	-0.252	0.805
		Posttest	7.89	0.59			
	G2	Pretest	7.35	0.60	-0.65	-3.929	0.002*
		Posttest	8.00	0.12			
/ʧ/	G1	Pretest	6.24	1.01	-0.73	-2.958	0.010*
		Posttest	6.98	1.09			
	G2	Pretest	6.04	1.17	-0.47	-1.275	0.223
		Posttest	6.51	0.99			
/g/	G1	Pretest	7.69	0.44	-0.38	-2.907	0.011*
		Posttest	8.07	0.40			
	G2	Pretest	7.22	0.48	-0.78	-6.991	0.000*
		Posttest	8.00	0.12			
/z/	G1	Pretest	7.25	0.58	-0.40	-1.884	0.081
		Posttest	7.64	0.79			
	G2	Pretest	6.87	0.59	-0.67	-3.512	0.003*
		Posttest	7.53	0.61			
/r/	G1	Pretest	6.20	1.62	-0.98	-2.583	0.022*
		Posttest	7.18	1.38			
	G2	Pretest	4.11	1.46	-0.24	-0.554	0.588
		Posttest	4.36	1.94			
/v/	G1	Pretest	5.73	1.39	-0.80	-1.371	0.192
		Posttest	6.53	2.29			
	G2	Pretest	3.24	1.30	-0.31	-0.541	0.597
		Posttest	3.56	1.73			

(*$p < 0.05$, full score = 9, n = 15)

Table 4.16 Paired *t*-Test of the Pre- and Posttest Mean Scores in Medial Position

Phonemes	***Methods***	***Tests***	***Means***	***SD***	***Mean differences***	**t-*Values***	***Sig. (2-tailed)***
/θ/	G1	Pretest	6.38	1.15	-0.78	-2.439	0.029*
		Posttest	7.16	0.75			
	G2	Pretest	5.76	0.53	-0.40	-1.521	0.151
		Posttest	6.16	0.88			
/ð/	G1	Pretest	5.96	1.15	-0.84	-2.292	0.038*
		Posttest	6.80	1.23			
	G2	Pretest	4.69	0.97	-0.60	-1.032	0.319
		Posttest	5.29	2.36			
/ʒ/	G1	Pretest	11.18	1.55	-2.11	-5.057	0.000*
		Posttest	13.29	1.30			
	G2	Pretest	12.58	0.91	-0.16	-0.313	0.759
		Posttest	12.73	1.77			
/ʤ/	G1	Pretest	5.80	1.24	-1.80	-5.628	0.000*
		Posttest	7.60	0.52			
	G2	Pretest	5.47	0.63	-1.58	-5.371	0.000*
		Posttest	7.04	0.86			
/ʃ/	G1	Pretest	7.49	0.64	0.07	0.237	0.816
		Posttest	7.42	0.80			
	G2	Pretest	7.20	0.59	-0.45	-2.431	0.029*
		Posttest	7.65	0.39			
/ʧ/	G1	Pretest	6.58	0.98	-0.18	-0.530	0.605
		Posttest	6.76	1.17			
	G2	Pretest	5.80	0.88	-0.49	-1.278	0.222
		Posttest	6.29	1.49			
/g/	G1	Pretest	6.13	2.22	-1.29	-2.775	0.015*
		Posttest	7.42	1.12			
	G2	Pretest	5.56	1.13	-1.91	-7.978	0.000*
		Posttest	7.47	0.82			
/z/	G1	Pretest	7.36	0.66	-0.62	-3.502	0.004*
		Posttest	7.98	0.20			
	G2	Pretest	6.58	0.73	-0.98	-5.120	0.000*
		Posttest	7.56	0.68			
/r/	G1	Pretest	6.64	1.42	-0.84	-2.833	0.013*
		Posttest	7.49	0.93			
	G2	Pretest	5.13	1.44	0.04	0.116	0.910
		Posttest	5.09	1.95			
/v/	G1	Pretest	7.38	0.82	-0.47	-2.096	0.055
		Posttest	7.84	0.39			
	G2	Pretest	6.67	0.56	-1.07	-5.853	0.000*
		Posttest	7.73	0.49			

(*$p < 0.05$, full score = 9, except for /ʒ/, for which full score = 18, n = 15)

Table 4.17 Paired *t*-Test of the Pre- and Posttest Mean Scores in Final Position

Phonemes	***Methods***	***Tests***	***Means***	***SD***	***Mean differences***	**t-*Values***	***Sig. (2-tailed)***
/θ/	G1	Pretest	4.07	1.84	-1.60	-3.051	0.009*
		Posttest	5.67	1.08			
	G2	Pretest	2.55	1.31	-1.60	-4.018	0.001*
		Posttest	4.16	1.58			
/ð/	G1	Pretest	5.20	1.31	0.29	0.921	0.372
		Posttest	4.91	1.33			
	G2	Pretest	2.62	1.01	-1.27	-2.343	0.034*
		Posttest	3.89	1.86			
/ʒ/	G1	Pretest	2.67	2.10	-2.29	-3.926	0.002*
		Posttest	4.96	2.30			
	G2	Pretest	1.47	0.96	-1.20	-1.717	0.108
		Posttest	2.67	2.52			
/ʤ/	G1	Pretest	4.09	2.05	-1.91	-3.821	0.002*
		Posttest	6.00	2.02			
	G2	Pretest	2.73	1.33	-1.18	-2.011	0.064
		Posttest	3.91	2.47			
/ʃ/	G1	Pretest	4.71	2.02	-0.82	-0.974	0.346
		Posttest	5.53	2.53			
	G2	Pretest	4.67	0.96	0.27	0.462	0.651
		Posttest	4.40	1.95			
/ʧ/	G1	Pretest	4.64	1.89	-0.84	-2.474	0.027*
		Posttest	5.49	2.01			
	G2	Pretest	3.87	1.66	-0.82	-1.991	0.066
		Posttest	4.69	1.28			
/g/	G1	Pretest	6.22	1.09	-0.58	-2.349	0.034*
		Posttest	6.80	0.94			
	G2	Pretest	5.51	0.96	-0.51	-1.007	0.331
		Posttest	6.02	1.59			
/z/	G1	Pretest	6.00	1.81	-1.60	-3.367	0.005*
		Posttest	7.60	0.57			
	G2	Pretest	3.96	1.40	-2.49	-4.781	0.000*
		Posttest	6.44	1.99			
/r/	G1	Pretest	6.13	1.10	-0.91	-3.188	0.007*
		Posttest	7.04	0.94			
	G2	Pretest	6.24	0.93	0.31	1.606	0.131
		Posttest	5.93	0.63			
/v/	G1	Pretest	7.27	0.79	-0.56	-2.645	0.019*
		Posttest	7.82	0.37			
	G2	Pretest	7.00	0.40	-0.60	-3.614	0.003*
		Posttest	7.60	0.58			

(*$p < 0.05$, full score = 9, n = 15)

Table 4.15 shows that, in the direct-teaching group, the posttest mean scores for five phonemes, i.e., /ð/, /ʤ/, /ʧ/, /g/, and /r/, increased significantly. In the English-song group, there were four phonemes, i.e., /ʤ/, /ʃ/, /g/, and /z/, whose posttest mean scores increased significantly from the pretest mean scores. The findings indicate that both the direct-teaching method and the use of English songs enhanced the pronunciation of the phonemes /ʤ/ and /g/ in word-initial position, while the two methods produced different results in improving the other phonemes.

Table 4.16 shows that, in improving the pronunciation of the problematic phonemes in word-medial position, the direct-teaching method increased the students' posttest scores for six phonemes, /θ/, /ð/, /ʒ/, /g/, /z/, and /r/, at a significance level of 0.05. The use of English songs increased the students' posttest scores for five phonemes, /ʤ/, /ʃ/, /g/, /z/, and /v/, at a significance level of 0.05. The findings also show that the phonemes /g/ and /z/ improved using both methods while improvement of the other phonemes depended on which treatment was employed. Furthermore, it can be observed from Table 4.16 that the pronunciation of /ʃ/ in the direct-teaching group and the pronunciation of /r/ in the English-song group dropped slightly in the posttest.

Table 4.17 reveals the superior effectiveness of the direct-teaching method over the use of English songs in improving the pronunciation of the target phonemes in word-final position. As the data show, the direct-teaching method increased the students' posttest scores for eight phonemes, i.e., /θ/, /ʒ/, /ʤ/, /ʧ/, /g/, /z/, /r/, and /v/, whereas the use of English songs increased the students' posttest scores for only four phonemes: /θ/, /ð/, /z/, and /v/. Three phonemes, /θ/, /z/, and /v/, improved with both methods. Additionally, the pronunciation of three phonemes became slightly worse: the students' pronunciation of /ð/ in the direct-teaching group and /ʃ/ and /r/ in the English-song group.

In summary, it can be generally observed that the direct-teaching method was more effective than the use of English songs when examining the positive effects on improving the pronunciation of the problematic phonemes occurring in different syllable positions. The direct-teaching method improved the pronunciation of five phonemes in initial position, six phonemes in medial position, and eight phonemes in final position. In contrast, the use of English songs, although it was not as effective as

the other method, improved four phonemes in initial position, five phonemes in medial position, and four phonemes in final position. Among the improved phonemes, some were enhanced by both methods, while some may require use of a particular method. This suggests that both methods may provide more positive results with some phonemes than with others.

3. Transcription of the Students' Pronunciation of the ten Phonemes Shown in Frequencies

To observe changes in the students' pronunciation, only numeric figures and scores might not be enough to track their development. Thus, the students' pronunciation of the target phonemes were transcribed and reported in frequencies as presented in Table 4.18 to Table 4.23.

Table 4.18 Transcription of Group 1's Pronunciation of the Ten Phonemes in Initial Position

Target Phonemes	***Pretest***			***Posttest***		
	sounds	***tally***	***percent***	***sounds***	***tally***	***percent***
/θ/	[t]	23	51.11%	[θ]	30	66.67%
	[tʰ]	18	40.00%	[s]	4	8.89%
	[θ]	3	6.67%	[tʰ]	4	8.89%
	[tʰr]	1	2.22%	[t̪]	3	6.67%
				[ð]	3	6.67%
				[t]	1	2.22%
/ð/	[d]	44	97.78%	[ð]	21	46.67%
	[ð]	1	2.22%	[d]	18	40.00%
				[d̪]	6	13.33%
/ʒ/	-	-	-	-	-	-
/ʤ/	[ʨ]	38	84.44%	[ʤ]	28	62.22%
	[k]	6	13.33%	[ʨ]	14	31.11%
	[ʤ]	1	2.22%	[ʒ]	2	4.44%
				[k]	1	2.22%
/ʃ/	[ʃ]	42	93.33%	[ʃ]	44	97.78%
	[ʨʰ]	3	6.67%	[ʧ]	1	2.22%
/ʧ/	[ʨʰ]	23	51.11%	[ʧ]	22	48.89%
	[ʃ]	15	33.33%	[ʃ]	21	46.67%
	[ʧ]	7	15.56%	[ʨʰ]	2	4.44%
/g/	[k]	31	68.89%	[g]	44	97.78%
	[g]	14	31.11%	[k]	1	2.22%
/z/	[s]	42	93.33%	[z]	37	82.22%
	[z]	3	6.67%	[s]	8	17.78%
/r/	[ɾ]	18	40.00%	[r]	32	71.11%
	[l]	14	31.11%	[ɾ]	7	15.56%
	[r]	13	28.89%			
/v/	[w]	38	84.44%	[v]	26	57.78%
	[v]	5	11.11%	[w]	13	28.89%
	[f]	2	4.44%	[w] labiodentalized	6	13.33%

Table 4.19 Transcription of Group 2's Pronunciation of the Ten Phonemes in Initial Positions

Target Phonemes	***Pretest***			***Posttest***		
	sounds	***tally***	***percent***	***sounds***	***tally***	***percent***
/θ/	[t]	31	68.89%	[t]	18	40.00%
	[tʰ]	12	26.67%	[tʰ]	11	24.44%
	[d]	1	2.22%	[θ]	8	17.78%
	[θ]	1	2.22%	[t̪]	4	8.89%
				[ð]	2	4.44%
				[s]	1	2.22%
				[tʰr]	1	2.22%
/ð/	[d]	45	100.00%	[d]	35	77.78%
				[ð]	6	13.33%
				[d̪]	4	8.89%
/ʒ/	-	-	-	-	-	-
/ʤ/	[ʦ]	41	91.11%	[ʤ]	25	55.56%
	[k]	4	8.89%	[ʦ]	20	44.44%
/ʃ/	[ʃ]	31	68.89%	[ʃ]	43	95.56%
	[ʦʰ]	12	26.67%	[ʧ]	2	4.44%
	[ʦ]	2	4.44%			
/ʧ/	[ʦʰ]	35	77.78%	[ʧ]	20	44.44%
	[ʃ]	7	15.56%	[ʃ]	24	53.33%
	[ʧ]	3	6.67%	[ʦʰ]	1	2.22%
/g/	[k]	42	93.33%	[g]	38	84.44%
	[g]	3	6.67%	[k]	7	15.56%
/z/	[s]	44	97.78%	[s]	39	86.67%
	[z]	1	2.22%	[z]	6	13.33%
/r/	[l]	36	80.00%	[l]	27	60.00%
	[ɾ]	7	15.56%	[r]	7	15.56%
	[r]	2	4.44%	[ɾ]	11	24.44%
/v/	[w]	45	100.00%	[w]	40	88.89%
				[w] labiodentalized	3	6.67%
				[v]	2	4.44%

Table 4.18 and Table 4.19 show that the students' pronunciation of the target phonemes in word-initial position was more varied in the posttest, especially with regard to /θ/ and /ð/; however, such variation in some students' production actually indicates improved pronunciation. In general, the students changed the way they pronounced the target phonemes and were likely to pronounce all the ten phonemes more correctly in the posttest in both groups. Moreover, Group 2 students started to articulate new sounds after the treatment that they had not pronounced at all before, specifically [ð], [ʤ], and [v].

Table 4.20 Transcription of Group 1's Pronunciation of the Ten Phonemes in Medial Position

Target Phonemes	***Pretest***			***Posttest***		
	sounds	***tally***	***percent***	***sounds***	***tally***	***percent***
/θ/	[t]	36	80.00%	[θ]	38	84.44%
	[θ]	6	13.33%	[tʰ]	2	4.44%
	[tʰ]	3	6.67%	[ð]	2	4.44%
				[t]	2	4.44%
				[t̪]	1	2.22%
/ð/	[tʰ]	24	53.33%	[ð]	32	71.11%
	[t]	10	22.22%	[θ]	10	22.22%
	[θ]	9	20.00%	[d̪]	1	2.22%
	[d]	2	4.44%	[t]	1	2.22%
				[tʰ]	1	2.22%
/ʒ/	[ʃ]	56	62.22%	[ʃ]	57	63.33%
	[tɕʰ]	30	33.33%	[ʒ]	25	27.78%
	[s]	4	4.44%	[ʧ]	7	7.78%
				[s]	1	1.11%
/ʤ/	[tɕ]	28	62.22%	[ʤ]	26	57.78%
	[tˋ]	9	20.00%	[tɕ]	15	33.33%
	[ʤ]	4	8.89%	[ø]	2	4.44%
	[ʧ]	2	4.44%	[ʧ]	1	2.22%
	[tɕʰ]	1	2.22%	[ʒ]	1	2.22%
	[ʃ]	1	2.22%			
/ʃ/	[ʃ]	35	77.78%	[ʃ]	40	88.89%
	[tɕʰ]	10	22.22%	[ʒ]	3	6.67%
				[ʧ]	2	4.44%
/ʧ/	[tɕ]	23	51.11%	[ʧ]	22	48.89%
	[tɕʰ]	14	31.11%	[ʃ]	14	31.11%
	[ʧ]	3	6.67%	[tɕ]	4	8.89%
	[ʤ]	2	4.44%	[tɕʰ]	2	4.44%
	[ʃ]	2	4.44%	[ʒ]	2	4.44%
	[tʰ]	1	2.22%	[ʤ]	1	2.22%
/g/	[k]	28	62.22%	[g]	36	80.00%
	[tɕ]	9	20.00%	[k]	4	8.89%
	[g]	6	13.33%	[tɕ]	2	4.44%
	[ʤ]	2	4.44%	[ʤ]	2	4.44%
				[ŋg]	1	2.22%
/z/	[s]	39	86.67%	[z]	40	88.89%
	[z]	6	13.33%	[s]	5	11.11%
/r/	[r]	17	37.78%	[r]	42	93.33%
	[l]	15	33.33%	[ɾ]	2	4.44%
	[ɾ]	13	28.89%	[l]	1	2.22%
/v/	[w]	23	51.11%	[v]	37	82.22%
	[v]	18	40.00%	[w] labiodentalized	6	13.33%
	[f]	4	8.89%	[f]	1	2.22%
				[w]	1	2.22%

Table 4.21 Transcription of Group 2's Pronunciation of the Ten Phonemes in Medial Position

Target Phonemes	*Pretest*			*Posttest*		
	sounds	*tally*	*percent*	*sounds*	*tally*	*percent*
/θ/	[t]	41	91.11%	[t]	24	53.33%
	[tʰ]	3	6.67%	[θ]	10	22.22%
	[θ]	1	2.22%	[t̪]	8	17.78%
				[ð]	1	2.22%
				[tʰ]	1	2.22%
				[tʰr]	1	2.22%
/ð/	[tʰ]	28	62.22%	[tʰ]	15	33.33%
	[t]	13	28.89%	[ð]	10	22.22%
	[θ]	2	4.44%	[θ]	7	15.56%
	[d]	2	4.44%	[t̪]	6	13.33%
				[d̪]	4	8.89%
				[t]	3	6.67%
/ʒ/	[tɕʰ]	56	62.22%	[ʃ]	62	68.89%
	[ʃ]	30	33.33%	[ʒ]	16	17.78%
	[s]	4	4.44%	[ʧ]	9	10.00%
				[tɕʰ]	2	2.22%
				[ʤ]	1	1.11%
/ʤ/	[tɕ]	30	66.67%	[ʤ]	24	53.33%
	[tˋ]	14	31.11%	[tɕ]	12	26.67%
	[tɕʰ]	1	2.22%	[tˋ]	5	11.11%
				[ʧ]	2	4.44%
				[ʃ]	1	2.22%
				[k]	1	2.22%
/ʃ/	[ʃ]	24	53.33%	[ʃ]	38	84.44%
	[tɕʰ]	17	37.78%	[ʧ]	7	15.56%
	[tɕ]	2	4.44%			
	[ʒ]	1	2.22%			
	[ʧ]	1	2.22%			
/ʧ/	[tɕ]	25	55.56%	[ʧ]	16	35.56%
	[tɕʰ]	10	22.22%	[tɕ]	14	31.11%
	[tˋ]	4	8.89%	[ʃ]	5	11.11%
	[tʰ]	4	8.89%	[ʤ]	3	6.67%
	[ʤ]	1	2.22%	[tʰ]	2	4.44%
	[ʧ]	1	2.22%	[ʒ]	2	4.44%
				[t]	1	2.22%
				[d]	1	2.22%
				[ʔ]	1	2.22%
/g/	[k]	36	80.00%	[g]	30	66.67%
	[tɕ]	8	17.78%	[k]	9	20.00%
	[g]	1	2.22%	[tɕ]	3	6.67%
				[ŋk]	2	4.44%
				[ʤ]	1	2.22%

Target Phonemes	*Pretest*			*Posttest*		
	sounds	*tally*	*percent*	*sounds*	*tally*	*percent*
/z/	[s]	39	86.67%	[s]	30	66.67%
	[z]	6	13.33%	[z]	15	33.33%
/r/	[l]	26	57.78%	[l]	28	62.22%
	[r]	11	24.44%	[r]	13	28.89%
	[ɾ]	6	13.33%	[ɾ]	4	8.89%
	[ʃ]	1	2.22%			
	[b]	1	2.22%			
/v/	[w]	34	75.56%	[v]	26	57.78%
	[v]	8	17.78%	[w]	14	31.11%
	[pˀ]	2	4.44%	[w] labiodentalized	3	6.67%
	[f]	1	2.22%	[f]	2	4.44%

The data in Table 4.20 and Table 4.21 show that the students' pronunciation of medial consonants also became more varied after the treatments in both the direct-teaching group and the English-song group, although particularly in the latter group. This is partly because the students did not know how to pronounce the sounds. For example, the word *fortune* /'fɔr.ʧən/ was wrongly pronounced as [fɔ.'tʰuːn], *struggle* /strʌ.gəl/ was pronounced as [sə.'traŋ.gəl], and *Peggy* /'pɛ.gi/ was pronounced as ['pʰekˀ.tɕiː].

This transcription of the students' pronunciation also shows that the students in both groups were able to pronounce all the ten phonemes more correctly after the treatments. In the direct-teaching group, the students' pronunciation of the [z] sound improved the most, increasing 75.56% (from 13.33% to 88.89%). In comparison, the students in the English-song group improved their pronunciation of the [ʤ] sound the most, increasing 53.33%. Moreover, the sounds [ð] and [ʒ] in medial position were found to be produced by the students in both groups only after the treatment (as seen in Table 4.20 and Table 4.21), and the pronunciation of [ʤ] started to emerge in the English-song group as well, indicating their pronunciation development.

Table 4.22 Transcription of Group 1's Pronunciation of the Ten Phonemes in Final position

Target Phonemes	***Pretest***			***Posttest***		
	sounds	***tally***	***percent***	***sounds***	***tally***	***percent***
/θ/	[t˒]	19	42.22%	[θ]	23	51.11%
	[tʰ]	12	26.67%	[t̪]	12	26.67%
	[ø]	11	24.44%	[t˒]	3	6.67%
	[θ]	3	6.67%	[tʰ]	3	6.67%
				[ð]	2	4.44%
				[s]	1	2.22%
				[ø]	1	2.22%
/ð/	[t˒]	37	82.22%	[θ]	17	37.78%
	[θ]	4	8.89%	[ð]	16	35.56%
	[tʰ]	2	4.44%	[t˒]	6	13.33%
	[t]	2	4.44%	[d]	2	4.44%
				[d̪]	2	4.44%
				[t̪]	1	2.22%
				[tʰ]	1	2.22%
/ʒ/	[t˒]	30	66.67%	[ʃ]	11	24.44%
	[ʧ]	6	13.33%	[ʧ]	10	22.22%
	[ʃ]	5	11.11%	[ʤ]	7	15.56%
	[ʤ]	4	8.89%	[ʒ]	5	11.11%
				[t˒]	4	8.89%
				[ø]	2	4.44%
				[d]	1	2.22%
				[ð]	1	2.22%
				[tʰ]	1	2.22%
				[s]	1	2.22%
				[z]	1	2.22%
				[zʲ]	1	2.22%
/ʤ/	[ø]	23	51.11%	[ʤ]	22	48.89%
	[t˒]	9	20.00%	[ʧ]	10	22.22%
	[ʤ]	7	15.56%	[ø]	5	11.11%
	[ʨʰ]	4	8.89%	[ŋ]	2	4.44%
	[ʨ]	1	2.22%	[ʨ]	2	4.44%
	[ʧ]	1	2.22%	[k˒]	1	2.22%
				[ʒ]	1	2.22%
				[z]	1	2.22%
				[s]	1	2.22%
/ʃ/	[t˒]	18	40.00%	[ʃ]	29	64.44%
	[ʧ]	11	24.44%	[ʧ]	14	31.11%
	[ʨʰ]	8	17.78%	[s]	1	2.22%
	[ʃ]	8	17.78%	[t˒]	1	2.22%
/ʧ/	[t˒]	15	33.33%	[ʧ]	23	51.11%
	[ʨʰ]	13	28.89%	[ʃ]	11	24.44%
	[ʧ]	9	20.00%	[t˒]	4	8.89%

Target Phonemes	*Pretest*			*Posttest*		
	sounds	*tally*	*percent*	*sounds*	*tally*	*percent*
	[ʃ]	6	13.33%	[tɕʰ]	3	6.67%
	[kˀ]	1	2.22%	[ø]	3	6.67%
	[m]	1	2.22%	[kˀ]	1	2.22%
/g/	[kˀ]	29	64.44%	[g]	27	60.00%
	[k]	9	20.00%	[kʰ]	10	22.22%
	[ŋ]	3	6.67%	[kˀ]	3	6.67%
	[kʰ]	2	4.44%	[ŋ]	2	4.44%
	[g]	2	4.44%	[ʤ]	1	2.22%
				[ŋkʰ]	1	2.22%
/z/	[s]	33	73.33%	[z]	41	91.11%
	[ø]	11	24.44%	[s]	3	6.67%
	[z]	1	2.22%	[ø]	1	2.22%
/r/	[ø]	36	80.00%	[r]	34	75.56%
	[r]	9	20.00%	[ø]	11	24.44%
/v/	[f]	36	80.00%	[v]	40	88.89%
	[pˀ]	5	11.11%	[f]	3	6.67%
	[v]	4	8.89%	[pˀ]	2	4.44%

Table 4.23 Transcription of Group 2's Pronunciation of the Ten Phonemes in Final Position

Target Phonemes	*Pretest*			*Posttest*		
	sounds	*tally*	*percent*	*sounds*	*tally*	*percent*
/θ/	[tˀ]	23	51.11%	[t̪]	18	40.00%
	[ø]	16	35.56%	[tˀ]	8	17.78%
	[s]	2	4.44%	[θ]	8	17.78%
	[tʰ]	2	4.44%	[ø]	5	11.11%
	[tɕʰ]	2	4.44%	[ʧ]	3	6.67%
				[ʃ]	1	2.22%
				[s]	1	2.22%
				[t]	1	2.22%
/ð/	[tˀ]	29	64.44%	[tˀ]	17	37.78%
	[tʰ]	5	11.11%	[θ]	10	22.22%
	[ø]	4	8.89%	[ð]	9	20.00%
	[θ]	3	6.67%	[t̪]	4	8.89%
	[d]	2	4.44%	[tʰ]	3	6.67%
	[ʃ]	2	4.44%	[d]	1	2.22%
				[t]	1	2.22%
/ʒ/	[tˀ]	33	73.33%	[tˀ]	22	48.89%
	[kˀ]	3	6.67%	[ʃ]	7	15.56%
	[ŋ]	3	6.67%	[ʧ]	7	15.56%
	[ʃ]	2	4.44%	[ø]	3	6.67%
	[ʤ]	1	2.22%	[t]	1	2.22%

Target Phonemes	*Pretest*			*Posttest*		
	sounds	*tally*	*percent*	*sounds*	*tally*	*percent*
	[kʰ]	1	2.22%	[g]	1	2.22%
	[ʧ]	1	2.22%	[ʤ]	1	2.22%
	[tɕʰ]	1	2.22%	[kʰ]	1	2.22%
				[ŋ]	1	2.22%
				[θ]	1	2.22%
/ʤ/	[ø]	21	46.67%	[ø]	14	31.11%
	[tˀ]	9	20.00%	[ʤ]	11	24.44%
	[ŋ]	6	13.33%	[tɕ]	6	13.33%
	[tɕ]	6	13.33%	[tˀ]	3	6.67%
	[kˀ]	2	4.44%	[ʧ]	2	4.44%
	[kʰ]	1	2.22%	[kˀ]	1	2.22%
				[kʰ]	1	2.22%
/ʃ/	[tˀ]	21	46.67%	[ʧ]	17	37.78%
	[ʃ]	12	26.67%	[ʃ]	13	28.89%
	[tɕʰ]	7	15.56%	[tˀ]	11	24.44%
	[ʧ]	3	6.67%	[s]	3	6.67%
	[ø]	2	4.44%	[kʰ]	1	2.22%
/ʧ/	[tˀ]	20	44.44%	[ʧ]	21	46.67%
	[tɕʰ]	13	28.89%	[ʃ]	9	20.00%
	[kˀ]	3	6.67%	[tˀ]	8	17.78%
	[ʧ]	3	6.67%	[kˀ]	5	11.11%
	[ʃ]	2	4.44%	[s]	1	2.22%
	[n]	1	2.22%	[t]	1	2.22%
	[ø]	1	2.22%			
	[ʔ]	1	2.22%			
	[s]	1	2.22%			
/g/	[kˀ]	37	82.22%	[kˀ]	19	42.22%
	[ŋ]	4	8.89%	[kʰ]	10	22.22%
	[k]	1	2.22%	[g]	9	20.00%
	[ʃ]	1	2.22%	[ŋ]	4	8.89%
	[kʰ]	1	2.22%	[ø]	2	4.44%
	[g]	1	2.22%	[ʧ]	1	2.22%
/z/	[s]	34	75.56%	[s]	23	51.11%
	[ø]	9	20.00%	[z]	13	28.89%
	[f]	1	2.22%	[ø]	8	17.78%
	[tˀ]	1	2.22%	[kʰ]	1	2.22%
/r/	[ø]	41	91.11%	[ø]	38	84.44%
	[r]	4	8.89%	[r]	7	15.56%
/v/	[pˀ]	27	60.00%	[v]	23	51.11%
	[f]	18	40.00%	[pˀ]	11	24.44%
				[f]	11	24.44%

In general, both groups had a tendency to pronounce these phonemes in final position more accurately in the posttest. Some sounds that were only rarely pronounced in the pretest, such as [ð], [z], and [ɡ], were heard more often in the posttest. In addition, since Thai final consonants are unreleased and Thai does not have any final clusters, the students' pronunciation of words such as *bag*, *mirage*, *change*, and *month* were mostly pronounced in the pretest as if these words were Thai, i.e., the final sounds were inaudible and the final clusters were reduced: *bag* [bæk̚], *mirage* [mi.rà:t̚], *change* [tɕʰé:n], *month* [mán]. After the treatments, the students in both groups tended to pronounce the final sounds more than before, although some mistakes were still found in their pronunciation.

As for the students' pronunciation improvement, Table 4.22 shows that, with the direct-teaching method, the pronunciation of the [z] sound improved the most, increasing 88.89% (from 2.22% to 91.11%), and the students' pronunciation of [ð] and [ʒ] in the final position emerged only with the posttest. Table 4.23 shows that the use of English songs improved the pronunciation of the [v] sound the most, by 51.11%, and the production of [θ], [ð], [z], and [v], which were not produced in word-final position at all in the pretest, was finally observed in the posttest.

However, as stated previously, mistakes were also found in the students' pronunciation of the target sounds in word-final position. The major errors observed were Thai final-sound substitution since they often replaced English final sounds with Thai unreleased final stops [t̚], [p̚], and [k̚]. In addition, some students made mistakes in pronunciation because they did not know how to pronounce the words given. For example, *giant* was pronounced [keːnt], *realize* as [liː.li.ˈsiː], and *breathe* as [ˈbeː.tʰə]. Some students tried to rush through the test too quickly and wound up making careless mistakes. For example, *beige* was pronounced as [bliŋ], *thigh* as [tiŋ], and *trash* as [trɛk]. Therefore, the students' production of the target sounds may have been affected by insufficient knowledge of how to pronounce the words and careless mistakes.

Furthermore, Table 4.22 and Table 4.23 reveal an interesting point about the pronunciation of the phoneme /ʒ/ in final position because it had the most variations after the treatments. Group 1 students pronounced this phoneme in four different ways in the pretest but up to twelve different ways in the posttest. Group 2 students

pronounced this phoneme in eight different ways in the pretest, then went up to ten different ways in the posttest. As a result, it can be assumed that the phoneme /ʒ/ in final position presented a lot of pronunciation problems for students in both groups.

In summary, Table 4.18 to Table 4.23 demonstrate how the students' pronunciation of the problematic phonemes changed after they received the two different treatments. It can be observed that, in general, substitution of Thai phonology in pronouncing the target phonemes gradually decreased. Some students became able to pronounce sounds that they had not pronounced before, such as [ð], [ʤ], and [v] in different syllable positions. Nevertheless, influences from Thai phonology were still present in the students' production. For example, they used [l] and [ɾ] interchangeably for English /r/ and had difficulty in releasing final consonants.

The transcription of the students' pronunciation also suggests that orthography could be a cause of pronunciation problems. For example, /θ/ and /ð/ are both spelled with *th* as in *healthy* and *father*. The phonemes /g/ and /ʤ/ are both usually spelled with a *g*, such as *Peggy* and *pages*. Moreover, some phonemes can be spelled with several different letters, such as /ʧ/ in the words *fortune* and *searching*. This inconsistency in writing and reading may confuse the students and reinforce the pronunciation problems.

With regard to the frequencies of occurrence, it is observed that the direct-teaching method improved the students' production of the [z] sound the most, by 75.55% in initial position, by 75.56% in the medial position, and by 88.89% in final position. The method of using English songs improved the production of the [g] sound in initial position by 77.77% and in medial position by 64.45% and the production of the [v] sound in final position by 51.11%.

Additional Findings from Qualitative Data

Due to the small number of participants, qualitative data were collected in parallel to make up for the deficiency of the small sample size. Interviews with some of the students from both groups allow us to see the effects of the two instructional methods from the students' point of view and to understand their thoughts and feelings. Then, my reflections on the experiment follow, summarizing my judgments

and observations throughout the process of data collection and offering a valuable contribution to English-pronunciation teaching.

1. Interviews

I conducted interviews with six students (three students from each group) at the end of the courses to elicit their opinions and feelings about the instruction. The students interviewed were selected on the basis of different personalities and different reactions towards the methods they received. In the direct-teaching group, Students 2, 8, and 9 were selected (as seen in Table 4.3). Student 2 was very shy with fair pronunciation skills, but she improved herself to a certain extent during the course. Student 8 was very hard-working in class and was the one that showed the greated improvement between the pre- and posttest scores. Student 9 was clever and learned new sounds quickly. In the English-song group, Students 23, 25, and 29 were selected. Student 23 had a strong passion for listening to and singing English songs. Furthermore, she liked to record herself singing in English and posted her sound clips on YouTube. Student 25 was a hard-working student. She did not have any special interest in English songs at all before taking the course. Student 29 was quiet and very shy. She liked listening to songs, but she listened to Thai songs more than English songs. In the second half of the course, she rarely came to class because she had to go to tutoring school.

The interviews were designed to be semi-structured, with some questions being prepared by the researcher to ask the participants for specific information and some questions being asked promptly during the interview. The interviewees were also allowed to use Thai as a medium of communication with the researcher so as to eliminate the language barrier and to enter their insights. Cohen (28) gives as an advantage of the semi-structured interview that both the researcher and the participants “may pursue topics of interest which may not have been foreseen when the questions were originally drawn up.” This is because semi-structured interviews give the participants a certain amount of freedom in responding to the questions; therefore, “the exact shape of the response is not predetermined.” Each student interview took around 30 minutes by phone and was recorded for later transcription.

The data obtained from the interviews were translated into English and searched for key words, phrases, and sentences in order to allow classification into categories and presentation in the following topics.

1.1. Attitudes towards the Instructional Methods Received

1.1.1 The attitudes of the interviewees in the direct-teaching group:

Challenging

All of the interviewees found the pronunciation tasks and activities challenging, particularly the listening task that asked them to distinguish the sounds they heard. Student 9 said "It's challenging to identify whether the sounds are the same or different and when you [the researcher] walked to each of the students' desks to listen to our pronunciation." Student 2 said, "It's very challenging and I'd never thought before that I could finally make it! At first, I wasn't sure if I could do it well, but after your [the researcher's] demonstration and following your instruction, I think everyone can improve their pronunciation." Similarly, Student 8 said that it was very challenging to try to pronounce the sounds correctly when the other students managed to pronounce them well.

Enjoyable

All of the interviewees agreed that the course was enjoyable because of the fun activities. Student 8 said "The activities were interesting and enjoyable to participate in." Student 9 said she liked the paper-cup activity the most. "What I found to be the most enjoyable activity was the paper-cup one, in which I pronounced a sound at the end of one cup and let my friend at the other end guess what sound I was pronouncing." Additionally, Student 2 said, "It's fun to practice pronunciation with friends. It was really funny when we mispronounced the sound and made fun of it. What a strange voice! I thought."

New Experience

All of the interviewees found learning English pronunciation to be a new experience that they hardly found at their schools. Student 9 said it was exciting to learn new things about pronunciation since she had not learned much

about this in detail at school or at any other tutoring schools. “Most schools only teach students to read a whole word aloud, but they don’t teach detailed descriptions of sounds or train students to pronounce them, but this course did.” Likewise, Student 8, who made the highest pronunciation improvement of this group, said this course broadened her horizons about English pronunciation, and it made her pronounce English sounds more clearly than before. Student 2, who was shy, said, “I felt very excited every time I came to class because I didn’t know what I would be asked to do each day, which could be something I had never done before. That’s why I was eager to learn.”

Pressure to do well

Student 2 and Student 8 thought this course was sometimes stressful. They said they put themselves under pressure in the first few periods when the other students managed to pronounce difficult sounds but they could not. Student 2 said, *“At first, I was afraid and I didn’t know if I could make it. I was shy about my accent. But when it’s ‘a must’ that everybody had to practice pronunciation, I also had to do it. I had to be brave and everything would be okay.”* Student 8 said, *“Sometimes I felt bad because I couldn’t pronounce a sound while the other students could, so I put myself under pressure, wondering why I couldn’t do it.”* However, both Student 2 and Student 8 finally managed to improve themselves after receiving encouragement and working hard.

1.1.2 The attitudes of the interviewees in the English-song group:

Better than I Had Thought

All of the interviewees said this method was unexpectedly better than they thought it would be before attending the class. Student 23, who loved singing English songs, said, “At first, I thought it was just singing English songs, sharing singing techniques, and there’s nothing much to do, but it was so cool! It was better than I’d thought and made me understand English pronunciation more.” Similarly, Student 25 thought that she would be listening to English songs and learning the lyrics word by word, but it was better than she had imagined. Student 29

said, “I thought it would be like common tutoring, but, after learning, I found it nice because I like singing.”

Fun

All of the interviewees said they enjoyed this class because it was not stressful. Student 23 and Student 29, both of whom were interested in English songs, expressed similar views. Student 23 said, “I really enjoyed the class because personally I love listening to English songs.” Even Student 29, who was usually very quiet and shy, said, “I think it’s fun. I like it because I like singing, even though English songs are not my favorite.” Likewise, even Student 25, who was not particularly interested in English songs, said, “I like it. It was fun, and the songs you chose are beautiful and have good meanings.”

Learned a Lot

All of the interviewees said that they learned a lot from this course. They learned not only techniques to help them sing English songs better but also English pronunciation through songs. Student 23, who took this course because she wanted to practice singing English songs, said, “You [the researcher] taught me techniques to sing and how to read the lyrics aloud correctly, making me understand more and want to learn English more.” Student 25 said, “I learned a lot about linking sounds in songs. I used to wonder for a long time why it is pronounced like this.” As for Student 29, she said, “I can sing more correctly with the lyrics, especially linking sounds, which I’d noticed for a long time and wondered what they were.”

Could not Follow the Speed of the Song

All of the interviewees admitted that they had problems while singing along to the song because they could not keep up with the speed of the song. This seems to be the major problem shared by the students in this group. Student 25 said, “I sang wrongly in some fast verses because I still mispronounced some words and couldn’t keep up with the beat.” Even Student 23, who always listened to and sang English songs in her free time, encountered the same problem. She said, “My problems were that I couldn’t sing along with the song because of the fast tempo and I

sang incorrectly because my tongue got twisted. But I would go back to the difficult part, listen carefully again and again, and practice." Student 29, who also liked singing, similarly said, "My common mistakes were mispronunciation of the lyrics and that I couldn't follow the song."

Informal Learning

The interviewees said that learning through songs was relaxing and did not seem as serious as a regular English class. Student 25 said, "I sometimes didn't pay attention to the songs, but my concentration would come back again when you [the researcher] sang for us or when I was asked to do the tasks." Likewise, Student 29, who had imagined this course similar to common English tutoring, said, "Learning in this class was relaxing. After all, it seemed to be too informal to take it seriously." From what the students said, it is seen that we have to be careful when creating informality in a classroom because it could create a drawback that some students might not take the informal learning seriously enough.

1.2. The Interviewees' Opinions of their Learning Outcomes

All of the interviewees in the direct-teaching group found that their pronunciation of the problematic phonemes improved to some extent after taking this course. Student 2 said, "My pronunciation improved beyond my expectations. I can pronounce English sounds more correctly such as /z/, and I feel very proud of myself." Student 9 said, "I think I was able to improve my pronunciation of almost every sound I learned, especially /v/. But I still have problems with /ʧ/ and /ʃ/ because they are very confusing." Student 8 said, "Although my pronunciation got better after taking this course, /g/ and /k/ and voiced sounds are still my problems. When I tried to pronounce voiced sounds, they usually sounded voiceless." Moreover, Student 8 and Student 9 said that they also explained how to pronounce English sounds correctly to their friends when their friends mispronounced them.

As for the English-song group, all of the interviewees likewise said that the method of using English songs and the singing practice were effective in improving their pronunciation. They were able to pronounce English sounds and words more correctly. Student 23 said, "This course got me noticing small details in

songs which enable me to imitate the singer's pronunciation more closely and have better pronunciation when speaking English." For example, she told the researcher that she had not realized that the th sound in the word breathless had to be pronounced until she noticed it from the bold words in the handout and the singer's mouth from the music video in class. Student 25 said she was very happy with the learning, and, once she learned how the words in songs are pronounced, she enjoyed singing English songs more than before because she could sing fast songs more naturally. Student 25, who had rarely listened to English songs, said, "I also listen to English songs more on the radio station that you [the researcher] recommended and let it play all day long." Student 29 added that singing practice also made her aware of how to pronounce the past tense morpheme -ed following the sounds /t/ and /d/. If she did not pronounce the syllable /-ɪd/, her singing would not fit the beat of the song. Student 29 said, "I remember to pronounce an extra syllable after past tense verbs that end with a *t* such as the word *wanted* learned in this course." Furthermore, all the interviewees agreed that practicing singing enabled them to pronounce linking sounds in songs correctly, making them sing English songs more fluently.

It can be observed from the interviews that the interviewees from both groups were very satisfied with the instructional methods they received. At the end of the courses, both the direct-teaching method and the method of using English songs increased their motivation and interest in learning English pronunciation. Many of the interviewees said that they liked to listen to other people's English pronunciation, make comments, and compare others' pronunciation with theirs.

The advantages and disadvantages of each method can also be observed from the interviews. The direct-teaching method has advantages in providing tasks which challenged them rather than bored them. Overt explanations made the students aware of similarities and differences between Thai and English consonant sounds, so they were able to explain how to pronounce English sounds correctly to other people. However, the direct-teaching method could be stressful for some students as a result of peer pressure while practicing in class. As for advantages of the other method, learning pronunciation through English songs provided the students with so-called *edutainment*, in which songs were entertaining but also educational. The method of using English songs made the students more attentive to pronunciation in songs at

both the segmental and suprasegmental levels, even though this usually applies to those features that are easy to notice. Nevertheless, the students encountered a problem, which was unable to follow the speed of the song despite having been taught to read the lyrics aloud and sing in short phrases. In fact, this is a common problem, and fixing it takes time and a lot of practice. Therefore, I gave the students some techniques such as reading the lyrics aloud line by line, humming, and singing slowly before trying it at the normal rhythm, so that they can practice singing at home. This did help for most students to overcome those difficulties while a few students still had the problem about singing certain phrases/verses that were quite fast. Another concern with using songs is that its being "edutainment" can also be a weak point because the students might not take the lessons seriously, as the interviewees commented.

2. The Researcher's Reflection

Having a dual role as the researcher and the teacher of both groups gave me opportunities to observe closely what happened at each stage of the experiment. First of all, I found that recruiting students to participate in the courses was the most difficult part of the experiment, partly because the courses, which required them to attend the class regularly twice a week for five weeks. Another reason could be that students spend most of their free time going to tutoring schools during school breaks, so their tutoring time might overlap with the time of my courses. As a result, the number of the participants was smaller than expected.

As I prepared the lesson plans for the English-song group, I found that finding songs in which the target sounds occur repetitively and are clearly pronounced was not an easy task. For example, the sound /ʤ/ was mostly found in word-initial position as in *just* but not in the other positions particularly final position. The sound /ʧ/ most commonly occurred word-finally as in *each*, but rarely found in middle position. The sound /ʒ/ was the rarest sound to be found in songs, yet it can be found in some songs with a very low frequency, occurring only once or twice. This made me realize that teachers employing this method need to know a good number of songs or have their own song database so that they can pick suitable songs to teach particular sounds.

During the first few periods of instruction, I observed that the students in the English-song group were very shy about singing out loud, and the students in the direct-teaching group were also shy when it came to pronouncing English sounds aloud. So, shyness, lack of self-confidence, and being afraid of losing face were the biggest problems I had to solve. It took some time before the students in both groups finally got used to the instructions. Nevertheless, the students in the English-song group would not sing solo; at least, they had to pair up or sing in small groups. In addition, I had to act as lead singer for them so that they would be more confident and be able to sing along with me. This situation corresponds to Tihn's (n.d.: 40) experience: "Although songs can be played by tapes or discs, etc., it is better for teachers to motivate students by singing as a model or simply by singing together with them." Therefore, based on the observations I made in my class and what Tihn noted, I suggest that teachers who would like to employ the method of using songs first sing as a model and then sing along with the students.

As for the direct-teaching group, even though audio CDs were used to play the sounds for the students to repeat, the teacher had to demonstrate the pronunciation as a role model for the students. I always had the students listen to the CDs before I pronounced the sounds again and then let them repeat after me. Then I walked to each student's desk, checked their pronunciation, and coached them individually if they were still pronouncing the sounds incorrectly. I also noticed that most of the students in this group actively participated in tasks and activities. This was different from my expectation that practices of sound discrimination and pronunciation drills might bore the students. On the contrary, the students found these tasks challenging and took them as opportunities to practice pronunciation with friends. However, there were some students who took the pronunciation practice so seriously that they appeared frustrated and upset if they were not able to pronounce a sound correctly when the other students could. In such cases, I had to help them solve their pronunciation problems by finding the cause of the problems and the remedy. Therefore, teachers who would like to use the direct-teaching method should be equipped with fundamental knowledge of phonetics and phonology of both the student's native language and the target language. With this knowledge, teachers can understand

students' pronunciation problems, explain clearly how sounds are produced, and correct problematic points in the students' pronunciation.

Finally, I have learned that, to use both instructional methods effectively, teachers should consider the time they have in one period for teaching pronunciation. With limited time, using the direct-teaching method might be more suitable because students do not have to spend much time figuring out how to pronounce problematic sounds. If time is available, using English songs is a good way to encourage students to learn pronunciation inductively. In short, I hope that this reflection has provided teachers and readers with my direct experience from conducting this study. All the problems I encountered and how I dealt with them are hoped to serve as practical ideas for implementation of the two methods.

CHAPTER V
DISCUSSION AND CONCLUSION

This chapter presents a summary of the major findings, followed by the discussion of the findings and their pedagogical implications. Finally, the chapter ends with limitations of the study and recommendations for future research.

Summary of the Study

This study investigated the use of English songs to improve the pronunciation of the ten problematic English consonant sounds that are problematic for Thai learners in comparison with the use of the direct-teaching method. It called for a quantitative quasi-experimental research approach, in which the direct-teaching group served as the control group and the English-song group was the experimental group. The participants were 30 secondary-school EFL students. They were pretested before receiving the treatments and posttested with the same pronunciation test after the courses ended. Following is the summary of the major findings with regard to the two research questions.

1. The Summary of the Major Findings

Research Question 1: Does using English songs have significant effects on the students' pronunciation of ten consonant phonemes, when compared with the use of the direct-teaching method?

The results of a paired sample *t*-test analysis indicate that the posttest mean score of students who received instruction by the use of English songs (177.51) was higher than that of their pretest (154.82) at a significance level of 0.05. Likewise, students who received the direct-teaching method obtained a posttest mean score (205.09) higher than that of their pretest (178.20) at a significance level of 0.05.

The results of an independent sample *t*-test analysis reveal that the means of the difference scores in the direct-teaching group (26.89) and in the English-song group (22.69) were not significantly different at the level of 0.05.

Thefindings confirm that both the use of English songs and the direct-teaching method have significant effects on the overall improvement of the students'

pronunciation of the ten target consonant phonemes. Also, the differences gained in each group after the treatments were not significantly different despite the fact that the mean of the difference score in the direct-teaching group was a bit higher than that of the other group. This suggests that both methods can in general, be used to improve the students' pronunciation ability.

Research Question 2: To what extent can the pronunciation of each phoneme be improved with the use of English songs and the use of the direct-teaching method?

The findings from the paired sample *t*-test analyses in Table 4.8 to Table 4.10 show that both the direct-teaching method and the use of English songs improved the students' pronunciation of five of the phonemes at a significance level of 0.05. These phonemes were /ʤ/, /θ/, /z/, /g/, and /v/. In addition to these phonemes, the statistical analyses show that the direct-teaching method improved the students' pronunciation of three more phonemes, /ʒ/, /r/, and /ʧ/, while the use of English songs improved only one additional phoneme, which was the phoneme /ð/.

The percentage showing the difference between the pretest and the posttest mean scores indicates that the direct-teaching method significantly improved the students' pronunciation of the phoneme /ʤ/ the most (19.67%) and the phoneme /ʧ/ the least (6.48%). The use of English songs significantly improved the students' pronunciation of the phoneme /g/ the most (15.30%) and the phoneme /v/ the least (7.33%). On the other hand, the use of English songs did not improve the students' pronunciation of the phoneme /r/ because the percentage shows that their posttest mean score was lower than their pretest mean score by 0.41%. With regard to the direct-teaching method, the percentage shows that the students' pronunciation of the phoneme /r/ improved significantly because the posttest mean score was higher than the pretest mean score by 10.11%. This suggests that the direct-teaching method is more effective than the use of English songs in improving the students' pronunciation of eight out of ten phonemes. In contrast, the use of English songs significantly improved the students' pronunciation of six out of ten phonemes but failed to improve the students' pronunciation of /r/.

Discussion of the Findings

The findings of the study confirm that both the use of English songs and the direct-teaching method have significant effects on students' overall improvement in pronouncing on the problematic English consonant phonemes. Further examination of the students' improvement in pronouncing each phoneme reveals two things: (1) The direct-teaching method is more effective than the use of English songs in improving student pronunciation of more phonemes. (2) The difficulty of pronouncing the ten problematic phonemes varies from one phoneme to another; some are troublesome for the students, while others are not so problematic for them. Explanations of the findings are discussed in the following sections.

1. English Songs VS Direct Teaching

The findings show that different instructional methods not only lead to various degrees of pronunciation improvement but also improve different numbers of the phonemes. This is because the two methods are based on distinct approaches.

Different Instructional Approaches

Clearly, the students in the direct-teaching group learned the pronunciation of the ten phonemes explicitly from clear explanations and sound contrast practices. The production of the problematic sounds was taught directly and phonetic symbols as well as minimal pairs were used in training the students to master the correct pronunciation of these target sounds. On the other hand, the students in the English-song group learned those sounds implicitly from their observation during song activities under the teacher's guidance using scaffolding techniquessuch as modeling, question asking, and co-participating. They noticed and imitated the singer's and the teacher's pronunciation while listening to the songs.

Since the use of English songs mainly follows the intuitive–imitative approach, the students in this group lack genuine understanding of how the target sounds are pronounced and only imitated the L2 sounds heard through the sound system of the native language (Avery and Ehrlich, 1992: xv). Thus, learning English pronunciation through English songs alone seems to rely a great deal on individual mimicry ability. Piske et al. (2001) explored studies that investigated whether some people have a

special aptitude for producing unfamiliar speech sounds. They found that the studies by Parcell and Suter (1980), Thompson (1991), and Flegeet al. (1999b) point out that mimicry ability is a significant predictor of degree of L2 foreign accent. In particular, Parcell and Suter (1980) claim that mimicry ability is an innate aptitude of great importance, second only to L1 background (Piske et al., 2001: 202). Therefore, if the students in the English-song group had high mimicry ability, their pronunciation was likely to improve. But if they had low mimicry ability, acquiring pronunciation through songs might have been difficult for them.

Because mimicry ability mirrors individual differences, this might explain why Group 2's standard deviation value on the posttest (SD = 19.94), shown in Table 4.1, was greater than its value in the pretest (SD = 11.04). That is to say, the pronunciation ability of students in the English-song group varied more after the treatment due to unequal abilities to imitate the singer's pronunciation. While some students were able to imitate the model closely, others some were unable to do so. As a result, the scores of those students whose L2 pronunciation remained unstable and fluctuated between L1 and L2 phonology had a considerable effect on the SD value of the posttest.

Quantity of the Input

The importance of amount of exposure to language input is stressed by Krashen (1982), Khamkhien (2010), and Celce-Murcia et al. (2010) as being an essential component for L2 learners to acquire a language. The input, or "linguistic data produced by other competent users of the L2" (Ortega, 2009: 59), is an important source of L2 learning. In particular, Krashen (1982: 33) claims that input that is comprehensible but a bit beyond the L2 learner's current level is necessary for L2 acquisition.

The second difference between the use of English songs and the direct-teaching method lies in the quantity of the input, i.e., the frequency of occurrence of the target phonemes. Since the direct-teaching method employs explicit instruction, it provides students with intensive exposure, a sufficient quantity of the target sounds, and direct practice of specific sounds. This differs from what happened in the English-song group. The songs used in the study were neither original nor written especially to

teach particular sounds, so the input on the target phonemes appearing in any one song may not be frequent enough to allow students to practice pronouncing those sounds, despite the repetition of the verses. As a consequence, within the 90-minute period, the students in the English-song group did not receive as much exposure to the target phonemes as the students in the other group.

Input and Attention

In addition to the students' exposure to comprehensible input, attention to specific features in the input is another variable that plays a major role in transforming input into intake (Schmidt, 1990; 1993). Ortega (2009: 63–64) explains that attention to linguistic codes can be driven from within the learners themselves or from external means such as lessons led by a teacher, questions or reactions from an interlocutor, and so on. Once the learners become aware of the gap between their current L2 performance and the target performance, they will pay attention and notice the new features of the L2 that they have not yet mastered.

In the direct-teaching group, the students were fully aware from the beginning that their learning goal was to improve their pronunciation of problematic English sounds. As a result, they realized what they needed to attend to when they were exposed to the input. In contrast, the students in the English-song group may not have realized the underlying goal, which was to learn the pronunciation of the problematic sounds through songs, because they were not directly informed of it. The students may have been more interested in learning the meaning of the songs or vocabulary or in singing the English songs correctly. Thus, although they were exposed to a certain amount of the target sounds in songs, they might have focused less on the target sounds than the students in the other group did. As Schmidt (1993) notes, people actually learn only what they notice and attend to; thus, the students in the English-song group did not learn to improve their pronunciation of the target sounds as much as the students in the direct-teaching group.

Even though neither the main goal nor overt explanations of the production of the target sounds were given to the students, their pronunciation improved significantly with the method of using English songs. This was because the students were given tasks to complete which required them to notice the pronunciation of the

target sounds in songs. These tasks and activities, for example, filling in the missing letters/words, watching music videos, and so on, were used in order to make sure that they would observe the difference between their pronunciation and the singer's and try to imitate the singer's pronunciation when singing along.

Different Kinds of Speech Processing

Lastly, in terms of speech processing (Morley, 2001), the direct-teaching method uses bottom-up processing as the core of instruction, meaning the students learn to articulate sound segments before building them up to words, phrases, and sentences. This helps students to hear the pronunciation of a phoneme more clearly as a single sound. Conversely, learning pronunciation through English songs employs top-down processing because students start by listening to the whole song, in which the words in the lyrics are sung continuously, forming connected speech, before their attention is drawn to specific sounds in the songs. As a result, pronunciation of a single phoneme is difficult to perceive due to interference from suprasegmental features such as devoicing, assimilation, deletion, and syllable reduction.

Hence using English songs may not make the target sounds as salient or easy to notice as the direct-teaching method. This corresponds to what Tình (n.d.: 35) found in his research. Tình reported that a large number of his informants, both the teachers and the students at Nguyen Gia Thieu High-School, agreed that the sounds in songs were not clear enough to learn as single sounds due to the linking of connected speech, causing more difficulty in learning sound segments through songs.

2. Age and Pronunciation Learning

The age of students may be another factor affecting L2 pronunciation outcomes. Research on the effect of age on second language acquisition has found evidence to support the belief that children seem to acquire a second language more successfully than adults, particularly when it comes to attaining native-like accents (Dulay et al., 1982: 94).

However, studies that investigating the age effect on L2 pronunciation learning report various ages for the critical period after which the ability to acquire native-like accent begins to decrease. For example, Scovel (1981) and Long (1990)

agree that L2 learners who are exposed to the native accent before age 6 and no later than age 12 can be successful in acquiring native accent (cited in Abu-Rabia and Iliyan, 2011: 161). In contrast, Bongearts et al. (1997) found counterevidence to show that, despite their late learning after the age of 12, some Dutch learners were able to acquire native-like English pronunciation, possibly because those learners were exceptionally highly motivated. Therefore, it seems that the precise age of the critical period is still controversial and other influences may also be involved. Nevertheless, it is commonly believed that "younger is better in acquiring the phonology of a L2" (Ioup, 2008: 46).

Since the average age of the students was around 17 at the time the study was conducted, the students were not considered young learners anymore (Scovel, 1981; Long, 1990). This indicates that their ability to acquire the second language naturally decreased as the age increased, and that they need greater mental effort to learn the target language by means of language rules and structural patterns.

According to Brown (2000), the students' language learning had changed and differed from young learners due to maturation of the brain, giving rise to a tendency to use analytical and intellectual skills when learning a new language. For this reason, the pronunciation of the students in the direct-teaching group improved greatly after the treatment. As for the English-song group, it can be said that the students' pronunciation improvement was the result of the activities/tasks used in class. As discussed earlier under the heading *Input and Attention*, input needs to be accompanied by attention, and the students were guided to notice the pronunciation of the target sounds through specific activities in order to compensate for the lack of explicit pronunciation instruction. Had no supportive activities been provided, less improvement might have been observed in the students' pronunciation.

The case of Wes (Schmidt, 1983) discussed in the literature review makes it apparent that, when L2 learners become mature, it becomes necessary for them to be taught linguistic forms explicitly because they lose the ability to acquire a language from input alone. Schmidt says that Wes could have advanced his linguistic competence if only he had paid more attention to grammatical structures and studied more. Likewise, the results of the present study indicate that attention to linguistic forms and learning linguistic rules should be taken into account.

3. The Students' Pronunciation Development

Further investigation of the students' pronunciation indicates that their production of the target phonemes followed the interlanguage hypothesis. The pretest results show heavy influences from Thai phonology. It was found that sound substitution errors occur the most. The problematic sounds were replaced with L1 near-equivalents, such as the three sounds /ʧ/, /ʃ/, and /ʒ/ being replaced by only one Thai sound, [tɕʰ]. The second most frequent error found was the deletion of final consonant clusters. Final consonant clusters were reduced to a single final consonant to accord with the Thai syllable structure limitations, such as *next* /nɛkst/ being pronounced as [nékˀ]. Most final consonant sounds were also unreleased, leading to pronunciation of *big* as [bikˀ] and *math* as [mæ̀tˀ]. These examples demonstrate influences from the mother tongue that were transferred to the students' L2 pronunciation before the treatments.

After the treatments, the pronunciation of students in both groups improved since the tendency to use L1 substitutions gradually decreased, especially among students in the direct-teaching group. This corresponds to the interlanguage hypothesis, which states that influences from L1 are likely to decrease as L2 learners develop their L2 knowledge to a more advanced level (Corder, 1992). However, influences from L1 were still noticeable in the students' posttest results. For instance, most of the students in both groups still pronounced the phoneme /θ/ in the word *something* as the Thai unaspirated [t]. Their pronunciation of /r/ in word-initial position was sometimes realized as [l].

Evidence from the phonetic transcription of the students' pronunciation in the pretest and the posttest reveals developmental errors in their interlanguage phonology. Some changes were observed in pronunciation of students in both groups after the treatments. The first pattern involved the students' pronunciation of the interdental fricatives /θ/ and /ð/, and the second pattern affected their pronunciation of the labio-dental fricative /v/.

To begin with, the students substituted Thai [t] or [tʰ] for the /θ/ sound, indicating transfer errors during the initial stage. Then, the [t] and [tʰ] substitutions changed to a dentalized stop [t̪], sometimes with little aspiration. The change in fronting the place of articulation, i.e., from alveolar ridge to behind the upper teeth,

suggests that these students were moving towards the correct pronunciation of the /θ/ sound, and some students, in fact, were finally able to pronounce /θ/ correctly. A similar process occurred with the students' pronunciation of the phoneme /ð/. The sound was replaced with [d] in the pretest, which changed to a dentalized stop [d̪] in the posttest. Therefore, the development of the students' interlanguage phonology for the interdental fricatives can be represented as in Figure 5.1, which illustrates the students' attempts to improve their pronunciation of the /θ/ and /ð/ sounds by fronting the place of articulation.

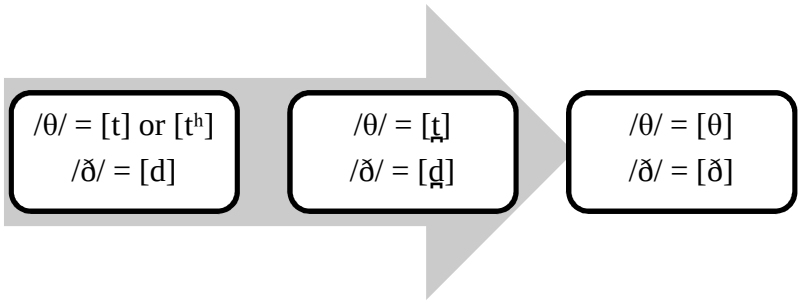

Figure 5.1. Development of the students' interlanguage phonology for the interdental fricatives

With regard to the students' interlanguage phonology for the phoneme /v/, some students, especially in the direct-teaching group, demonstrated changes in their pronunciation of /v/ by changing from /w/ substitution to a sound like a labiodentalized [w]. This means they had the upper teeth touch the lower lip and let the air come out through the narrow gap to cause little friction at the beginning of the articulation. Next, instead of pronouncing /v/ correctly, their manner of articulation followed the pronunciation of /w/, so it sounded like the glide /w/ mixed with a fricative at the beginning of the articulation. The development of the students' interlanguage phonology for the voiced labio-dental fricative is illustrated in Figure 5.2, which demonstrates the students' attempt to pronounce /v/ by adding friction to /w/.

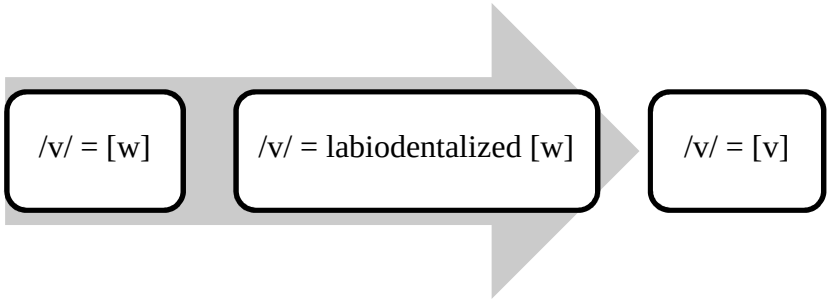

Figure 5.2 Development of the students' interlanguage phonology for the voiced labio-dental fricative

4. The Less Problematic Phonemes

The findings show that not all of the ten consonant phonemes lacking in the students' L1 caused difficulty in pronunciation. Both groups' pretest mean scores indicate that pronunciation of the phoneme /ʃ/ was not problematic for them because Group 1 students scored 74.22% and Group 2 scored 71.19% for this sound. Since the students did not have difficulty pronouncing /ʃ/ in the first place, no significant difference between the pre- and posttest mean scores of the two groups is found (the posttest mean scores increased by only 2.96% in the direct-teaching group and 3.04% in the English songs group). In addition, the students in both groups improved their pronunciation of the five phonemes, /ʤ/, /θ/, /z/, /g/, and /v/ significantly after the treatments, suggesting that the pronunciation of these phonemes was not difficult to learn. The sound that was the least problematic for them was /z/ since they received the highest posttest mean scores for this sound, 86.01% in the direct-teaching group and 79.75% in the English songs group. The phonemes that were improved to the greatest extent were /ʤ/ in the direct-teaching method group (increased by 19.69%) and /z/ in the English-song group (increased by 15.30%).

To account for this, it is possible that the students made use of positive transfer, as the Contrastive Analysis Hypothesis predicts, by relating the nearest L1 equivalents to the new sounds before learning to pronounce them correctly. The phonemes /v/, /z/, and /g/ have voiceless counterparts in the students' L1, which are /f/, /s/, and unaspirated /k/, respectively. For the phoneme /ʤ/, the manner and place of articulation for /ʤ/ are very close to those of /ʧ/ in the students' L1 except that /ʤ/ is voiced and /ʧ/ is voiceless. As a result, the students only needed to practice

vibrating their vocal cords and adjusting the way they articulated in order to improve their pronunciation.

As far as the voiceless /θ/ goes, although it does not exist in Thai, Siriwan Chayakettarin (2004), a prior head of Thai Language Clinic project sponsored by the Office of the Basic Education Commission of Thailand, found that the voiceless interdental fricative is in fact heard as a variation of Thai /s/ when pronounced by certain native Thai speakers who have problems with the correct pronunciation of /s/. She points out that the mispronunciation of the Thai voiceless alveolar fricative /s/ is of two kinds. The first involves pronouncing the Thai /s/ sound by placing the tongue between the upper and the lower teeth and letting the air flow through the narrow gap to cause friction. The second invloves pronouncing the sound by pushing the air too hard or too long so that it sounds like the English /s/. The first kind of mispronunciation of Thai /s/ can be compared to the pronunciation of the English /θ/ sound. That is why students in both groups quickly understood and were able to pronounce the /θ/ without much difficulty when the researcher told them to think of those Thai people who mispronounce Thai /s/.

Therefore, despite the lack of L2 sounds in the L1 sound inventory, the students use the nearest equivalent L1 sounds as a springboard to develop their pronunciation of the unfamiliar sounds in the L2.

5. The Problematic Phonemes

It can be observed from the research results that the voiced consonants are acquired after their voiceless counterparts, for example, /ʒ/ after /ʃ/ and /ð/ after /θ/. This follows the prediction of the markedness differential hypothesis which states that marked features are acquired after less marked ones (Major, 2008: 78). The students were also likely to acquire fricatives after stops; that is why /θ/, /ð/, and /ʒ/ are more difficult than /g/. As a consequence, the students simplified the marked sounds, substituting the less-marked ones in the posttest. The most difficult sound for the students in both groups was /ð/ because their posttest mean scores were the lower than all the other sounds (64.77% in the direct-teaching group and 49.79% in the English-song group). Also, /r/ was problematic for the students in the English-song group, as the posttest mean score dropped by 0.41% to 56.95%.

However, despite the fact that /ð/ is difficult to acquire because it, as well as its voiceless counterpart /θ/, is rarely found in the languages of the world (Avery and Ehrlich, 1992: 95), the findings indicate that the students' pronunciation of this sound improved at a significant level in the English-song group. That is, the posttest mean score for this sound increased by 9.85% from 39.92% to 49.79%. For the direct-teaching group, although the increase in their posttest mean score was not significant, it did rise by 7.07% from 57.70% to 64.77%.

With regard to of the phoneme /ʒ/, it is considered the most marked consonant phoneme in English (Crystal, 1995: 242) with a frequency of occurrence of only 0.10%, the lowest frequency of all English consonants. Moreover, in English words, this phoneme occurs only in the middle of words, such as *vision, measure,* and *leisure,* and never occurs word-initially except in some foreign loan words such as *Jean* and *gendarme* (Ladefoged, 2006). When the phoneme occurs word-finally, Crystal (1995) explains that the /ʒ/ is often replaced by /ʤ/ as a variant, as in *garage* and *rouge*. Therefore, this phoneme is rarely found in English songs, as opposed to a list of words containing this sound in exercise drills. Hence, the students in the English-song group received considerably less exposure to the /ʒ/ sound than the students in the direct-teaching group, so they could not recognize it.

Finally, the phoneme /r/ caused a lot of pronunciation problems among the students in the English songs group. In the posttest, most of them still substituted [l] for /r/ in initial and medial position and omitted this sound at the end of words more than Group 1 students. However, not pronouncing /r/ at the end of words may be acceptable in some English dialects. As noted in Defense Language Institute (1974: 25), "The dropping of /r/ in word final or in pre-consonantal position (*dear* pronounced [dɪːə] and *heart* pronounced [haːt]) can be accepted as a dialectal variant from Standard American English, and not solely as an interference problem from Thai." That is why the students' scores for this sound occurring in final position were higher than the scores for this sound in initial and medial positions.

In initial and medial positions, the English retroflex /r/ was often replaced by /l/ and the Thai tap /ɾ/. To explain the students' pronunciation of the tap [ɾ] and the lateral approximant [l] interchangeably, Thai phonology is examined. In Thai, the phoneme /ɾ/ can be pronounced in two different ways, as remarked in Tingsabadht

and Abramson (1993). They note that, in standard Thai and in formal styles, /ɾ/ is pronounced as [ɾ] or as a trill [r], but in other occasions /ɾ/ has [l] as an allophone. Thus, [ɾ] and [l] are used interchangeably in Thai so often that the students are accustomed to it and are not able to distinguish between the two. Accordingly, the students in Group 2 may continue this behavior when pronouncing the English /r/ (Kanokpermpoon, 2007: 64).

Considering the retroflex /r/ and the tap /ɾ/ from the view of the moderate version of the Contrastive Analysis Hypothesis, it can be observed that the two sounds share some phonetic features. Both sounds are continuant, anterior-coronal, and voiced (Riggle, 2008), but /r/ is a retroflex, in which the tip of the tongue is curled upward, while /ɾ/ is a flap, in which the tip of the tongue is withdrawn from behind the alveolar ridge before it touches the ridge slightly again in passing. Therefore, the pronunciation of the English /r/ is very close to the Thai /ɾ/, although they are not the same, and this small difference makes it very difficult for students to observe the two sounds' manners of articulation.

In addition, the prediction of the markedness theory also seem to account for the students' difficulty in pronouncing /r/. The retroflex /r/ is also classed as a marked sound across other languages (Hume-O' Haire and Winters, 2006: 101). Using the distinctive feature theory, they explain that this sound is marked due to its articulatory complexity as multiple articulations involved in the production, namely, lip rounding, retroflexion, and pharyngeal constriction. Accordingly, this sound is composed of three place features: labial, coronal, and pharyngeal, making it quite difficult to acquire.

Another factor responsible for the students' difficulty in pronouncing particular phonemes such as /r/ and pronouncing final sounds is fossilization (Pennington and Richards, 1986: 214). The students were used to pronouncing L2 sounds with the nearest L1 equivalent sounds or based on the L1 phonological system for most of their lives. These learning strategies, substitution and simplification, caused their psychomotor process to become habituated to deviant forms of L2 pronunciation. Pennington and Richards predict that the mixture of the two languages (or what they call "the pidginization model" in their article) that occurs as a developmental process in L2 learning will lead to two possible outcomes: either

fossilization at certain distance or attainment in approximating the L2 phonology over time. If this is the case, it is clear that 15-hour courses that the students attended were not sufficient to alter their pronunciation habits for every phoneme.

Pedagogical Implications

The findings of the present study contribute to practical implications of pronunciation instructions in a classroom context as follows.

First, the study has proved that both the method of using English songs and the direct-teaching method can be used to enhance students' learning of English pronunciation. Using English songs can effectively supplement the traditional method of pronunciation teaching. Songs also expose students to a variety of English pronunciation, such as African American accents and Spanish accents, in addition to the standard American and British accents. However, using English songs alone without overt explanations of the target sounds may not enable students to improve their pronunciation of certain phonemes significantly, while the direct-teaching method may be more successful in improving the students' pronunciation of more phonemes as well as in increasing their posttest scores. Therefore, songs should not be overestimated as the best way to teach phonetics as claimed by Leith (1979: 540).

Second, the study has established two levels of problematic English consonant sounds: the more problematic ones and the less problematic ones. The more problematic sounds consist of /ð/, /ʒ/, /r/, and /ɰ/, while the less problematic ones are /ʤ/, /θ/, /z/, /g/, /v/, and /ʃ/. Taking these findings into account, teachers should be aware of learners' pronunciation problems so that teachers can understand the learners' areas of difficulty and design appropriate lessons to meet the learners' needs.

Third, the study has identified a number of tasks and activities centering on pronunciation (see Chapter 3) which led to significant improvement in student pronunciation. Teachers can employ these tasks and activities in their lessons as either supplementary or main tasks according to their objectives.

Fourth, the interviews show that all of the interviewees from both groups were satisfied with the instructional methods they received. This suggests that the direct-teaching method does not always bore students; on the contrary, it can attract the students' attention and motivate them to learn more in the future. As for the English-

song group, the interviewees felt that listening to and singing English songs is another means to enhance their English pronunciation skills as well as motivate them to learn more.

Finally, the qualitative data raised some advantages and concerns about each method. For example, using the direct-teaching method can lead to pressure and stress in class, whereas using English songs seems to be very informal, so the students sometimes failed to attend to the lesson. In addition, it also depicts real events occurring during the experiment together with suggestions for teachers who would like to adopt the two methods in their teaching.

Limitations of the Study

Although the objective of the study has been fulfilled, some limitations still need to be mentioned. First, the experiment and data collection were conducted over a short period of time, 5 weeks with only 10 periods (15 hours total) for each course during the summer-school break. Clearer differences between the pretest and posttest scores of the two groups might have been observed or different results might have been yielded if more time had been devoted to the experimental stage.

Second, the number of the students participating in the study was rather small; there were a mere 15 students in each group. As a consequence, the findings may not be generalizable to all cases. Nevertheless, it should be noted that using a small group of students, as in this study, has some advantages. In small groups, every student can be provided with sufficient opportunities for learning, specific attention from the teacher, and a non-threatening atmosphere.

Lastly, controlling the occurrence of sounds in songs was more difficult than preparing a list of words for the direct-teaching group. In songs, some of the target sounds, such as /ʒ/, /ʧ/, and /ʤ/, do not occur in every syllable position. Moreover, the frequency of occurrence of the ten problematic sounds is unequal, which means some sounds were found more frequently than others. This was a limitation on the use of songs.

Recommendations for Future Research

Further research concerning second-language learning through songs is encouraged to explore whether combining the direct-teaching method with the use of songs will lead to better results than using each of the methods alone since Jones (2002: 185) similarly suggests that pronunciation should be taught by explicit teaching as well as free practice. It is hoped that when the strengths of each method are blended, L2 learners will be able to improve both accuracy and fluency in their pronunciation. Future research could also investigate other areas of L2 phonology such as vowels and stress because rhymes and rhythm are more noticeable in songs. Moreover, whether or not the knowledge obtained through songs is retained longer than that gained via the direct-teaching method is another question requiring an answer.

Regarding the research methodology, it is recommended that longitudinal studies on the effects of the two methods be carried out. This would not only give learners more time for practice but also allow observation of the learners' developmental progress during the course. In addition, a wider gap between learners taking the pretest and the posttest can help to avoid the practice effect, which does not reflect genuine ability or improvement of the learners (Wisconsin Personnel Partners, 2005).

Conclusion

The present study has found that both the use of English songs and the use of the direct-teaching method can, in general, improve student pronunciation of the ten problematic English phonemes at a significance level of 0.05. The difference between the pre- and posttest mean scores of the direct-teaching group was, however, a bit higher than the other group's. Also, improvement of student pronunciation of more phonemes was observed in the direct-teaching group. The results show that, although learning L2 pronunciation through songs alone can be effective, it was not more effective than the direct-teaching method in improving the pronunciation of certain phonemes. There are a number of related factors that need to be taken into account when considering how L2 pronunciation should be taught, for example, students' age, the markedness of L2 sounds, and the amount of exposure to the target phonemes.

The additional findings obtained from the interviews mirror the students' attitudes towards the methods they received. The researcher's reflections provide implicational guidelines and concerns of using each method for teachers who would like to adopt the two methods to develop their teaching.

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APPENDICES

APPENDIX A: SAMPLES OF THE LESSON PLANS

Lesson Plan for Period 2/10

Class: Direct teaching group (the control group) **Topic:** /f/, /v/
Time: 13:00 – 14:30 (90 minutes) **Date:** Friday April 8, 2011

Terminal Objective:

The students will be able to distinguish the sounds /f/ and /v/ and will be able to pronounce the two sounds.

Enabling Objectives:

1. The students can identify how /f/ and /v/ are produced regarding places of articulation, manner of articulation, and voicing quality.
2. The students can tell the difference between /f/ and /v/.
3. The students can pronounce /f/ and /v/ correctly in any positions, i.e., in word-initial, medial, and final positions.

Materials:

1. Handout from *English Pronunciation in Use* (Hancock, 2003: 24-25, 156).
2. Audio CD
3. 8 Pairs of paper-cup telephones

Evaluation:

The students complete the exercises *Sound Pair* 37 and *Sound Pair 38* on page 156 and read the given minimal pairs correctly at least 60% or higher.

Procedures:

1. Review (5 min)

1.1. The teacher briefly reviews basic knowledge about English pronunciation taught in the previous period including speech organs,

places of articulation, manners of articulation, voicing quality, and discrepancy between letters and sounds.

2. *Introduction (5 min)*
   2.1. The teacher writes 6 words with numbers on the board: *1) V, 2) we, 3) fee, 4) vine, 5) wine,* and *6) fine*.
   2.2. The teacher tells the students to listen to the teacher's reading and say the number of the word that has just been read. For example, the teacher says [veɪn] and the students say "number …" according to what they just heard. After that, the teacher gives the correct answer by pointing at the word *vain*. If the students answered correctly, they get one point for themselves.
   2.3. The process continues until all the words are read. After that, the teacher asks the students to collect their points and asks who has the highest points.
   2.4. The teacher asks which sounds confuse the students the most before leading them to today's lesson on the sounds /f/ and /v/.

3. *Teaching (70 min)*
   3.1. The teacher distributes the handouts and has the students listen to the CD track A35a, A35b, A36a pronouncing /f/ and /v/.
   3.2. The teacher explains how the sounds are produced and follows the steps in the handout (see the pictures of all the materials used at the end of the lesson plan).
   3.3. The teacher gives the students a few minutes to practice /f/ and /v/ and monitors them as well as training them individually.
   3.4. The teacher asks the students to pair up and distributes a paper-cup telephone to each pair for practicing voicing contrast. If the students pronounce /v/ correctly, they should feel the vibration of the string and the cups but they should not feel vibration if they are pronouncing /f/ because it is a voiceless sound.
   3.5. The students listen to the CD and practice pronouncing the words in section B and C on page 24 together as a whole class and in pairs so

that they can help each other check the difference between /f/ and /v/. Meanwhile, the teacher also monitors and gives them some help when necessary.

3.6. The teacher talks about spelling and pronunciation in section D on page 24.

3.7. The teacher follows the instructions in the handout by having the students do the exercises on page 25.

3.8. The teacher has the students turn to page 156 to evaluate themselves by doing listening tests in Sound pair 37: /f/ and /v/ and Sound pair 38: /v/ and /w/.

3.9. The teacher gives the students the correct answers and asks those who answered correctly 60% or higher to raise their hands in order to observe the students' ability to distinguish the 3 sounds /f/, /v/, /w/.

4. Wrap up (10 min)

4.1. The teacher asks the students to explain how the sounds /f/, /v/, /w/ are pronounced and what makes them different from one another.

4.2. The teacher has the students to read the 6 words used in the introduction again, i.e., *V, we, fee, vine, wine,* and *fine*.

4.3. The teacher repeat step 2.1-2.3 again to check if the students gain higher points after learning the three sounds or not.

……..

Paper-cup telephones

Using paper-cup telephones

Lesson Plan for Period 2/10

Class: English songs group (the experimental group)

Time: 15:30 – 17:00 (90 minutes) **Date:** Friday April 8, 2011

Terminal Objective:

The students will be able to read the lyrics and sing the songs *My Love* and *Valentine.*

Enabling Objectives:

1. The students fill in the missing letters and correct the underlined words in the lyrics after listening to the songs.
2. The students notice the pronunciation of the bold words as well as the other words and pronounce them correctly by imitating the singers' pronunciation.
3. The students read the lyrics aloud in appropriate thought-groups.

Materials:

1. Music videos of the songs *My Love* and *Valentine* (retrieved from www.youtube.com)
2. Audio files of the songs
3. Sheets of the songs' lyrics (retrieved from www.siamzone.com)

Evaluation:

The students complete all of the tasks on the lyrics, read aloud the lyrics correctly, and can sing the songs by themselves.

Procedures:

1. Review (10 min)

1.1. The teacher reviews the song *So Sick* learned in the previous period by playing the music video and singing along with the students.

1.2. The teacher summarizes techniques used in singing English songs such as imitating the singer's pronunciation, noticing rhymes, linking the final sound of the word to the beginning sound of the following words, humming before singing, and so on.

2. *Introduction (5 min)*
   2.1. The teacher plays the hook parts of the songs *My Love* and *Valentine* then has the students guess the song titles.
   2.2. The teacher lets the students vote the song they want to learn first.

3. *Teaching (70 min)*
   3.1. The teacher distributes the handouts of both songs' lyrics to the students and gives them a few minutes to read the lyrics and circle the words they do not know the meaning or how to pronounce.
   3.2. For the song *My Love*, the students have to guess the missing letters and the pronunciation of the bold words before listening to the song. For example, *"__eaching for the love that seems so far"* and *"So I say a little **prayer**."* As for the other song, *Valentine*, the students also have to guess how the bold words are pronounced before listening to the song such as "*Even if romance ran out of **rhyme***." In addition, after listening, they have to correct 4 mistakes in the lyrics signaled by the underlined words. For instance, "*I will keep you my heart until the end of time*."
   3.3. The teacher tells the students to listen to the song carefully and pay attention to the target words in order to check their predictions.
   3.4. The teacher plays the song once then asks the students if their predictions were correct or not.
   3.5. The teacher plays the music video of the song and pauses after the target word has just been sung. The students are told to look at the singer's mouth and try to imitate the articulation. Then the teacher pronounces the word and has them repeat afterwards. The teacher does like this with all of the target words.

3.6. The teacher reads the lyrics aloud for the students verse by verse and has them repeat each verse after the teacher in order to teach them to read the words correctly. After that, the teacher explains the meaning of the song.

3.7. The teacher tells the students to get in pairs and practice reading the lyrics aloud as a prose but with appropriate thought-groups according to the singing. Meanwhile, the teacher monitors the students and helps them if necessary.

3.8. The teacher plays the music video with the lyrics and sings the song together with the students before having them sing by themselves as a whole class with the karaoke version.

3.9. Repeat step 3.2 - 3.8 with the next song.

4. Wrap up (5 min)

4.1. The teacher asks the students to pronounce the bold words, the words with the missing letters, and the underlined words again. Then the teacher asks the students what they have learned from those tasks.

4.2. The teacher concludes that these tasks demonstrate the fact that sometimes spelling is different from reading aloud as observed in the words *rhyme*, *prayer*, and *promise*. Moreover, they can apply what they learned from these tasks to use in real life when practice listening to English songs and singing by themselves at home, particularly the task that requires them to notice and correct the mistakes in the lyrics because lyrics available on the Internet are not always accurate.

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Content Validation of the Lesson Plans

Guidelines for Evaluation

Please rate the degree to which the items are met according to your opinion by checking ✓ in the categories provided (1 = appropriate; 0 = not sure; -1 = not appropriate). In addition, please give further comments or recommendation, if any.

Items	***1***	***0***	***-1***
1. Terminal objective: 1.1. Realistic goal			
2. Enabling objectives: 2.1. Relevant to the terminal objective 2.2. Demonstrate sub-skills in order to accomplish the terminal objective			
3. Materials: 3.1. Promote learning 3.2. Authentic 3.3. Interesting			
4. Evaluation: 4.1. Assess the students' knowledge and performance according to the enabling objectives and the terminal objective			
5. Procedures: 5.1. Activate the students' previous knowledge in order to make connection with the new knowledge 5.2. Appropriate time spent in each procedure 5.3. Appropriate sequencing			
6. Activities/tasks: 6.1. Encourage the students to participate in the lesson 6.2. Contain various types of activities/tasks			

Items	*1*	*0*	*-1*
6.3. Promote co-operative learning and friendly atmosphere in the classroom 6.4. Appropriate difficulty, not too difficult and not too easy			
7. Assistance from the teacher: 7.1. Provide appropriate amount of assistance when needed			

Additional comments/Recommendation

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APPENDIX B: PRE- AND POSTTEST

Pretest and Posttest on Problematic English Consonant Sounds

Part 1: Pronounce the following words

1.	thigh	thought	something	healthy	faith	math
2.	they	the	mother	whether	bathe	breathe
3.	treasure	decision	pleasure	confusion	beige	mirage
4.	giant	just	rejoice	religion	change	age
5.	show	sure	special	situation	trash	wish
6.	choose	child	fortune	future	each	much
7.	girl	god	struggle	stronger	drag	big
8.	zone	zero	easy	amazing	eyes	realize
9.	road	room	serious	borrow	heart	wear
10.	valentine	very	never	everyday	love	leave

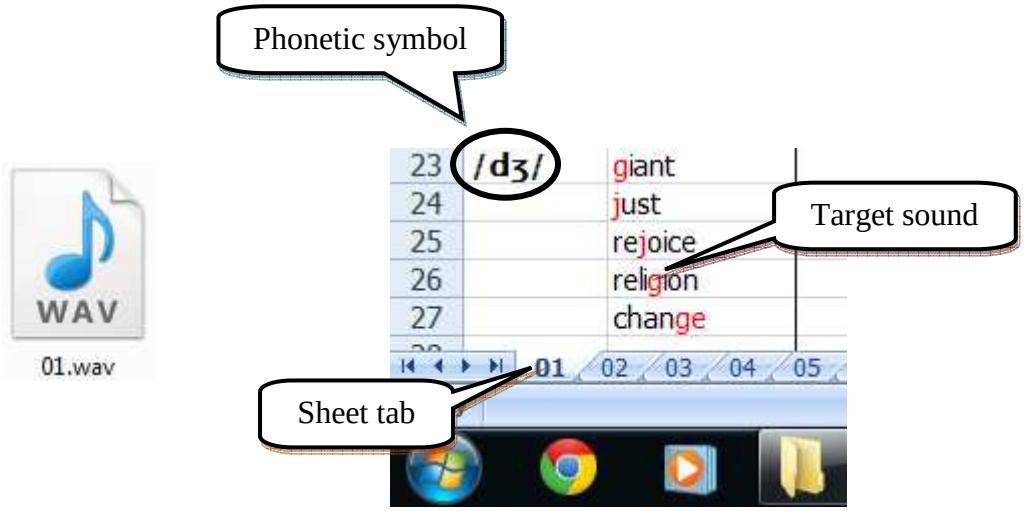
Part 2: Pronounce the following 10 sentences

1. I think nothing will be on sale next month.
2. My father likes to sunbathe in the hot sun.
3. A mirage is an illusion which usually occurs in hot places.
4. Jim wrote two pages about climate change.
5. She is washing a dish.
6. The police spent such a long time searching for the missing child.
7. Peggy is going to buy a new bag.
8. The monkeys puzzle the zookeeper.
9. I’m running around the park.
10. On Valentine’s Day, people give roses to their lovers.

APPENDIX C: JUDGES' EVALUATION FORM

How to Use This Evaluation Form

1. Open the sound file that has the same name as the excel sheet, e.g. open the sound file "01.wav" and judge the pronunciation on the sheet tab titled "01" at the bottom of the screen. In the excel file, there are 60 tabs ranging from "01" to "60".



2. While listening, only the target consonant sounds, represented by red letters, are the focus of this study in spite of mispronunciation.
3. Please rate the degree to which the pronunciation of each sound is met according to your judgment by checking ✓ in the categories provided: *Good* = native-like or near native-like, *Acceptable* = understandable, *Not clear* = difficult to perceive, *Fail* = incorrect.
4. Finally, please give your overall impression of each student's pronunciation of English pronunciation, e.g. "her overall pronunciation is acceptable but some sounds such as ... are considered problematic for her".

Part 1: Pronouncing the lists of words. Check ✓ in the categories provided

PART 1		PRONUNCIATION OF **THE TARGET SOUNDS**			
		Good (3)	*Acceptable (2)*	*Not clear (1)*	*Fail (0)*
/θ/	*th*igh *th*ought some*th*ing heal*th*y fai*th* ma*th*				
/ð/	*th*ey *th*e mo*th*er whe*th*er ba*th*e brea*th*e				
/ʒ/	plea*s*ure confu*s*ion trea*s*ure deci*s*ion bei*ge* mira*ge*				
/ʤ/	*g*iant *j*ust re*j*oice reli*g*ion chan*ge* a*ge*				
/ʃ/	*sh*ow *s*ure spe*c*ial situa*t*ion tra*sh* wi*sh*				
/ʧ/	*ch*oose *ch*ild for*t*une fu*t*ure ea*ch* mu*ch*				
/g/	*g*irl *g*od stru*gg*le stron*g*er dra*g* bi*g*				

PART 1		PRONUNCIATION OF **THE TARGET SOUNDS**			
		Good (3)	*Acceptable (2)*	*Not clear (1)*	*Fail (0)*
/z/	<u>z</u>one <u>z</u>ero ea<u>s</u>y ama<u>z</u>ing eye<u>s</u> reali<u>ze</u>				
/r/	<u>r</u>oad <u>r</u>oom se<u>r</u>ious bo<u>rr</u>ow hea<u>r</u>t wea<u>r</u>				
/v/	<u>v</u>alentine <u>v</u>ery ne<u>v</u>er e<u>v</u>eryday lo<u>ve</u> lea<u>ve</u>				
Total					

<u>Part 2:</u> Pronouncing the sentences. Please pay attention to the target sounds only.

PART 2	PERFORMANCE ON **THE TARGET SOUNDS**				
	target sounds	*Good (3)*	*Acceptable (2)*	*Not clear (1)*	*Fail (0)*
1. I think nothing will be on sale next month.	/θ/ <u>*th*</u>ink no<u>*th*</u>ing mon<u>*th*</u>				
2. My father likes to sunbathe in the hot sun.	/ð/ fa<u>*th*</u>er sunba<u>*the*</u> <u>*th*</u>e				
3. Mirage is an illusion which usually occurs in hot places.	/ʒ/ mira<u>*ge*</u> illu<u>s</u>ion u<u>s</u>ually				

PART 2	PERFORMANCE ON **THE TARGET SOUNDS**				
	target sounds	*Good (3)*	*Acceptable (2)*	*Not clear (1)*	*Fail (0)*
4. Jim wrote two pages about climate change.	/ʤ/ *J*im pa*ge*s chan*ge*				
5. She is washing a dish.	/ʃ/ *sh*e wa*sh*ing di*sh*				
6. The police spent such a long time searching for the missing child.	/ʧ/ su*ch* sear*ch*ing *ch*ild				
7. Peggy is going to buy a new bag.	/g/ Pe*gg*y *g*oing ba*g*				
8. The monkeys puzzle the zookeeper.	/z/ monkey*s* pu*zz*le *z*ookeeper				
9. I'm running around the park.	/r/ *r*unning a*r*ound pa*r*k				
10. On Valentine's day, people give roses to their lovers.	/v/ *V*alentine gi*ve* lo*v*ers				
Total					

Content Validation

of the pre- and posttestand the Judges' Evaluation Form

Guidelines for evaluation

Please rate the degree to which the items are met according to your opinion by checking ✓ in the categories provided (1 = appropriate; 0 = not sure; -1 = not appropriate). In addition, please give further comments or recommendation, if any.

Items	***1***	***0***	***-1***
1. Pre-and-Post Test Part 1: 1.1. Clear instruction 1.1. Degree of difficulty in reading the selected words 1.2. Appropriate occurrence of the target sounds			
2. Pre-and-Post Test Part 2: 2.1. Clear instruction 2.2. Degree of difficulty in reading the sentences 2.3. Appropriate occurrence of the target sounds			
3. The Judges' Evaluation Form: 3.1. Clear guideline for the judges to use the evaluation form 3.2. Appropriate scoring system			

Additional comments/Recommendation

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APPENDIX D: THE STUDENTS' PRE- AND POSTTEST RAW SCORES

1. The Direct-Teaching Group

1.1 Grand Total Pretest Scores

Student	***Full score for each phoneme = 27***										***Full score = 270***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S1	18.67	16.33	13.33	12.67	18.00	19.33	21.67	20.33	20.67	21.00	***182.00***
S2	14.00	12.00	12.67	14.00	20.33	14.33	20.00	18.67	20.67	21.67	***168.33***
S3	11.67	10.67	11.33	15.67	20.33	16.67	15.33	20.33	18.00	19.33	***159.33***
S4	13.67	15.33	14.33	15.67	21.67	17.33	23.67	21.33	18.33	17.33	***178.67***
S5	13.33	14.67	10.33	13.33	16.00	14.00	18.00	17.33	13.00	20.67	***150.67***
S6	14.00	18.67	11.67	23.00	17.33	24.00	23.00	24.00	24.00	24.00	***203.67***
S7	21.00	18.00	20.33	21.67	24.00	16.67	20.00	22.00	23.33	22.00	***209.00***
S8	12.33	15.00	10.67	14.33	21.33	15.00	14.67	21.00	13.67	16.67	***154.67***
S9	20.00	19.00	15.00	14.33	18.00	15.33	21.00	24.00	22.00	21.67	***190.33***
S10	9.67	16.67	15.00	20.00	23.33	20.67	24.00	23.33	22.00	23.33	***198.00***
S11	19.33	17.67	15.00	16.00	21.33	20.00	22.33	20.00	13.67	23.00	***188.33***
S12	18.67	19.33	10.33	12.33	18.67	15.67	22.33	23.00	19.33	22.33	***182.00***
S13	16.67	15.33	19.00	20.33	21.67	20.33	21.67	19.33	20.33	17.67	***192.33***
S14	14.33	14.33	16.67	15.67	20.33	17.67	18.33	19.33	18.67	17.67	***173.00***
S15	11.33	10.67	12.00	11.33	18.33	15.00	14.67	15.00	17.00	17.33	***142.67***
Means	*15.24 (56.46%)*	*15.58 (57.70%)*	*13.84 (51.28%)*	*16.02 (59.34%)*	*20.04 (74.24%)*	*17.47 (64.69%)*	*20.04 (74.24%)*	*20.60 (76.30%)*	*18.98 (70.29%)*	*20.38 (75.47%)*	***178.20 (66.00%)***
SD	*3.54*	*2.82*	*3.07*	*3.58*	*2.27*	*2.86*	*3.18*	*2.51*	*3.46*	*2.49*	***19.86***

1.2 Pretest Scores of Part 1: Pronouncing the Lists of Words

Student	***Full score for each phoneme = 18***										***Full score = 180***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S1	12.00	11.00	9.00	8.00	11.67	12.67	13.67	13.67	13.67	14.00	***119.33***
S2	7.33	7.00	8.33	9.33	12.67	9.67	12.33	12.33	12.67	13.67	***105.33***
S3	5.00	6.33	6.00	10.67	12.67	12.00	9.33	12.67	11.67	11.33	***97.67***
S4	6.33	9.33	9.33	11.00	13.67	11.67	15.67	15.00	12.33	11.67	***116.00***
S5	8.00	9.67	5.67	10.00	12.00	9.33	10.67	10.67	6.67	13.00	***95.67***
S6	6.33	13.00	6.00	15.00	12.00	16.00	16.00	16.00	16.00	16.00	***132.33***
S7	13.00	11.33	13.33	14.00	16.00	8.67	12.00	14.33	15.33	15.00	***133.00***
S8	7.67	9.00	8.33	9.33	13.33	8.67	9.33	15.00	7.33	9.67	***97.67***
S9	13.33	13.00	10.00	9.00	12.67	9.33	13.00	16.00	14.00	14.00	***124.33***
S10	3.33	10.67	9.00	12.67	15.33	12.67	16.00	16.00	14.67	15.33	***125.67***
S11	13.33	11.67	8.33	11.33	13.67	15.33	14.33	15.00	7.67	15.67	***126.33***
S12	11.67	11.67	6.67	6.67	12.67	10.67	15.33	15.33	13.33	15.67	***119.67***
S13	9.67	9.67	12.33	14.00	14.00	13.00	15.33	12.67	12.33	12.00	***125.00***
S14	7.67	10.33	10.33	11.00	14.67	12.67	11.33	12.67	13.00	11.33	***115.00***
S15	6.67	6.33	7.33	8.00	12.67	11.00	9.33	11.00	11.67	11.67	***95.67***
Means	*8.76 (48.64%)*	*10.00 (55.56%)*	*8.67 (48.15%)*	*10.67 (59.26%)*	*13.31 (73.95%)*	*11.56 (64.20%)*	*12.91 (71.73%)*	*13.89 (77.16%)*	*12.16 (67.53%)*	*13.33 (74.07%)*	***115.24 (64.02%)***
SD	*3.21*	*2.15*	*2.23*	*2.43*	*1.26*	*2.26*	*2.51*	*1.79*	*2.84*	*1.98*	***13.46***

1.3 Pretest Scores of Part 2: Pronouncing the Sentences

Student	***Full score for each phoneme = 18***										***Full score = 180***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S1	6.67	5.33	4.33	4.67	6.33	6.67	8.00	6.67	7.00	7.00	***82.67***
S2	6.67	5.00	4.33	4.67	7.67	4.67	7.67	6.33	8.00	8.00	***63.00***
S3	6.67	4.33	5.33	5.00	7.67	4.67	6.00	7.67	6.33	8.00	***61.67***
S4	7.33	6.00	5.00	4.67	8.00	5.67	8.00	6.33	6.00	5.67	***62.67***
S5	5.33	5.00	4.67	3.33	4.00	4.67	7.33	6.67	6.33	7.67	***55.00***
S6	7.67	5.67	5.67	8.00	5.33	8.00	7.00	8.00	8.00	8.00	***71.33***
S7	8.00	6.67	7.00	7.67	8.00	8.00	8.00	7.67	8.00	7.00	***76.00***
S8	4.67	6.00	2.33	5.00	8.00	6.33	5.33	6.00	6.33	7.00	***57.00***
S9	6.67	6.00	5.00	5.33	5.33	6.00	8.00	8.00	8.00	7.67	***66.00***
S10	6.33	6.00	6.00	7.33	8.00	8.00	8.00	7.33	7.33	8.00	***72.33***
S11	6.00	6.00	6.67	4.67	7.67	4.67	8.00	5.00	6.00	7.33	***62.00***
S12	7.00	7.67	3.67	5.67	6.00	5.00	7.00	7.67	6.00	6.67	***62.33***
S13	7.00	5.67	6.67	6.33	7.67	7.33	6.33	6.67	8.00	5.67	***67.33***
S14	6.67	4.00	6.33	4.67	5.67	5.00	7.00	6.67	5.67	6.33	***58.00***
S15	4.67	4.33	4.67	3.33	5.67	4.00	5.33	4.00	5.33	5.67	***47.00***
Means	*6.49* *(72.10%)*	*5.58* *(61.98%)*	*5.18* *(57.53%)*	*5.36* *(59.51%)*	*6.73* *(74.81%)*	*5.91* *(65.68%)*	*7.13* *(79.26%)*	*6.71* *(74.57%)*	*6.82* *(75.80%)*	*7.04* *(78.27%)*	***64.29*** ***(71.43%)***
SD	*0.97*	*0.96*	*1.27*	*1.42*	*1.32*	*1.40*	*0.97*	*1.12*	*0.98*	*0.88*	***8.86***

1.4 Grand Total Posttest Scores

Student	***Full score for each phoneme = 27***										***Full score = 270***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S1	21.67	19.00	19.33	22.33	24.00	22.33	24.00	24.00	22.67	24.00	***223.33***
S2	13.00	17.67	16.00	17.67	22.33	15.00	21.67	22.67	22.00	18.67	***186.67***
S3	18.67	17.00	15.33	20.33	24.67	20.67	18.33	23.33	23.33	24.00	***205.67***
S4	16.33	18.33	14.33	17.67	21.33	19.33	23.33	19.67	17.00	15.33	***182.67***
S5	9.67	7.33	13.33	19.67	16.67	16.00	20.00	23.00	16.00	23.33	***165.00***
S6	22.33	22.33	20.00	24.00	18.00	23.33	24.00	24.33	24.00	24.00	***226.33***
S7	16.67	18.67	22.67	23.67	21.67	22.33	23.00	23.33	24.00	24.00	***220.00***
S8	19.67	15.00	22.33	23.33	23.33	13.67	22.67	24.67	24.00	24.00	***212.67***
S9	21.33	17.67	15.33	21.67	21.33	20.00	25.00	24.00	24.33	24.00	***214.67***
S10	21.00	18.67	19.33	24.33	15.00	24.00	24.00	24.00	23.33	24.00	***217.67***
S11	18.00	16.00	21.00	20.33	22.33	21.00	21.00	21.00	19.33	21.33	***201.33***
S12	20.33	19.00	20.67	21.33	23.00	16.00	21.67	23.00	22.67	24.00	***211.67***
S13	20.33	17.00	21.00	24.00	18.00	22.33	24.00	24.00	23.33	20.33	***214.33***
S14	23.33	20.67	16.67	20.67	17.67	12.67	22.67	24.00	22.00	19.67	***200.00***
S15	15.67	18.00	16.33	19.00	23.33	19.67	19.00	23.33	17.67	22.33	***194.33***
Means	*18.53 (68.64%)*	*17.49 (64.77%)*	*18.24 (67.57%)*	*21.33 (79.01%)*	*20.84 (77.20%)*	*19.22 (71.19%)*	*22.29 (82.55%)*	*23.22 (86.01%)*	*21.71 (80.41%)*	*22.20 (82.22%)*	***205.09 (75.96%)***
SD	*3.73*	*3.32*	*3.05*	*2.26*	*2.99*	*3.66*	*1.98*	*1.32*	*2.79*	*2.64*	***17.00***

1.5 Posttest Scores of Part 1: Pronouncing the Lists of Words

Student	***Full score for each phoneme = 18***										***Full score = 180***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S1	15.67	14.33	12.00	16.00	16.00	14.67	16.00	16.00	15.33	16.00	***152.00***
S2	10.00	14.00	11.33	10.67	16.00	10.67	13.67	15.00	15.00	11.00	***127.33***
S3	13.00	11.33	10.00	13.00	16.67	12.33	10.33	16.00	16.00	16.00	***134.67***
S4	10.33	13.00	10.00	12.00	13.33	12.00	16.00	12.33	12.33	10.67	***122.00***
S5	5.67	6.33	8.00	12.00	11.33	10.67	12.00	15.67	10.67	15.67	***108.00***
S6	14.33	15.00	13.33	16.00	12.00	15.00	15.67	16.33	16.00	16.00	***149.67***
S7	8.67	13.33	14.67	15.67	13.67	15.33	15.00	15.33	16.00	16.00	***143.67***
S8	13.67	10.33	14.67	15.67	15.00	6.67	15.00	16.67	16.00	16.00	***139.67***
S9	14.00	11.67	9.33	14.33	14.33	12.67	16.67	16.00	16.00	16.00	***141.00***
S10	14.00	12.67	14.00	16.33	8.67	16.00	16.00	16.00	15.67	16.00	***145.33***
S11	12.00	11.00	13.00	14.33	14.33	15.33	13.33	13.00	13.33	14.00	***133.67***
S12	13.67	12.67	14.67	13.67	15.00	10.00	14.67	15.00	16.00	16.00	***141.33***
S13	13.00	12.00	14.33	16.00	12.00	14.67	16.00	16.00	15.67	14.00	***143.67***
S14	15.67	14.67	11.00	15.00	13.33	9.33	15.67	16.00	16.00	13.67	***140.33***
S15	10.67	12.00	11.67	13.67	15.33	13.33	13.67	16.00	10.33	15.00	***131.67***
Means	*12.29 (68.27%)*	*12.29 (68.27%)*	*12.13 (67.41%)*	*14.29 (79.38%)*	*13.80 (76.67%)*	*12.58 (69.88%)*	*14.64 (81.36%)*	*15.42 (85.68%)*	*14.69 (81.60%)*	*14.80 (82.22%)*	***136.93 (76.07%)***
SD	*2.76*	*2.15*	*2.17*	*1.76*	*2.12*	*2.70*	*1.75*	*1.21*	*2.02*	*1.82*	***11.34***

1.6 Posttest Scores of Part 2: Pronouncing the Sentences

Student	***Full score for each phoneme = 9***										***Full score = 90***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S1	6.00	4.67	7.33	6.33	8.00	7.67	8.00	8.00	7.33	8.00	***80.33***
S2	3.00	3.67	4.67	7.00	6.33	4.33	8.00	7.67	7.00	7.67	***59.33***
S3	5.67	5.67	5.33	7.33	8.00	8.33	8.00	7.33	7.33	8.00	***71.00***
S4	6.00	5.33	4.33	5.67	8.00	7.33	7.33	7.33	4.67	4.67	***60.67***
S5	4.00	1.00	5.33	7.67	5.33	5.33	8.00	7.33	5.33	7.67	***57.00***
S6	8.00	7.33	6.67	8.00	6.00	8.33	8.33	8.00	8.00	8.00	***76.67***
S7	8.00	5.33	8.00	8.00	8.00	7.00	8.00	8.00	8.00	8.00	***76.33***
S8	6.00	4.67	7.67	7.67	8.33	7.00	7.67	8.00	8.00	8.00	***73.00***
S9	7.33	6.00	6.00	7.33	7.00	7.33	8.33	8.00	8.33	8.00	***73.67***
S10	7.00	6.00	5.33	8.00	6.33	8.00	8.00	8.00	7.67	8.00	***72.33***
S11	6.00	5.00	8.00	6.00	8.00	5.67	7.67	8.00	6.00	7.33	***67.67***
S12	6.67	6.33	6.00	7.67	8.00	6.00	7.00	8.00	6.67	8.00	***70.33***
S13	7.33	5.00	6.67	8.00	6.00	7.67	8.00	8.00	7.67	6.33	***70.67***
S14	7.67	6.00	5.67	5.67	4.33	3.33	7.00	8.00	6.00	6.00	***59.67***
S15	5.00	6.00	4.67	5.33	8.00	6.33	5.33	7.33	7.33	7.33	***62.67***
Means	*6.24 (69.38%)*	*5.20 (57.78%)*	*6.11 (67.90%)*	*7.04 (78.27%)*	*7.04 (78.27%)*	*6.64 (73.83%)*	*7.64 (84.94%)*	*7.80 (86.67%)*	*7.02 (78.02%)*	*7.40 (82.22%)*	***68.76 (76.40%)***
SD	*1.44*	*1.45*	*1.23*	*0.97*	*1.24*	*1.47*	*0.76*	*0.30*	*1.08*	*0.99*	***7.24***

2. The English-Song Group

2.1 Grand Total Pretest Scores

Student ID	***Full score for each phoneme = 27***										***Full score = 270***
	/θ/	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S16	13.00	8.33	13.33	18.00	17.67	17.67	20.00	17.00	12.33	19.00	***156.33***
S17	10.67	12.00	13.00	16.33	21.33	17.67	20.33	19.67	13.00	19.67	***163.67***
S18	17.67	14.67	15.33	18.67	20.33	19.00	21.33	17.00	17.00	15.33	***176.33***
S19	9.67	10.33	13.00	13.00	18.67	7.67	18.33	16.67	13.33	14.33	***135.00***
S20	9.67	8.33	15.67	14.67	19.67	17.00	15.00	17.00	15.67	19.00	***151.67***
S21	13.00	9.33	15.00	13.00	20.67	17.00	21.00	16.00	15.67	18.33	***159.00***
S22	12.33	10.33	16.33	17.00	17.33	12.33	17.33	16.00	18.00	15.67	***152.67***
S23	14.33	11.67	14.67	15.67	21.33	14.00	19.67	21.33	20.00	16.67	***169.33***
S24	13.00	13.67	13.33	13.00	16.67	18.33	19.00	18.67	14.33	18.67	***158.67***
S25	8.67	10.00	13.33	11.33	17.33	15.67	18.00	18.00	15.67	17.67	***145.67***
S26	9.67	9.33	14.00	15.33	22.00	15.67	16.00	18.33	12.00	17.00	***149.33***
S27	11.67	10.67	12.67	10.67	20.33	13.00	15.33	12.67	12.67	16.00	***135.67***
S28	13.67	11.00	12.67	15.00	18.00	16.00	16.67	18.00	17.67	15.00	***153.67***
S29	15.00	10.00	12.33	13.00	18.00	14.67	18.67	17.00	20.33	16.00	***155.00***
S30	13.33	12.00	16.00	14.67	19.00	20.00	17.67	17.67	14.67	15.33	***160.33***
Means	*12.36*	*10.78*	*14.04*	*14.62*	*19.22*	*15.71*	*18.29*	*17.40*	*15.49*	*16.91*	***154.82***
	(45.76%)	*(39.92%)*	*(52.02%)*	*(54.16%)*	*(71.19%)*	*(58.19%)*	*(67.74%)*	*(64.44%)*	*(57.37%)*	*(62.63%)*	***(57.34%)***
SD	*2.42*	*1.79*	*1.34*	*2.32*	*1.71*	*3.10*	*1.98*	*1.92*	*2.68*	*1.70*	***11.04***

2.2 Pretest Scores of Part 1: Pronouncing the Lists of Words

Student	***Full score for each phoneme = 18***										***Full score = 180***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S16	9.00	4.00	8.00	14.00	11.67	11.67	13.67	10.67	8.00	12.67	***103.33***
S17	6.00	8.00	8.67	11.33	13.33	12.00	14.00	14.33	7.33	13.33	***108.33***
S18	11.33	9.33	9.67	12.67	12.33	13.67	14.33	12.33	12.00	10.67	***118.33***
S19	6.00	7.00	8.33	9.33	11.67	5.33	11.67	11.33	9.33	9.33	***89.33***
S20	5.33	5.33	10.67	10.67	12.00	11.00	8.67	12.00	9.33	12.67	***97.67***
S21	10.00	6.00	9.33	8.67	14.00	11.67	14.00	11.00	10.67	12.33	***107.67***
S22	7.33	7.33	10.33	13.00	10.67	8.33	11.33	10.67	12.33	10.33	***101.67***
S23	11.33	6.67	9.33	11.67	14.67	11.67	13.33	15.67	14.33	10.67	***119.33***
S24	6.67	8.00	8.00	8.67	12.00	14.00	11.33	12.33	9.00	12.00	***102.00***
S25	5.33	6.33	8.67	8.00	12.33	11.33	12.33	12.33	10.00	11.33	***98.00***
S26	6.33	5.33	9.67	10.67	14.00	12.00	10.33	13.33	8.00	11.00	***100.67***
S27	8.67	7.33	9.33	8.67	14.33	10.00	10.67	10.00	8.67	10.67	***98.33***
S28	10.00	8.67	8.67	11.00	12.00	10.00	11.00	12.67	11.33	9.33	***104.67***
S29	11.00	5.33	9.00	9.33	11.67	10.33	12.67	11.67	13.33	10.33	***104.67***
S30	10.00	7.67	10.33	9.00	12.67	13.33	11.67	12.33	9.00	10.67	***106.67***
Means	*8.29* *(46.05%)*	*6.82* *(37.90%)*	*9.20* *(51.11%)*	*10.44* *(58.02%)*	*12.62* *(70.12%)*	*11.09* *(61.60%)*	*12.07* *(67.04%)*	*12.18* *(67.65%)*	*10.18* *(56.54%)*	*11.16* *(61.98%)*	***104.04*** ***(57.80%)***
SD	*2.25*	*1.45*	*0.83*	*1.83*	*1.17*	*2.18*	*1.61*	*1.47*	*2.08*	*1.21*	***7.68***

2.3 Pretest Scores of Part 2: Pronouncing the Sentences

Student	***Full score for each phoneme = 18***										***Full score = 180***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S16	4.00	4.33	5.33	4.00	6.00	6.00	6.33	6.33	4.33	6.33	**67.00**
S17	4.67	4.00	4.33	5.00	8.00	5.67	6.33	5.33	5.67	6.33	**55.33**
S18	6.33	5.33	5.67	6.00	8.00	5.33	7.00	4.67	5.00	4.67	**58.00**
S19	3.67	3.33	4.67	3.67	7.00	2.33	6.67	5.33	4.00	5.00	**45.67**
S20	4.33	3.00	5.00	4.00	7.67	6.00	6.33	5.00	6.33	6.33	**54.00**
S21	3.00	3.33	5.67	4.33	6.67	5.33	7.00	5.00	5.00	6.00	**51.33**
S22	5.00	3.00	6.00	4.00	6.67	4.00	6.00	5.33	5.67	5.33	**51.00**
S23	3.00	5.00	5.33	4.00	6.67	2.33	6.33	5.67	5.67	6.00	**50.00**
S24	6.33	5.67	5.33	4.33	4.67	4.33	7.67	6.33	5.33	6.67	**56.67**
S25	3.33	3.67	4.67	3.33	5.00	4.33	5.67	5.67	5.67	6.33	**47.67**
S26	3.33	4.00	4.33	4.67	8.00	3.67	5.67	5.00	4.00	6.00	**48.67**
S27	3.00	3.33	3.33	2.00	6.00	3.00	4.67	2.67	4.00	5.33	**37.33**
S28	3.67	2.33	4.00	4.00	6.00	6.00	5.67	5.33	6.33	5.67	**49.00**
S29	4.00	4.67	3.33	3.67	6.33	4.33	6.00	5.33	7.00	5.67	**50.33**
S30	3.33	4.33	5.67	5.67	6.33	6.67	6.00	5.33	5.67	4.67	**53.67**
Means	*4.07* *(45.19%)*	*3.96* *(43.95%)*	*4.84* *(53.83%)*	*4.18* *(46.42%)*	*6.60* *(73.33%)*	*4.62* *(51.36%)*	*6.22* *(69.14%)*	*5.22* *(58.02%)*	*5.31* *(59.01%)*	*5.76* *(63.95%)*	***51.71*** ***(57.46%)***
SD	*1.10*	*0.94*	*0.84*	*0.95*	*1.03*	*1.38*	*0.71*	*0.84*	*0.92*	*0.64*	***6.56***

2.4 Grand Total Posttest Scores

Student	***Full score for each phoneme = 27***										***Full score = 270***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S16	16.33	18.67	22.00	19.33	19.00	16.67	19.33	23.67	13.33	19.67	***188.00***
S17	15.33	8.67	13.67	18.33	22.67	21.33	19.67	22.00	10.67	18.00	***170.33***
S18	20.67	20.33	18.00	24.33	20.00	22.00	23.67	24.67	15.00	19.00	***207.67***
S19	18.33	12.33	15.33	15.33	19.00	16.67	21.33	20.33	13.00	17.33	***169.00***
S20	14.00	9.33	19.67	17.33	23.33	19.00	19.00	22.33	11.00	17.33	***172.33***
S21	14.00	15.67	15.33	22.00	20.33	19.33	23.33	24.00	15.67	22.67	***192.33***
S22	18.00	18.67	14.00	18.67	19.33	15.67	22.00	22.33	14.33	20.00	***183.00***
S23	13.33	14.00	16.33	19.33	18.33	12.67	22.00	19.33	21.33	18.00	***174.67***
S24	13.00	15.33	15.67	14.67	20.33	16.33	20.00	17.00	14.67	16.33	***163.33***
S25	17.00	17.33	14.33	23.00	19.33	12.67	21.67	23.33	16.33	20.33	***185.33***
S26	11.33	4.67	10.33	14.33	19.00	14.67	22.67	22.33	10.00	16.67	***146.00***
S27	8.00	5.33	10.67	13.33	19.00	18.33	18.33	15.00	13.00	16.67	***137.67***
S28	16.67	16.33	20.67	23.67	22.33	20.33	23.33	22.00	18.00	19.33	***202.67***
S29	12.67	8.33	13.00	16.00	16.33	18.00	22.00	21.33	21.67	19.33	***168.67***
S30	18.67	16.67	12.00	20.67	22.33	18.67	24.00	23.33	22.67	22.67	***201.67***
Means	*15.16 (56.13%)*	*13.44 (49.79%)*	*15.40 (57.04%)*	*18.69 (69.22%)*	*20.04 (74.24%)*	*17.49 (64.77%)*	*21.49 (79.59%)*	*21.53 (79.75%)*	*15.38 (56.95%)*	*18.89 (69.96%)*	***177.51 (65.74%)***
SD	*3.28*	*5.03*	*3.47*	*3.54*	*1.90*	*2.83*	*1.82*	*2.66*	*4.00*	*1.99*	***19.94***

2.5 Posttest Scores of Part 1: Pronouncing the Lists of Words

Student	***Full score for each phoneme = 18***										***Full score = 180***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S16	11.00	13.00	14.67	13.67	13.33	11.33	12.33	16.00	8.00	12.00	***125.33***
S17	10.67	5.00	8.67	13.67	15.00	13.33	12.00	15.33	7.00	12.00	***112.67***
S18	13.33	14.33	11.00	16.00	13.67	14.00	15.33	16.67	11.67	13.33	***139.33***
S19	12.67	8.67	11.00	12.33	13.67	13.00	13.33	12.67	8.33	11.33	***117.00***
S20	9.00	6.00	12.67	12.67	16.00	13.67	11.67	15.67	7.67	12.67	***117.67***
S21	7.33	10.33	9.33	14.33	12.33	14.33	15.33	16.00	10.67	14.67	***124.67***
S22	12.00	11.67	8.67	13.00	12.67	11.67	14.00	15.33	7.67	13.00	***119.67***
S23	7.33	10.33	11.33	13.00	13.00	10.00	15.00	12.33	14.33	12.00	***118.67***
S24	8.00	10.33	10.00	11.33	12.33	11.33	12.67	12.67	8.00	10.67	***107.33***
S25	11.67	13.33	10.00	16.00	13.67	8.67	13.67	15.33	10.67	12.33	***125.33***
S26	7.33	2.00	6.33	11.33	13.00	9.00	14.67	15.00	6.33	11.33	***96.33***
S27	4.33	4.33	6.67	9.67	11.00	10.67	10.33	12.33	10.00	11.33	***90.67***
S28	11.00	11.33	13.67	15.67	15.67	14.00	15.33	16.00	11.67	12.67	***137.00***
S29	8.33	4.33	8.33	11.00	10.67	11.67	14.00	14.00	14.33	14.00	***110.67***
S30	12.00	11.33	6.00	15.33	15.00	11.00	16.00	15.33	15.33	14.67	***132.00***
Means	*9.73* *(54.07%)*	*9.09* *(50.49%)*	*9.89* *(54.94%)*	*13.27* *(73.70%)*	*13.40* *(74.44%)*	*11.84* *(65.80%)*	*13.71* *(76.17%)*	*14.71* *(81.73%)*	*10.11* *(56.17%)*	*12.53* *(69.63%)*	***118.29*** ***(65.72%)***
SD	*2.56*	*3.82*	*2.58*	*1.95*	*1.55*	*1.83*	*1.64*	*1.50*	*2.88*	*1.22*	***13.57***

2.6 Posttest Scores of Part 2: Pronouncing the Sentences

Student	***Full score for each phoneme = 9***										***Full score = 90***
ID	***/θ/***	***/ð/***	***/ʒ/***	***/ʤ/***	***/ʃ/***	***/ʧ/***	***/g/***	***/z/***	***/r/***	***/v/***	***Total***
S16	5.33	5.67	7.33	5.67	5.67	5.33	7.00	7.67	5.33	7.67	***76.67***
S17	4.67	3.67	5.00	4.67	7.67	8.00	7.67	6.67	3.67	6.00	***57.67***
S18	7.33	6.00	7.00	8.33	6.33	8.00	8.33	8.00	3.33	5.67	***68.33***
S19	5.67	3.67	4.33	3.00	5.33	3.67	8.00	7.67	4.67	6.00	***52.00***
S20	5.00	3.33	7.00	4.67	7.33	5.33	7.33	6.67	3.33	4.67	***54.67***
S21	6.67	5.33	6.00	7.67	8.00	5.00	8.00	8.00	5.00	8.00	***67.67***
S22	6.00	7.00	5.33	5.67	6.67	4.00	8.00	7.00	6.67	7.00	***63.33***
S23	6.00	3.67	5.00	6.33	5.33	2.67	7.00	7.00	7.00	6.00	***56.00***
S24	5.00	5.00	5.67	3.33	8.00	5.00	7.33	4.33	6.67	5.67	***56.00***
S25	5.33	4.00	4.33	7.00	5.67	4.00	8.00	8.00	5.67	8.00	***60.00***
S26	4.00	2.67	4.00	3.00	6.00	5.67	8.00	7.33	3.67	5.33	***49.67***
S27	3.67	1.00	4.00	3.67	8.00	7.67	8.00	2.67	3.00	5.33	***47.00***
S28	5.67	5.00	7.00	8.00	6.67	6.33	8.00	6.00	6.33	6.67	***65.67***
S29	4.33	4.00	4.67	5.00	5.67	6.33	8.00	7.33	7.33	5.33	***58.00***
S30	6.67	5.33	6.00	5.33	7.33	7.67	8.00	8.00	7.33	8.00	***69.67***
Means	*5.42* *(60.25%)*	*4.36* *(48.40%)*	*5.51* *(61.23%)*	*5.42* *(60.25%)*	*6.64* *(73.83%)*	*5.64* *(62.72%)*	*7.78* *(86.42%)*	*6.82* *(75.80%)*	*5.27* *(58.52%)*	*6.36* *(70.62%)*	***60.16*** ***(66.84%)***
SD	*1.03*	*1.49*	*1.17*	*1.77*	*1.01*	*1.68*	*0.41*	*1.51*	*1.58*	*1.12*	***8.25***

APPENDIX E: LIST OF THE EXPERTS AND THE JUDGES

1. The Experts Validating Lesson Plans, Pronunciation Pre- and Posttest, and the Judge's Evaluation Form

1. Mattanee Palungtepin, Ph.D.
   (Faculty of Arts, Chulalongkorn University)
2. Mr. Sakol Suethanapornkul
   (Chulalongkorn University Language Institute, Chulalongkorn University)
3. Ruedeerath Chusanachoti, Ph.D.
   (Faculty of Education, Chulalongkorn University)

2. The Judges Evaluating the Students' Pronunciation Ability

1. Mr. George Knight
2. Mr. Peyman Sabri
3. Mr. Alan Locklear

APPENDIX F: THE PHONETIC SYMBOL CHART

In this study, the phonetic symbols for English sounds follow Ladefoged (2006: 39) and those for Thai sounds mainly follow Naksakul (1998: 30). Most of the symbols conform to the principles of the IPA, however, with some modifications.

English Consonant Sounds

/b/	book
/p/	pen
/d/	day
/t/	town
/g/	give
/k/	cat
/v/	very
/f/	fish
/ð/	the
/θ/	think
/z/	zoo
/s/	say
/ʒ/	vision
/ʃ/	she
/ʤ/	jump
/ʧ/	cheese
/l/	look
/r/	run
/j/	yes
/w/	we
/m/	moon
/n/	name
/ŋ/	sing
/h/	horse

Thai Consonant Sounds

/b/	/bâ:n/	‘house’
/p/	/pa:/	‘to throw’
/pʰ/	/pʰûŋ/	‘bee’
/d/	/du:/	‘to look’
/t/	/ta:/	‘eye’
/tʰ/	/tʰŭŋ/	‘bag’
/k/	/ka:/	‘crow’
/kʰ/	/kʰa:/	‘to be stuck’
/f/	/fá:/	‘sky’
/ʔ/	/ʔà:n/	‘to read’
/s/	/sa:j/	‘sand’
/ʨʰ/	/ʨʰá:ŋ/	‘elephant’
/ʨ/	/ʨa:n/	‘dish’
/l/	/lom/	‘wind’
/ɾ/	/ɾúa:/	‘fence’
/j/	/ja:j/	‘grandmother’
/w/	/wæn/	‘ring’
/m/	/ma:/	‘to come’
/n/	/nɔ:n/	‘to sleep’
/ŋ/	/ŋûa:ŋ/	‘sleeply’
/h/	/hĭw/	‘hungry’

English Vowel Sounds

/ʌ/	cup
/ɑ/	father
/æ/	cat
/ɛ/	met
/ɝ/	turn
/ɪ/	hit
/i/	see
/ə/	away
/ɔ/	call
/ʊ/	put
/u/	blue
/aɪ/	eye
/aʊ/	now
/eɪ/	eight
/oʊ/	go
/ɔɪ/	boy
/ɛr/	air
/ɪr/	near

Thai Vowel Sounds

/i:/	/ti:/	‘to hit’
/i/	/bin/	‘to fly’
/e/	/pèt/	‘duck’
/e:/	/tʰe:/	‘to pour’
/ɛ/	/wɛ̂n/	‘eye glasses’
/ɛ:/	/mɛ̂:/	‘mother’
/ɯ/	/tʰɯ̌ŋ/	‘to arrive’
/ɯ:/	/tʰɯ̌:/	‘to carry’
/ɤ/	/ŋɤn/	‘money’
/ɤ:/	/pɤ̀:t/	‘to open’
/a/	/tàp/	‘liver’
/a:/	/pà:/	‘forest’
/u/	/kʰùt/	‘to dig’
/u:/	/rû:p/	‘picture’
/o/	/kòp/	‘frog’
/o:/	/mohǒ/	‘angry’
/ɔ/	/tɕɔ̀ʔ/	‘to pierce’
/ɔ:/	/rɔ:/	‘to wait’
/ua/	/klua/	‘fear’
/ɯa/	/bɯ̀a/	‘bored’
/ia/	/mia/	‘wife’

Thai Tones

/ /	/pa:/	‘to throw’
/ ̀/	/pà:/	‘forest’
/ˆ/	/pâ:/	‘aunt’
/ ́/	/kʰá:/	‘to trade’
/ ̌/	kʰǎ:	‘leg’

BIOGRAPHY

Piyakamol Phintuyothin was born on October 24, 1985, in Bangkok, Thailand. In 2008, she obtained her bachelor's degree with first class honours in Education, majoring in English and Thai, Chulalongkorn University. Then she continued with a master's degree in English at the Faculty of Arts, Chulalongkorn University. She started tutoring English grammar to secondary-school students in 2005 and teaching English to adult learners in 2007. At present, she works as an English teacher at a language institute in Bangkok. Her fields of interest are second language acquisition, interlanguage, and phonetics and phonology. She is particularly interested in employing authentic materials such as songs, movies, and public signs to enhance English language learning.