

Bertram, S. A Case Study of the Noticing-Reformulation Technique (2008)

The research questions addressed in this case study are: 1) Is the Noticing-Reformulation technique effective in improving a Brazilian foreign exchange student's pronunciation of selected phonetic features as demonstrated in spontaneous speech and through reading aloud selected texts and 2) Is the Noticing-Reformulation technique perceived by the student as being an effective technique for improving pronunciation? The features included in this study are: /l/, /d ʒ /, /ð/ and rising intonation in yes/no questions. The study is modeled after Smith and Beckmann's 2003 action research study investigating students' perceptions of the usefulness of the Noticing-Reformulation technique. Data was collected through a mixed quantitative and qualitative research design. Results indicated that the technique was effective in improving the student's pronunciation of the selected features and that the student found the technique to be effective in improving her pronunciation after six weeks of use.

A CASE STUDY OF THE NOTICING-REFORMULATION

TECHNIQUE

by

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requirements for the degree of Master of Arts in English as a Second Language.

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To my husband, Todd, and sons, Conner, Noah and Owen.

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CHAPTER ONE: INTRODUCTION

The first time I traveled to Spain to meet my host family, I realized just how much I truly wanted to fit in and sound like a native speaker of Spanish. Throughout daily conversations with my host family, I found myself paying close attention to the words they used and how they used them. As I spoke with others around me, I would occasionally pause and correct myself, becoming increasingly aware of my own errors. My surroundings created numerous opportunities for comparing my speech with that of a native speaker.

When I returned to the United States, I continued watching Spanish television programs and listening to Spanish radio stations in order to continue my language development. Each time I turned on the television or the radio, I seemed to focus constantly on the speaker's use of the Spanish language. As I listened, I would often have moments where I suddenly realized an error I had made in my own speech. It was as if something suddenly clicked for me as I listened and things seemed to make sense instantly. I was, in fact, noticing a gap in my interlanguage (Schmidt, 1990).

Experiences Teaching Pronunciation

As I began teaching Spanish, one of the areas that always seemed to be a challenge for me was exactly how to approach pronunciation instruction. I felt unprepared in this area of

teaching. Today, I continue to struggle with finding the best techniques for helping all students succeed. At first, I thought it was just a matter of exposing students to the language or immersing them in the language and somehow they would just pick it up. When this did not always succeed with students, I knew there had to be something more.

When I returned to school to pursue a master's degree in English as a Second Language, I took Phonetics and Phonology. This course made me more aware of the role of pronunciation instruction within the second language classroom. I began using tape recordings with students as part of their pronunciation instruction. These opportunities for self-analysis seemed to help improve the pronunciation of my students. I realized that this was possibly an area that I needed to investigate further.

Today I continue working with second language learners of Spanish and English as well as foreign exchange students. In working with high school students, I have found that many of them have the goal of improving their pronunciation so that they can come closer to sounding like a native speaker. This is especially true with the foreign exchange students who are quite determined to improve their pronunciation and sound closer to a native speaker of English as they live in this country. The participant I chose to include in this capstone is a 17-year-old Brazilian foreign exchange student. She had a great motivation to improve her pronunciation as she was residing in this country. She also wanted to score well on a test of spoken English upon her return to Brazil in order to increase her educational opportunities. I want to help my students who have similar pronunciation goals to succeed by finding the best techniques in pronunciation instruction.

Instructors of second languages can also benefit from learning more about specific pronunciation techniques which enable their students to be more successful. Research has shown that some native speakers of English, especially employers, discriminate against certain foreign accents (Derwing & Munro, 1999). Studies have also indicated that native speaker (NS) listeners have a certain bias against people with foreign accents in speech, looking upon the accent as some sort of problem needing to be corrected (Derwing & Munro, 1999). NS listeners tend to link the foreign accented speaker with being less educated and less intelligent (Derwing, 2003). These factors contribute to the pressure felt by non-native speakers to reduce or eliminate their accent. Knowledge about specific successful pronunciation techniques, then, would help teachers give their students more opportunities for employment in the future and a greater acceptance among native speakers.

As I reflect on my own experiences learning and teaching a second language, I realize the many instances I have had to “notice” the use of the second language through input and apply it to my own use of the language. I have also observed my students “noticing” their use of the language through input received in the classroom and making self-corrections based on that noticing. I have found that these comparisons between output and native language input allow learners to develop further and acquire the second language. Researchers such as Schmidt (1990), Mennim (2003) and Thornbury (1997) have suggested that noticing does play a role in second language acquisition. The existing research along with my own experiences has made me interested in discovering tasks that are conducive to noticing, specifically for pronunciation instruction.

Finding Direction in Pronunciation Instruction through Noticing-Reformulation Technique

In the field of second language teaching, pronunciation instruction often seems to get overlooked (Morley, 1991). Second language instructors, including myself, have to manage somehow to fit this into the existing curriculum. Many instructors have also not been given adequate preparation for pronunciation instruction. MacDonald (2002) states that many teachers are not teaching pronunciation due to inadequate training and preparation in the area (as cited in Derwing & Munro, 2005). MacDonald also points out that many teachers lack the confidence needed to teach pronunciation. Teachers want to find ways to help their students improve their pronunciation when they learn a second language, but they need to be given better guidance and direction on how to accomplish this successfully. Research of specific successful pronunciation techniques will enable teachers to more effectively teach second language learners. One technique that may merit closer examination is the Noticing-Reformulation technique (Smith and Beckmann, 2005).

Smith and Beckmann (2005) suggest that the Noticing-Reformulation technique can prove to be effective for improving pronunciation. This technique is intriguing to me because it incorporates noticing, something I have experienced in my own language development, with reformulation, something that has shown some success in helping to improve writing. Noticing involves having the student consciously notice specific features of their input so that acquisition can take place (Schmidt, 1990). Reformulation involves having the teacher reformulate the student's utterance without the error, providing a native speaker model from which to notice. The technique, as used by Smith and Beckmann, incorporates noticing and reformulation by providing a native speaker model which the students then use to reformulate their own language based on any observations they noticed. The role of noticing in second language acquisition has been a topic of discussion in recent years (Thornbury, 1997). The common use

and success of reformulation tasks within written language have also been a focus of attention (Smith and Beckmann, 2005). Prior studies have focused primarily on the role of noticing and reformulation within grammar and written language, while only a few have focused on the role within the area of speaking, especially that of pronunciation. The possibility of the same success in spoken language has generated wide interest in tasks incorporating noticing and reformulation (Thornbury, 1997). The Noticing-Reformulation technique incorporates noticing and reformulation. In Smith and Beckmann's Noticing-Reformulation technique, however, the teacher doesn't reformulate but provides a native speaker model which the students use to notice and reformulate their own speech. Reformulation is used by those in the SLA field quite similarly to recasts (Doughty & Varela, 1998; Lyster & Ranta, 1997). While Smith and Beckmann's use of reformulation differs from those in the SLA field, I think that a closer examination of this technique is worthwhile. This investigation will allow me to see the potential it has for the classroom.

I chose to work with one student for the purposes of this study. This student had a strong desire to improve her pronunciation of the English language before returning to her own country. I also worked with this student individually which allowed me to use this technique more easily. The student chose the phonetic features that are included in this capstone. At the start of the year I tape recorded the student reading a text and then had her listen to and identify areas that she felt she needed to improve. There were several areas that she identified as being problematic; however, I only chose the features to be used in this study because they matched my own identification of her problematic features. The features included in this study are: /l/, /ð/, /dʒ/ and rising intonation in yes/no questions. These features are problematic for

the student because she is sometimes misunderstood or she regularly needs to repeat words or statements with these features due to accentedness.

This capstone examines the effectiveness of the Noticing-Reformulation technique on a Brazilian foreign exchange student's pronunciation through a six week case study. Will the student's pronunciation of the three segmental and one suprasegmental selected features become less accented after using the technique? The research questions proposed in this capstone are: 1) Is the Noticing-Reformulation technique effective in improving the student's self-selected phonetic features as demonstrated in spontaneous speech and through reading aloud selected texts and 2) Is the Noticing-Reformulation technique perceived by the student as being an effective technique for improving pronunciation?

Discovering the answers to the questions proposed in this capstone has great significance to others in the field of second language learning. Instructors of pronunciation as well as second language learners can benefit from this knowledge by applying this technique to the classroom. A more thorough understanding of the effectiveness of the technique used in this capstone will also enable language instructors to provide more effective pronunciation instruction to their students. Specialists involved with second language learning may also benefit from this information by extending studies of the technique.

In Chapter Two, Literature Review, I will begin with a comparison of some of the phonetic features in Brazilian Portuguese and English. Then I will review pronunciation techniques used to teach segmental and suprasegmental features in second language classrooms. Finally, I will discuss the two main ideas of the Noticing-Reformulation technique, that of noticing and reformulation.

In Chapter Three, I will discuss the methodology I developed to complete the study. I will then give a description of the recordings I use for analysis and the tests I administer to determine pronunciation improvement. Following this section, I will discuss the questionnaire used to elicit the student's opinion on the effectiveness of the technique.

In Chapter Four, I will discuss the results of my study by presenting the data I collected. A paired t-test is used to show analyses of speech recordings. The discrete item tests are also measured and analyzed. The questionnaire is interpreted to determine student perception of the technique.

In Chapter Five, I will include what I learned upon completion of the study. I will use the results to base my answer on the effectiveness of the Noticing-Reformulation technique for the pronunciation features investigated here. I will discuss the implications of the study and make suggestions for future research related to pronunciation teaching techniques. Limitations of the study will also be reviewed.

CHAPTER TWO: LITERATURE REVIEW

This capstone examines a Brazilian exchange student's pronunciation of three segmental features and one suprasegmental feature through noticing-reformulation tasks in order to determine if the Noticing-Reformulation technique is: 1) effective in improving the student's self-selected phonetic features through spontaneous speech and through reading aloud selected texts and 2) perceived by the student as being an effective technique for improving pronunciation. I begin this chapter with a comparison of some of the phonetic features in Brazilian Portuguese and English. In order to understand the research question better, I also discuss the rationale for pronunciation instruction in the second language classroom. I then review other traditional pronunciation techniques for teaching second language learners segmental and suprasegmental features. Then I discuss the new directions in pronunciation teaching where the learner takes a more active role in learning pronunciation. I conclude with a discussion of the literature that is beneficial to understanding the main components of the Noticing-Reformulation technique, both noticing and reformulation.

Comparison of Phonetic Features in Brazilian Portuguese and English

According to Salies, there is quite a difference between the English and Brazilian Portuguese (BP) phonological systems which can lead to some problem areas for BP learners of English (1998). The current study investigates a Brazilian foreign exchange student's

pronunciation of the following features through noticing and reformulation tasks: /l/, /ð/, /dʒ/, and rising intonation in yes/no questions. These segmental and suprasegmental features are among those discussed by Salies, Azevedo and others which can cause difficulty in pronunciation for a BP learner of English (Azevedo, 2005).

The articulation of the vowels in BP is quite similar to the articulation of the English vowels /iy, a, ε, u/ and is not likely to be problematic for a BP learner of English (Salies, 1998). There are, however, five English vowels that do not exist in the BP vowel inventory and can cause problems for a BP learner of English. One of those five vowels is /i/, a segmental feature included in this study. BP learners of English tend to underdifferentiate the pronunciation of /i/ and /iy/ (i.e., list and least). This can create misunderstandings in communication, especially when minimal pairs exist (Salies, 1998).

Compared to the BP vowel inventory, the BP consonant inventory is less complex (Salies, 1998). Azevedo (2005) indicates that fifteen of the nineteen consonant phonemes have an approximate articulatory homologue in English. By homologue, Azevedo is referring to the fact that these phonemes have the same relative position when articulated. The English /ð/ included in this study is amongst the few that do not have equivalents in BP. BP learners of English can end up articulating /ð/ as /s, ʒ, f, t, or d/. Shepherd (1987) points out that this can lead to difficulties in comprehension because such words as “breathes” is confused with “breeds.”

The palatal affricate /dʒ/ included in this study is also amongst those that do not have an equivalent in BP. This can be a source of negative transfer since many BP learners of English

may substitute /ʒ/ for /dʒ/ (Azevedo, 2005). Substitution can ultimately impact communication (Salies, 1998). For example, a native English speaker listening to a BP learner of English may interpret similar words such as “major” being “measure” based on the speaker’s pronunciation. The speaker is substituting /ʒ/ for /dʒ/ in these words causing confusion for the listener.

The final feature included in this study is rising intonation in yes/no questions. When a person articulates an utterance, the voice rises or falls to various pitch levels (Celce-Murcia, Brinton & Goodwin, 1996). This involves intonation which signals if a given utterance is a statement, a question or a command (Azevedo, 2005). The patterns of BP intonation are similar to those patterns found in English (Salies, 1998). Rising intonation in yes/no questions is not likely to be a problem due to the similarity; however, Portuguese has a narrower range of pitches compared to English and can sound flat to English speakers. This may create confusion in communication whether an utterance is intended to be a question or a statement.

Pronunciation Instruction in the Second Language Classroom

The role of pronunciation within the second language classroom has changed over the years as a result of changing methodologies. These changes were evident when Audiolingualism identified pronunciation with being able to accurately produce sounds or words in isolation, to the Communicative Approach, where pronunciation was regarded as having limited importance (Pennington & Richards, 1986). Pronunciation is, however, an integral part in oral communication. Some experts in the field have questioned whether or not pronunciation should be taught (Morley, 1991). Studies such as Derwing’s (2003) allow researchers and teachers to see the need for pronunciation instruction within the classroom. Her study

investigated 100 ESL students in order to determine the learners' perceptions of pronunciation problems in their speech as well as consequences of having a foreign accent when speaking. The study included oral interviews and questionnaires. The results found that more than half of the subjects had experienced problems in communication that they felt were due to pronunciation. In addition, it was discovered that many negative interactions were encountered by the speakers due to pronunciation or accent. Many of the speakers felt discriminated against or treated rudely due to intolerance for the foreign accent. Teachers and students need to be made aware of the fact that there is a bias against foreign accents and this bias can affect the student's chances for employment (Munro & Derwing, 1995). Teachers need to aim to help students improve their intelligibility and to avoid negative interactions by recognizing individual pronunciation needs (Derwing, 2003).

Anderson-Hsieh and Koehler (2006) investigated the effects of both foreign accent and speaking rate on native speaker comprehension. The researchers used three native speakers of Chinese and one native speaker of English in the study. Each of the speakers read passages at different speaking rates and was tape recorded. Native English speakers then listened to the recordings while taking a listening comprehension test and rating the speech samples. The results of the study showed a higher comprehension score for the native speaker passages than the non-native passages. The study also indicated a greater decrease in comprehension when a faster rate was used by the non-native speakers who had a strong accent compared to the others in the study. This suggests that a non-native speaker would have a greater difficulty being understood among native speakers due to accent.

Schmid and Yeni-Komshian (1999) also conducted a study on the effects of non-native speaker accent. Their study involved having both native and non-native speakers produce and record statements containing mispronunciations. Native English speakers then listened to the statements in order to detect the mispronunciations. The results indicated that native listeners were able to detect more accurately and faster mispronunciations produced by native speakers compared to those of non-native speakers. In addition, their findings indicated that the native speakers were able to detect mispronunciations by non-native speakers with a milder accent more accurately and faster compared to those with a stronger accent. These results indicate that there may be a greater processing effort needed for accented speech. The results of all of these studies strengthen the need for pronunciation instruction within the second language classroom.

Varying Pronunciation Goals

The main goal in teaching pronunciation to second language learners over the past several decades has been to help them obtain intelligible pronunciation (Celce-Murcia, Brinton & Goodwin, 1996). Derwing & Munro (2005) point out that education experts in the field of pronunciation regard improved intelligibility as the most important goal in learning pronunciation. Intelligibility in this sense would mean how well a listener can understand the speaker's message (Munro & Derwing, 1995). According to Munro and Derwing, some pronunciation experts, however, would say that the goal of pronunciation should be to reduce or eliminate any foreign accent. This attitude is becoming more evident with the increase seen in accent reduction programs over the past several years. Accentedness is regarded within these programs as something that needs to be corrected in order for the speaker to not be

discriminated against as well as to eliminate many of the other negative associations with having a foreign accent.

Although the strength of a speaker's accentedness has been shown to be correlated with intelligibility and comprehensibility, it cannot be assumed that a strong accent will indicate low intelligibility and comprehensibility in a non-native speaker's speech. This was the conclusion drawn from Munro and Derwing's (1995) study on the speech of second language learners. They investigated the interrelationships among accentedness, comprehensibility and intelligibility by having eighteen native speakers of English listen to and rate the speech produced by ten native speakers of Mandarin. The Mandarin speakers were given a page of cartoons and were asked to describe the events illustrated using English. Their speech was recorded and played back for the 18 native English speakers. The listeners transcribed what was said to determine intelligibility. They also rated the speakers using scales to determine comprehensibility and accentedness. The listeners found more than half of the speech produced to be 100% intelligible and rated the speech highly in terms of comprehensibility. In looking at the results of accentedness, however, the listeners rated many of the speakers as "heavily accented." While a speaker may have a strong foreign accent, this does not necessarily indicate that the speaker will not be understood.

Still other pronunciation experts might argue that comprehensibility should be the primary goal in instruction (Varonis & Gass, 1982). Comprehensibility is the ease to which a listener is able to interpret the message being spoken. Instructional goals that aim to improve a speaker's intelligibility, accentedness or comprehensibility can all be beneficial within

pronunciation instruction depending on the learner and his/her individual goals. In order to help learners reach their goals, instructors have used a variety of techniques over the years.

A History of Pronunciation Instruction

Celce-Murcia, Brinton and Goodwin (1996) provide a very comprehensive list of traditional pronunciation techniques used throughout the years. I will summarize the techniques described by these authors in order to provide more knowledge of the existing pronunciation techniques. This background information will provide a clearer understanding of past practices in pronunciation teaching that have guided the direction of pronunciation teaching today.

Celce-Murcia, Brinton and Goodwin (1996) list ten techniques that have been and continue to be used in second language classrooms. Listen and Imitate, Phonetic Training, Minimal Pair Drills and Contextualized Minimal Pairs all have a focus on listening to a native speaker to improve pronunciation. In the Listen and Imitate technique, students listen to a teacher or NS model and then attempt to imitate it. Phonetic Training makes use of articulatory descriptions and diagrams as well as a phonetic alphabet. In this technique, students may do phonetic transcription or read phonetically transcribed text. Minimal Pair Drills is a technique that involves having the student distinguish between sounds that may be problematic in the target language. The student completes listening discrimination activities that typically start at the word level and continue at the sentence level. Contextualized Minimal Pairs is a technique similar to Minimal Pairs with the added component of making the vocabulary used in the various contexts more meaningful.

Visual Aids, Tongue Twisters, Developmental Approximation Drills, and Practice of Vowel and Stress Shifts Related by Affixation are techniques that focus on pronunciation at the word level. Visual Aids is a technique that involves having the teacher enhance how sounds are produced through making use of such things as sound-color charts, mirrors or pictures. Another technique is Tongue Twisters which is commonly used as a speech correction strategy for NS. The words used in this technique all contain a particular sound and can be difficult to say quickly. Developmental Approximation Drills is a technique that has the learner follow the steps that a native speaker used as a child to acquire sounds in their first language. Practice of Vowel and Stress Shifts Related by Affixation is a technique in which the teacher uses etymologically related words to bring attention to the rules of both vowel and stress shifts. For example, “mime” would be used with “mimic” to show the vowel change.

Reading Aloud or Recitation and Recordings of Learners’ Productions are two techniques that have a focus on the discourse level. In using the Reading Aloud technique, learners practice reading passages aloud so that they can focus on improving their stress, timing and intonation. Recordings of Learners’ Productions involves having the student record his/her speech from such things as conversations or role plays. Instructors and/or peers can then use the recording to give feedback to the learner about their pronunciation. The techniques and descriptions are included in Figure 2.1 below:

Figure 2.1 Pronunciation Techniques and Descriptions

Pronunciation Technique	Description of Pronunciation Technique
Listen and Imitate	Listening to a native speaker and imitating that speech

Phonetic Training	Using articulatory descriptions and diagrams
Minimal Pair Drills	Distinguishing between sounds through listening
Contextualized Minimal Pairs	Using meaningful vocabulary to practice pronunciation
Visual Aids	Using visuals to assist in the description of sounds
Tongue Twisters	Applying strategies used in speech correction for NS (e.g., “She sells seashells by the seashore.”)
Developmental Approximation Drills	Using the same pattern of language and sound development that children take when acquiring their first language
Practice of Vowel and Stress Shifts Related by Affixation	Using words related etymologically to teach rules of pronunciation
Reading Aloud or Recitation	Using texts for students to read aloud to practice more prosodic features
Recordings of Learners’ Productions	Recording the speech of the learner and playing it back to obtain feedback from instructors and/or peers

The first four techniques listed in Figure 2.1 incorporate listening to a native speaker to assist in improving pronunciation, but fail to take into account the learner who needs to have a more active role in learning pronunciation by doing such things as monitoring his or her own pronunciation (Vitanova & Miller, 2002). The four subsequent techniques, while somewhat

beneficial, only allow for the learner to improve pronunciation at the word level. This research will investigate the effectiveness of a pronunciation technique on both word level and discourse level speech in order to gain a more complete understanding of the benefits of the technique. While the last two techniques listed in the chart do provide for more practice at the discourse level, the highly scripted material used leads researchers to believe that improved pronunciation in spontaneous speech is less likely to occur (Celce-Murcia, Brinton & Goodwin, 1996). The research included in this capstone does not rely solely on scripted material but also studies the effectiveness of the technique on the learner's pronunciation by including spontaneous speech. This inclusion may strengthen the effectiveness of the technique.

Techniques such as those listed in Figure 2.1 have been used in various studies over the past years in order to determine their effectiveness in pronunciation instruction. A study completed by Macdonald, Yule and Powers (1994) investigated the different types of instruction through four different variables. The overall purpose of the study was to determine which intervention would be most effective with the learners' spontaneous speech of targeted vocabulary items. The first group in the study was given traditional drilling activities to practice the vocabulary items, similar to the Listen and Imitate technique mentioned in Figure 2.1. The second group was asked to self-study by listening to the words and phrases on a practice tape and then repeating the words and phrases after hearing them. The third group in the study was given no intervention and served as a control group. The fourth group in the study was given modified interactions from an instructor while giving a mini-lecture in which they used the targeted vocabulary items. The researchers found that the first group, vocabulary drill, had the least amount of changes due to intervention while the self-study group had the greatest amount of changes due to intervention. While the results indicated that no single method was effective

for all learners, it did indicate that providing students with the opportunity to listen to a recording of native speech and allowing time for self-study can be successful in improving targeted vocabulary in pronunciation.

Studies using minimal pairs have also been completed by Cruz (2005) and Levis and Cortes (2008). Cruz investigated the use of minimal pairs in the intelligibility of Brazilian learners' English pronunciation. Ten Brazilian learners of English were interviewed and recorded by a native English speaker. The recordings contained various samples of mispronunciation in minimal pairs found within a linguistic context. Twenty-five native English speakers then listened to the recordings and were asked to transcribe what they had heard. The results indicated that none of the words in the samples obtained caused misunderstandings amongst the listeners. Cruz argues that the mispronunciation in words which form minimal pairs does not necessarily lead to misunderstanding of Brazilian learners of English.

Levis and Cortes (2008) also completed a study using minimal pairs. They examined whether the minimal pairs used to teach common problem sounds in pronunciation are frequent in actual usage. The researchers collected commonly used pronunciation texts containing minimal pairs and compared those pairs to the frequency found in natural spoken language. The results indicated that many of the minimal pairs used to teach pronunciation were very unlikely to occur in spoken corpora. Levis and Cortes state that it is not clear whether minimal pair drills or exercises are helpful for speaking.

Despite the numerous pronunciation teaching techniques, the question still remains in discussions of pronunciation teaching as to how it should be taught (Morley, 1991). There is still much disagreement among experts as to which techniques are the most consistently effective

with learners. Since intelligibility is an important component in pronunciation teaching, teachers cannot ignore the question of how pronunciation should be taught, but they must continue searching for answers. In relation to this question is “*What should be taught?*” Is it best to teach segmental features or suprasegmental features or both in order to improve pronunciation?

Segmental and suprasegmental features

Traditional pronunciation techniques have largely focused on segmental features to teach intelligible pronunciation (Celce-Murcia, Brinton & Goodwin, 1996). Segmental features are defined by Celce-Murcia, Brinton & Goodwin as the vowels and consonants which constitute a given language (1996, p.35). Riney, Takada and Ota (2000) conducted a study using segmentals in order to answer, among several other things, what should be emphasized in pronunciation teaching: segmentals or suprasegmentals. They recorded 11 Japanese English as a Foreign Language (EFL) speakers reading words and sentences and speaking spontaneously in their first and fourth years of college. It was found that the segmentals used in the study (substitution of the Japanese flap for English liquids) were related to foreign accent, calling for a need to address segmentals within pronunciation teaching (Riney, et al., 2000). Many textbooks written in the 1960’s and 1970’s were based on the segmental approach (Riney, et al., 2000). Since the 1980’s, however, the focus in textbooks has changed to a suprasegmental approach (Riney, et al., 2000; Cruz, 2005; Levis and Cortes, 2008).

Suprasegmental features are those distinct features found within a language extending beyond one sound segment, such as stress, rhythm and intonation (Celce-Murcia, Brinton & Goodwin, 1996). The change of focus from segmentals to suprasegmentals in speech is

primarily due to the influence on language teaching of the Communicative Approach, whose advocates believe that pronunciation should be taught communicatively, not in isolation (Celce-Murcia, et al., 1996). Within the longer streams of speech, suprasegmentals have been found to have a greater effect on meaning than segmentals (Celce-Murcia, et al., 1996). In fact, the speaker may not be understood at all by a native speaking listener. A study conducted by Hahn (2004) examined English speakers' reactions to nonnative primary stress used in English discourse. The ninety subjects included in her study were assigned to one of three experimental groups. Each group listened to a native speaker of Korean read a text in English. The text was read in a different way to each group so that the stress placement would be different. The results of the study indicated that when primary stress is correctly placed, the speaker is more easily understood and more positively received than when the stress is incorrectly placed. This study suggests the need for suprasegmentals in pronunciation instruction. Language teachers realize that learners who are unable to produce both segmental features and suprasegmental features will be difficult to understand, so the focus now is to try to create more of a balance of segmental and suprasegmental features in pronunciation instruction (Celce-Murcia, Brinton & Goodwin, 1996). More research is needed on specific pronunciation techniques that include both segmental and suprasegmental features, such as the Noticing- Reformulation technique. This knowledge will assist teachers in creating a more balanced curriculum in their classroom.

New Directions in Pronunciation Teaching

Traditional pronunciation techniques have emphasized a teacher centered classroom where the learner is solely a recipient of instruction (Morley, 1991). The emphasis in the field today has shifted to the learner taking on a more active role within his/her own language

acquisition. Among Morley's principles that guide the current directions in teaching are: placing more of an emphasis on the learner's involvement in the pronunciation teaching and learning process, and focusing on a balance of both segmental and suprasegmental features to improve pronunciation. Celce-Murcia, Brinton and Goodwin (1996) also suggest similar points for consideration among techniques in pronunciation today: the need to acknowledge the independence of students to guide their own learning and to include teaching that encompasses the isolated word level, sentence level and discourse level. The need for learner involvement and a focused balance in pronunciation learning and teaching are clear, yet there seem to be few techniques that incorporate both of these aspects.

One technique incorporating these aspects that is also supported by experts such as Acton (1984), Browne and Huckin (1987), Firth (1992), and Ricard (1986), is self-directed learning (as cited in Celce-Murcia, Brinton, & Goodwin, 1996). In this technique students choose their own learning goals and have control over the activities and techniques that fit their individual needs and style of learning. Self-directed learning also allows the student to set their own pace and pick a time and location for learning (Celce-Murcia, Brinton & Goodwin, 1996). An important component of this technique is the use of self-evaluation and/or self-monitoring in learning. Self-evaluation allows students to be able to evaluate their progress according to the goals they set. Self-monitoring allows students to take control of their learning by paying close attention to their pronunciation. In a study conducted by Yule, Hoffman and Damico (1987), self-monitoring was found to assist learners in having a greater confidence in becoming aware of when they were making a mistake and when they were not. The fifty subjects included in their study were adult ESL learners who listened to forty different sentences focusing on phoneme discrimination. This test was followed with a confidence rating scale. The subjects

were rated during three different periods of time. Over the first period of time to the last period of time, self-monitoring skills improved. The researchers concluded that learners with better self-monitoring skills would be more capable of correcting their own pronunciation errors. The findings suggest that self-monitoring can be beneficial in pronunciation instruction.

While the self-directed technique seems to be “revolutionizing the teaching of pronunciation,” there are some slight variations in the focus and methods of implementation (Celce-Murcia, Brinton & Goodwin, 1996, p.349). For example, Acton (1984) places more of a responsibility on the learner to improve his/her pronunciation through the use of a contract and more independent selection of methods to use in order to accomplish their selected pronunciation goals (as cited in Celce-Murcia, et al., 1996). Self-directed learning is used a little differently by Dickerson (1984) who encourages students to use what he refers to as covert rehearsal in learning pronunciation (as cited in Celce-Murcia, et al., 1996). Dickerson incorporates a checklist for students to use when rehearsing pronunciation. Both Acton and Dickerson vary in their focus and methods of implementation with no specific procedural outline. The technique used in this capstone is specifically outlined in order to have a stronger consistency in the focus and implementation.

It is apparent that the direction of pronunciation teaching today includes both a balance of suprasegmental and segmental features and more of a learner-centered classroom. These components seem to be important considerations for the success of any pronunciation technique. The question that remains among researchers and educators today is which technique is able to incorporate these components?

Noticing-Reformulation Technique

The Noticing-Reformulation technique integrates both noticing tasks and reformulation tasks in order to improve pronunciation. It also allows for a focus on self-directed learning, a popular direction in today's teaching, which was discussed in the previous section. Both noticing tasks and reformulation tasks have been used successfully in numerous studies (Adams, 2003; Tocalli-Beller & Swain, 2005; Mennim, 2003) in order to improve written language, but few studies have used noticing and reformulation tasks to improve spoken language, more specifically that of pronunciation (Smith & Beckmann, 2005; Adams, 2003). Since noticing and a form of reformulation are the basic components of the Noticing-Reformulation technique, it is useful to begin the section with a discussion of them.

Noticing in Second Language Acquisition

There are a few questions relevant to understanding noticing. First of all, what is noticing and how does it pertain to second language acquisition (SLA)? Second, how has noticing been used effectively within second language classrooms and studies? And third, can noticing tasks be applied effectively to SL pronunciation teaching?

Noticing and its role in SLA has been a topic of discussion over the years (Thornbury, 1997). Izumi and Bigelow (2000) and Batstone (1996) discuss how noticing plays an important role in SLA and an essential one for language teachers, by pointing out recent studies in the field. Noticing is based upon Schmidt's Noticing Hypothesis which proposes that second language learners must consciously notice the grammatical form of their input in order to acquire grammar (1990). Schmidt also refers to this as *noticing the gap*. Truscott has indicated, however, that the hypothesis has been included in areas of language other than grammar (Truscott, 1998). In Schmidt's hypothesis, he views noticing as necessary for the acquisition of a

second language (L2). This view of noticing as a prerequisite for language acquisition is widely accepted by those in the SLA field. In applying this concept to teaching, learners compare their output with the target language and make corrections when they notice a gap in their own language with that of the target language. Noticing also requires an aspect included in current directions in pronunciation instruction, that of self-monitoring. A learner must independently notice a mismatch.

There are several studies that investigate the role of noticing on different tasks with the majority being those based on written or spoken grammatical features rather than on pronunciation. Izumi and Bigelow (2000) conducted a study to investigate the noticing function of output through essay writing tasks and text reconstruction tasks. The researchers gave both groups the same input on examples of the target form used in the study (Izumi & Bigelow, 2000). They were then asked to complete the different tasks. Subjects underlined the forms they had noticed. One group of adult ESL learners was given opportunities for output while the other group participated in comprehension based activities. The results of the study indicated that the output did not always succeed in getting students to notice the target form. Since the study was completed in a relatively short amount of time, 4.5 hours, the researchers speculated that extended opportunities would be crucial for improvement in future studies of noticing. This capstone will look at the role of noticing over a longer period of time.

Lai and Zhao (2006) conducted a study examining learners' noticing of their own grammatical errors through text-based chat. The study included twelve university ESL learners formed into six dyads. Subjects were asked to spot the differences between two pictures both online and during face to face interactions. The interactions were videotaped. After completion

of the tasks, the subjects were asked to identify instances of noticing by watching the interactions on videotape. The interviewer would stop the tape when the subject would observe negotiation of meaning based on noticing. The researcher encouraged the subject to explain what he/she was thinking during that instance in order to better understand the noticing that was occurring. The results of the study indicated that online chat was found to promote more noticing than face to face interactions. The researchers suggested that the online chat was more effective due to a longer processing time and permanency of the text. It suggests that other methods using noticing will also be successful if subjects are given time to process differences noticed. The technique used in this capstone will allow for the suggested longer processing time.

Several studies such as Mackey (2006), Egi (2004), Mennim (2007) and Lynch (2001) have investigated noticing within spoken language. Mackey's (2006) study investigated noticing through oral feedback. The study was conducted with 28 ESL learners at the university level. The researchers wanted to discover if interactional feedback promoted noticing of a language form and whether there was a relationship between self-reports of noticing, the language forms used and the language outcomes. The study included an experimental group who participated in a theme-based game show activity. Questions were asked about various television shows. The game show activity allowed for opportunities for feedback on targeted linguistic forms from the teacher when necessary. The control group was given the same linguistic input but was not provided with interactional feedback. The researchers collected data on noticing through journals, stimulated recall protocols, written responses about the activities and questionnaires. The results showed that feedback and noticing are related. It also showed positive results for self-reports on noticing and the language outcomes.

Egi's (2004) study which measured noticing through the use of a verbal recall technique, was similar to Mackey's (2006) study in that it also included an aspect of oral interaction. Egi's study included 26 adult learners of Japanese as a foreign language. The researcher used a pre-test-treatment-post-test design in order to compare the immediate report group with the stimulated recall group. Each group completed the same pre-test, treatments and post-test, but differed in the time of recall. The immediate report group recalled their thoughts about brief language interactions with a native speaker immediately after the interaction. The stimulated recall group recalled their thoughts while watching a videotape of the interactions after the post-test. Stimulated recall has been used in other studies as well to elicit noticing, for example, Adams, 2003; Mackey, 2004; Morris & Tarone, 2003 (as cited in Egi, 2004). The results of the post-tests and learners' productions indicated that there were no significant differences between the immediate report and stimulated recall groups. The researcher suggested that the effects of noticing may have greater benefits in the long range as learners are given increased opportunities to notice the targeted form.

Another study on noticing which obtained similar results was completed by Mennim (2007), who investigated it through oral EFL presentations. The university level EFL students chosen for the study were all enrolled in an academic presentation course. The students prepared three different presentations over the span of nine months. The presentations increased in length over the time period. Scripts were not used during the presentations. The students were also given several activities throughout the year to encourage noticing. After each week, students were asked to fill out sheets prompting them to write down any new language noticed during that particular week. The students were also asked to fill out a post-presentation questionnaire immediately after their presentations. This was intended to draw

their attention to language form used in each presentation. During the course, students were also asked to transcribe their speech from a recording of their presentation. The instructor returned the scripts back to the students with necessary corrections. The results of the study indicate that noticing may have contributed to the long-term improvements observed in the students' oral accuracy of the grammatical form. This is similar to Egi's conclusion.

Lynch (2001) also conducted a study incorporating noticing. The researcher wanted to discover such things as how much learners would notice and in which areas (grammar, vocabulary, etc.) and would transcribing be a good route to noticing language features (Lynch, 2001). The subjects in the study included eight adult English for Academic Purposes learners in an oral communication class. They came from multiple language backgrounds. Oral presentations by the students were given based on different assigned scenarios. The researcher then had the subjects transcribe their own performances. As students worked collaboratively, they would make changes and corrections. The teacher then made further corrections and discussed them with the student. The results of this study showed that transcribing was an effective means to noticing. The results also showed that students noticed features numerous times and that those features noticed were largely for the better. Lynch suggests that noticing allows for reflection, something that is lacking in the classroom today.

Despite all of these studies involving noticing, few studies have been completed using noticing within pronunciation. It has been suggested by Thornbury (1997) that noticing tasks can be applied to areas where the learner is able to make a comparison in his/her output with that of the target language. Wilson (2003) states that although a task may be designed to notice grammar, it is possible that students will notice additional language features while performing

the task. Smith and Beckmann (2005) recognized the fact that noticing was effective for language learning in several areas and used that as a basis for constructing the Noticing-Reformulation technique. The study conducted by Smith and Beckmann is discussed in more detail in a section below.

Reformulation in SLA

In addition to having a better understanding of noticing, it is important to have a reasonable knowledge of reformulation as it relates to the Noticing-Reformulation technique. The questions raised in the previous section on noticing will be addressed here as well. First, what is reformulation and how does it pertain to second language learning? Second, how has reformulation been used effectively within second language classrooms and studies? And third, can reformulation tasks be applied effectively to SL pronunciation teaching?

Reformulation is a technique originally designed to improve writing. It consists of having a native speaker rewrite or reconstruct the writing of a second language learner to make it sound more native-like with the aim of keeping the writer's original ideas (Tocalli-Beller & Swain, 2005). Within the second language classroom, reformulation helps the learner to attain native-like proficiency in written language. Thornbury (1997) classifies this technique as being task-based because it reverses the traditional practice of accuracy to fluency model. Traditionally, learners are taught a particular concept and are then asked to write something using this knowledge with accuracy. The instructor makes corrections in the writing to move the learner to a level of fluency. In the reformulation technique, however, learners use the best language they have to communicate the intended meaning. The meaning is then reformulated by a native speaker of the language (Thornbury, 1997). Adams (2003, p.351) refers to

reformulation as being an “extended, written recast.” Reformulation, then, has the goal to assist the learner in improving his/her writing by creating a model that can be used for comparison.

Similar to noticing, reformulation is also a technique that includes writing as the focus of many studies. In a replicated study of Swain and Lapkin (2002) completed by Adams (2003) as well as a study by Tocalli-Beller and Swain (2005), students’ writings were reformulated according to grammar. Tocalli-Beller and Swain (2005) administered a study using noticing upon reformulation of the students’ own writing. The study was designed to measure the impact of reformulation on second language learning. Twelve students in a seventh grade French immersion program were included in the study. They were asked to complete five stages during the study. The stages included writing, noticing, stimulated recall, a post-test and an interview. Students first watched a video that included a grammar lesson and then reconstructed that story seen by writing it collaboratively. Two days later the subjects were given the written reconstruction that had then been reformulated. Students were asked to notice the changes and to share their thoughts on videotape. The noticing stage was included in the study in order to give students time to reflect on the language and its use. Students were then asked to write the same story individually making changes where needed. They were interviewed as a last stage of the study in order to obtain perceptions of the methods. The study showed that the reformulation of the students’ writings contributed in part to the learning of the grammatical form evident in the results of the post-test. The success of reformulation in this study indicates the potential for its success in other areas of second language learning.

In Adams' study (2003) implications for interlanguage development are given based on L2 output, reformulation and noticing. She replicated and extended the study by Swain and Lapkin (2002) of noticing through reformulation of writing and the impact this can have on second language learning. Adams studied 56 university learners of Spanish at the intermediate level. The students were randomly assigned to one of three different groups: a control group, a noticing group and a noticing and stimulated recall session group. During the first phase of the study the learners were paired and were given a jigsaw type activity using pictures that told a story visually. The interactions were tape recorded. After reconstructing the story, the learners were asked to write the story together. This was also recorded. The stories were then reformulated by a native speaker. The original story and reformulations were then treated differently with each group. The Noticing group met individually with the instructor and was asked to verbalize the differences they noticed in the two story versions. The Noticing and stimulated recall group also compared their story with the reformulated story. This group, however, was asked to listen to their recording made and to use it as a stimulus in recalling thoughts about comparisons. The last phase of the study included the original picture task and students were then asked to write out the story individually. The results of the study indicated the learners who were in the noticing groups included more than half of the reformulations in their output. This study also found that noticing along with reformulated writing can have an impact on subsequent writing.

Reformulation is a technique that could be used within areas other than writing. Thornbury (1997) promotes the technique for spoken language in classes with individualized instruction. Johnson (1988) indicates that even though reformulation has been used over the years with written language, there is no indication that reformulation is not possible to use with

a learner's spoken language (as cited in Thornbury, 1997). This strengthens the idea that reformulation can be applied to other areas of language learning such as speaking.

Noticing and reformulation

Thornbury (1997) suggests that reformulation is conducive to noticing because learners are focused on noticing features that they found to be problematic in the first attempt upon receiving the native model. In Adams' (2003) study, she indicates that reformulations lend themselves to noticing because the learners have to independently find differences between their own interlanguage and the target language. The study completed by Tocalli-Beller and Swain (2005) mentions the need for noticing in reformulations for an impact in learning to occur. Thornbury (1997) further suggests that learners with different needs and at different stages in their learning are more capable of noticing the areas of mismatch upon reformulation compared to an "accuracy to fluency" model of instruction where the learner isn't necessarily attentive to problematic features. Reformulation leads to noticing, which Adams (2003) states leads to interlanguage development. Students must notice the error and understand it in order for reformulation to be effective.

Previous Research on Noticing- Reformulation technique

Smith and Beckmann (2005) designed the Noticing-Reformulation technique, which combines noticing with what they refer to as reformulation. As described earlier in this chapter, noticing is being able to recognize a mismatch between one's own speech and native speaker speech. The technique also involves a form of reformulation which differs somewhat from the way it is commonly used in the SLA field. They originally designed the technique to be used as an assessment task for English language learners. Existing research that has tested the Noticing-

Reformulation technique on oral performance was not found during this investigation. Smith and Beckmann (2005) used this technique to examine student perceptions of the technique on their pronunciation; however, they did not use it to test oral performance. Their study investigated whether the Noticing-Reformulation technique was considered to be useful for students through noticing and reformulation tasks. The subjects included advanced level English language learners in a university course. Students were shown a stimulus and provided with a short text that described the stimulus. The students then read and recorded the text. After, the students listened to their own recording and analyzed it using a worksheet according to selected phonetic features provided by the instructor. Students were then provided a native speaker recording of the same text and were asked to analyze the text for the same targeted phonetic features. The students then compared their pronunciation with the native speaker pronunciation using the analyses. Students were then given the opportunity to record a second time by correcting any errors they had previously noticed. The final step included a reflection on the recordings. The results of the study indicated that students found their pronunciation had improved. The researchers also suggested that this technique would improve oral performance.

This capstone will investigate the effects of the technique on oral performance by replicating the study by Smith and Beckmann (2005). The technique needs to be tested on oral performance in order to determine its effectiveness in pronunciation instruction. The technique incorporates noticing and reformulation tasks by having students follow a series of steps. These steps include having students listen to and analyze their own speech by focusing on specific phonetic features. The students then compare their pronunciation with a native speaker model. After students have worked on the specific phonetic features, they record their text a second

time in order to approximate the model pronunciation. In addition to a measure on oral performance using the Noticing- Reformulation technique, this capstone will also measure that performance in spontaneous speech. I would like to include true reformulation in this study through the student's spontaneous speech.

In conclusion, the Noticing-Reformulation technique is a technique that needs to be further investigated in order to determine its effectiveness. Traditional pronunciation techniques do not take into account the learner who needs to have a more active role in learning pronunciation. The majority of the techniques discussed also tend to focus on improving pronunciation only at the word level. The techniques discussed at the discourse level do not fully address their benefits in spontaneous speech due to the highly scripted material used. A balance of segmental and suprasegmental features is necessary in any pronunciation technique used with today's learners, but there are few available. There have been numerous studies researching noticing and reformulation, but the majority of those studies had a focus on written language. There is a lack of research involving the role of noticing and reformulation tasks on pronunciation. Since the two types of tasks are conducive to one another, it seems beneficial to further investigate this area. The research questions asked then to conduct such an investigation are: Is the Noticing -Reformulation technique effective in improving a Brazilian student's pronunciation of her own selected phonetic features? Will she perceive the technique as being effective?

In the following chapter, the methods of the study will be discussed. A detailed description will be provided on the participant, setting, and data to be collected to answer the

research question. I will conclude the chapter with a discussion of how the method will be implemented.

CHAPTER THREE: METHODS

This study investigates a Brazilian foreign exchange student's pronunciation of four selected segmental and suprasegmental features through noticing-reformulation tasks in order to ascertain if the Noticing- Reformulation technique is: 1) effective in helping to improve the selected phonetic features in spontaneous speech and through reading aloud selected texts and 2) perceived by the student as being an effective technique for improving pronunciation. In Chapter Two, the rationale for pronunciation instruction was discussed along with traditional pronunciation techniques and new directions in teaching pronunciation. In addition, the importance of creating a balance of segmental and suprasegmental features in instruction was also explained, the role of noticing and reformulation within the second language classroom was described and a summary of a study being replicated in this research was given. This chapter will explain the methods used for obtaining an answer to this research question.

Research Design

The research questions are answered through a mixed quantitative and qualitative research design. A simplified definition of qualitative research includes research that is dependent on descriptive data (Mackey & Gass, 2005). It provides a rich description and uses few participants to answer the questions being posed. The qualitative research method used in this capstone is a case study. Case studies are similar to ethnographies in that they aim to

explain the use or learning of a language within a particular population and environment through detailed explanations (Mackey & Gass, 2005). Case studies can also provide more specific and comprehensive information about individual learners within a particular setting. Through a case study, research is usually investigated during regular intervals and over an extended period of time. They allow the researcher to study the individual (case) that would, at times, be impossible to do in a larger group. The field of second language research has used a variety of case studies.

The purpose of this study is to determine if the Noticing-Reformulation technique is effective in improving pronunciation. I modeled my study after Smith and Beckmann's 2005 action research study investigating students' perceptions of the usefulness of the Noticing-Reformulation technique. The case study method allowed me to more thoroughly evaluate the effectiveness of the technique since I was able to study the pronunciation of an individual using both spontaneous speech and reading aloud texts. If the conclusions in this study coincide with the results in Smith and Beckmann's, the effectiveness of the technique can be strengthened and made to be more generalizable. However, unlike the data collected in their study, in addition to questionnaires, I used discrete item tests and pre and post tape recordings. A triangulation of data strengthens the reliability and validity of the study (Mackey & Gass, 2005).

Research Site

The school where the study was conducted is located in southwestern Minnesota. It is a rural school that has a predominantly Caucasian population and a small Hispanic population. The school is located in a small town of about 2,000 people. Annually, the school experiences a small growth in the number of Hispanics enrolling in the district. These students are usually

from migrant families and have parents that work in a neighboring town. These students are usually enrolled in the ESL program at the school. The school is also occasionally a host to one or two foreign exchange students for the academic year. The majority of these students come from large cities and experience life in an American small town as they live in an area predominantly Caucasian and English speaking.

Research Participant

The participant chosen for this case study was Silvana, a female Brazilian exchange student. In order to protect the participant and ensure anonymity, I have changed the name of the student. Silvana is a native speaker of Brazilian Portuguese. She attends a private school in northeastern Brazil where students are required to study English or Spanish in addition to several other courses. Silvana studied English for nine years while in Brazil, beginning her studies at the age of 7. She has received English pronunciation instruction within her regular English courses during which her instructors regularly used phonetic symbols. She consistently received high marks in her English courses throughout the years. Silvana also received intensive English vocabulary instruction from a private tutor for one month before coming to the United States. She arrived in late August of 2007 to begin her academic year at the research site as a foreign exchange student. In September, Silvana was given the Woodcock-Munoz Language survey and scored a level 3 in oral language. Her goal is to learn to speak English well so that she may return to her country and further her education. In addition to studying English, Silvana has also completed one semester of Spanish.

I chose Silvana to be in my case study because she was highly motivated to improve her pronunciation. At the time of the study, Silvana resided in the target language environment

with a focus on English. Due to her residence in this country, she already had some exposure to *noticing the gap*. The second question I have in my research, “Does the student perceive the technique as being effective?” provided an opportunity for a more detailed answer since she was living in the area where the language was spoken and was able to give instances of how the technique had been effective. I also worked individually with Silvana daily for 50 minutes as part of my English as a Second Language class. The program is a pull-out ESL program. During this time, I worked with her on writing, reading comprehension and pronunciation. She was very comfortable with me and was able to provide detailed information in the open-ended questions.

The phonetic features included in this study were selected by the student. At the beginning of the academic year I asked Silvana what she felt she most needed to improve upon in her pronunciation. While Silvana had several areas she felt could be improved upon, for the purposes of this study only four were chosen to be included.

Data Collection Techniques

In order to determine the effectiveness of the Noticing-Reformulation technique I triangulated my data. I used pre and post tape recordings of Silvana’s spontaneous speech and oral text readings of the four phonetic features in question. These recordings allowed me to listen to Silvana’s pronunciation carefully. I used them to measure her ability to produce the features included in the study. I also used a discrete item pre/post test as an additional way to measure the effectiveness. By including an additional measurement such as the discrete item test, I was able to understand more thoroughly the technique’s effectiveness. The discrete item tests also provided for the possibility that the student could identify the feature but not produce

it. In order to determine whether the student found the technique to be effective, I gave weekly opportunities for a written reflection. I also provided an open-ended questionnaire during the last week of the study to determine the student's perception on the overall effectiveness of the technique. Open-ended questionnaires give participants an opportunity to express themselves in their own way and can therefore provide some unforeseen data (Mackey & Gass, 2005).

The study was completed over a period of six weeks (See Figure 3.1). A period of 50 minutes was planned for Day 1 and Day 30 of the study. A period of 20 minutes was used for the remaining 28 days of the study. Each feature was used three different times during the course of the study.

Figure 3.1 Case Study Schedule

	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Spontaneous speech; Pre- test; Feature 1	Reformulate Feature 1	Feature 2	Reformulate Feature 2	Reflection
Week 2	Feature 3	Reformulate Feature 3	Feature 4	Reformulate Feature 4	Reflection
Week 3	Feature 1	Reformulate Feature 1	Feature 3	Reformulate Feature 3	Reflection
Week 4	Feature 2	Reformulate Feature 2	Feature 4	Reformulate Feature 4	Reflection
Week 5	Feature 1	Reformulate Feature 1	Feature 4	Reformulate Feature 4	Reflection
Week 6	Feature 2	Reformulate Feature 2	Feature 3	Reformulate Feature 3	Reformulate Spontaneous speech; Post- test; Questionnaire; Reflection

Spontaneous Speech

During the first day of the study, I taped the student's spontaneous speech (See Appendix A). I had her talk about her first day in this country. This allowed me to measure the impact the technique has on the student's pronunciation in spontaneous speech, rather than solely relying on the results of scripted speech for measurement. In order to measure further spontaneous speech, I also had the student try to guess what was in a picture I was holding by asking me twenty yes/no questions. This activity is what is commonly known as "Twenty Questions."

Discrete Item Pre-test

I then gave the student a discrete item pre-test where she was able to show her knowledge of the four phonetic features in the study: /l/, /dʒ/, /ð/, and rising intonation in yes/no questions (See Appendix B). The pre-test included a total of 20 items. Each feature in the study was used five times in the test.

Student Recording of Written Text

After the pre-test had been administered, I gave the student a written text consisting of a few sentences which focused on the phonetic feature /l/ (See Appendix C). This will be referred to as "Feature 1." The student read the sentences using the written text and I recorded her.

Recording Analysis

Next, the student listened to her recording and analyzed her own pronunciation using a worksheet provided (See Appendix G, Appendix I and Appendix K). An example of the type of question that was included is, "Can you hear at least five words in the recording that have the same vowel sound? If yes, what are they?"

Native Speaker Recording

I then recorded the same text, giving the student a native speaker model. She then listened to the native speaker recording and analyzed it using the same questions in addition to making a comparison (See Appendix H, Appendix J and Appendix L). For example, “Can you hear at least five words in the recording that have the same vowel sound? If yes, what are they? Did you notice a difference in the speaker’s pronunciation and yours? If yes, what specifically did you notice that was different?”

Comparison of Recordings

On the second day of the study, I had the student compare her own recording with the native recording by using the analyses as a guide. This allowed the student to “notice the gap.” The student then recorded a second time using the same text while attempting to improve upon her pronunciation of the feature. On the third and fourth days of the study, the same procedure was followed; however, a new phonetic feature was included. The feature was /dʒ/ (See Appendix D and Appendices M-R). This will be referred to as “Feature 2.”

Written Reflection

The fifth day of the study concluded the week with an opportunity for reflection. The student used the time to compare her first and second recordings and wrote comments on any improvements or continued errors. The prompt provided for these reflections included: Reflect on your first and second recordings during this week. Comment on any improvements made and/or any continued errors. Also comment on what features you noticed this week. (See Appendix EE).

Second Week

During the second week of the study, the student focused on two different features. The features in this second week were /ð/ and intonation in yes/no questions. These will be referred to as “Feature 3” and “Feature 4” (See Appendix E, Appendix F and Appendices S-DD). Feature 3 was used in the technique on the first two days of the week while Feature 4 was used the subsequent two days of the week. The fifth day of the week was again used for student reflection on noticed improvements or continued errors. I followed the same procedure described in detail above.

Subsequent Weeks

During the subsequent weeks of the study, the same four phonetic features were repeated in the Noticing-Reformulation technique in order to provide more opportunities for practice. By the end of the study, each feature had been included in the technique three times. The third week included Feature 1 and Feature 3. The fourth week included Feature 2 and Feature 4. The fifth week included Feature 1 and Feature 4. Each week was again followed with a written reflection.

Last week

During the last week of the study, the sixth week, I transcribed the student’s spontaneous speech and had her analyze it as she had done in the previous weeks. I then reformulated her spontaneous speech and recorded it for her to listen to and analyze, focusing on the four phonetic features used. The student then used her analyses and prepared to record a second time. The topic remained the same and again no written text was provided so that the speech was truly spontaneous. The student was also given a post-test which was the same test that was conducted during week one of the study (See Appendix B). In addition, the student used the technique once again with Features 2 and 3. Finally, the student was given an open-ended questionnaire as well as a final written reflection (See Appendix EE and Appendix FF). The questionnaire included questions such as, “Do you feel that the technique was effective in improving your pronunciation? How was the technique effective?” These

answers allowed me to evaluate the student's perception of the technique, the second question in my study.

Data Analysis

I analyzed the recordings, discrete item tests, written reflections and questionnaires used in the study to provide a more detailed description of the effectiveness of the technique. I counted the number of times the selected feature used is accented in both pre and post recordings of text reading and spontaneous speech in order to measure improvement. I determined the feature as accented if it deviated from that used by a native speaker. I used a Paired t-test to measure this comparison. I also analyzed the discrete item pre and post tests by counting the number of errors and used a Paired t-test to measure the comparison made from week one to week 6 of the study. The questionnaire and written reflections were analyzed for responses on perception of the technique. I studied the comments written in the questionnaire regarding the specifics of the technique. As I looked at the responses, I referred back to the technique. The answers given by the student allowed me to understand her overall perception of the technique. I also studied the comments written in the weekly reflections and looked for a pattern in the student's perception of her own improvement. They provided some new insight into an unexpected area related to the technique.

In this chapter, I provided the methods for the research. I described the data to be collected, the purpose of the data and how it relates to the question being investigated in this research. The following chapter discusses the results of the data collection analysis. The fifth chapter discusses the implications of the study for the second language classroom.

CHAPTER FOUR: RESULTS AND DISCUSSION

The purpose of this case study was to determine if the Noticing-Reformulation technique is: 1) effective in helping to improve the selected phonetic features in spontaneous speech and through reading aloud selected texts and 2) perceived by the student as being an effective technique for improving pronunciation. Chapter Three explained the methods of data collection. This chapter will summarize the results and show how they correspond to the research questions. The results of the data will be analyzed and described to show patterns and interrelationships. This chapter will also connect the results discovered with previous literature. The next chapter is the concluding chapter, which addresses the implications of the study for the second language classroom.

Results

The data gathered for this study through a mixed quantitative and qualitative research design indicated that the Noticing-Reformulation technique was effective in improving the Brazilian foreign exchange student's pronunciation of the selected phonetic features included in the study. The results also indicate that the student did perceive the technique to be effective in improving her pronunciation after six weeks of use. The Paired t-test provided data to measure improvement in the pre and post recordings of text reading and spontaneous speech and also in discrete item pre and post- tests. The written reflections and questionnaire provided data for understanding the student's overall perception of the technique.

Discrete Item Pre/Post Tests

The discrete item pre and post tests were analyzed by counting the number of errors made. The comparisons obtained in the results were then measured using a Paired t-test. Table 4.1 illustrates the results obtained from these tests. As shown in the table, the student made improvements in all four areas following the use of the technique.

Table 4.1 Discrete Item Pre/Post Tests

	Pre- test	Post- test
	Errors	Errors
	(Before technique)	(After technique)
Part I	5	4
Part II	1	0
Part III	6	2
Part IV	3	0

Part I of the discrete item test entailed having the student listen to and circle the word heard. The student listened to me reading the sets of words, a native speaker voice with which she was quite familiar. There were a total of 15 different sets of words included in this section with each of the three segmental features used five different times. Interestingly, in the pre-test, the student made five errors all within only one area, the /l/. The four errors made in part one of the post test were also all those sets containing /l/. These results from the pre/post tests indicate that the student did not significantly improve in her perception of /l/.

Part II of the discrete item test involved having the student listen to and identify whether what she heard was a question or a statement. Again, I read the statements and questions to her because she was quite familiar with me. The student did not seem to have any major difficulties in this area of discrimination, making only one error. In fact, in the post test, the student did not make any errors.

Part III of the discrete item test included having the student circle the phonetic symbol for the underlined sound. There were a total of 15 words included contrasting between sounds typically substituted by a Brazilian Portuguese speaker learning English: /ʒ/ and /dʒ/, /iy/ and /i/, /ð/ and /d/. The second section of Part III entailed having the student read the words aloud as I recorded her. The student made a total of six errors in the pre test in all of the areas combined. She had two errors in the contrast between the phonemes / ʒ/ and /d ʒ/, three errors in the contrast /iy/ and /i/, and one error in the contrast / ð/ and /d/. The post test included only two errors of which both were the contrasts /ʒ/ and /dʒ/.

The last part of the discrete item test, Part IV, included having the student indicate by drawing with an arrow if her voice rose or fell at the end of each yes/no question. The student then read the questions aloud while I recorded her. There were a total of ten questions included in this part of the discrete item test. The student made three errors in the pre test which included the questions: Can I help you? Monday is a holiday? She's five years old?

The student made the most improvement in Parts III and IV of the test following the use of the Noticing-Reformulation technique. Parts I and II of the test saw the least amount of improvement. Even after the technique, the student still seemed to have some difficulties in listening discrimination with the selected phonetic features, specifically that of /iy/ and /i/. Parts III and IV of the test did not require having the student listen to a native speaker and discriminating between what was heard, which may

have been one reason for the larger improvement made. The student seems to have more difficulty with listening discrimination of /iy/ and /I/ than with production of these sounds.

The Paired t-test analysis of the differences between means yielded a t of 3.00 for the discrete item pre-test (before technique) and post test (after technique). Assuming the null hypothesis, the probability of this result is 0.058 (See Appendix HH for detailed results of the Paired t-test results). The differences in these scores show statistical significance. The student's performance on the post test was better than her performance on the pre test. The Noticing-Reformulation technique seems to have had an effect on the results of the discrete item pre/post tests.

Pre/Post Recordings of Text Reading and Spontaneous Speech

The recordings were analyzed by tallying the number of times each selected feature used was accented in both the text readings and spontaneous speech (See Appendix GG). I listened to each recording a total of three times in order to increase accuracy. The text readings contained at least ten examples of the selected phonetic feature (See Appendices C-E). A total of three text readings for each phonetic feature were recorded both before and after the technique (Refer to Figure 3.1 for detailed schedule of study). Spontaneous speech was also recorded both before and after the technique. Tallies were then marked for each phonetic feature that was accented in spontaneous speech. The tallies for each phonetic feature were then added together for a total both before and after the technique. These comparisons between recordings were then measured using a Paired t-test. As shown in Tables 4.2-4.6, improvements were made in all four phonetic features.

Table 4.2 Accented Pronunciation Totals for /I/ Recordings

	First Recording	Second Recording
	(Before technique)	(After technique)
Text 1	4	1
Text 2	2	1
Text 3	4	2
Spontaneous Speech	4	1
Total	14	5

Table 4.3 Accented Pronunciation Totals for /ð/ Recordings

	First Recording	Second Recording
	(Before technique)	(After technique)
Text 1	6	4
Text 2	5	2

Text 3	2	0
Spontaneous Speech	6	2
Total	19	8

Table 4.4 Accented Pronunciation Totals for /dʒ/ Recordings

	First Recording	Second Recording
	(Before technique)	(After technique)
Text 1	5	2
Text 2	5	2
Text 3	3	0
Spontaneous Speech	1	0
Total	14	4

Table 4.5 Incorrect Intonation in Questions Totals

	First Recording	Second Recording
	(Before technique)	(After technique)
Text 1	4	1
Text 2	5	1
Text 3	1	0
Spontaneous Speech	7	1
Total	17	3

The student made a big improvement in the first phonetic feature listed in the table above, /I/. A total of 14 tallies were made for her accented pronunciation in the text readings combined with her spontaneous speech before the technique. The student's accented pronunciation total was reduced to only five after the technique. Even before the technique from Text 1, given in the first week of the study, to Text 2, given halfway through the study, there was a substantial improvement made by the student. The student consistently made improvements in each text reading and in spontaneous speech with /I/. In comparing these results to the discrete item post test results, however, it is interesting to note that /I/ still seemed to cause some difficulty for the student. She was able to produce the sound better than she was able to discriminate the sound when listening to a native speaker.

The student also made improvement with the second phonetic feature listed in the table above, /ð/. Before the technique, a total of 19 tallies were made for the student's accented pronunciation of /ð/ in the text readings combined with her spontaneous speech. Similar to /l/, the student's accented pronunciation total for /ð/ was also reduced. The total following the technique was reduced to only eight. The student consistently made improvement in this area from Text 1 to Text 3. In Text 1 after the technique, only four tallies were made for accented pronunciation of /ð/. This number decreased by one half in Text 2. In the last part of the study, the student did not have any accented pronunciation for /ð/. The student's spontaneous speech also showed quite an improvement. The student had accented pronunciation with the phonetic feature six times before the technique and only two times after the technique. There was a gradual reduction in the student's accented pronunciation throughout the study with this feature.

The student also had positive results for the third feature in the table, /dʒ/. There were a total of 14 instances of accented pronunciation made by the student in the text readings and spontaneous speech with this feature before the technique. This total was reduced to only four following the use of the technique. As seen in the table, the student had accented pronunciation five times before the technique and three times after the technique both in Text 1 and Text 2. This number was reduced during the last week of the study during which the student went from having accented pronunciation of /dʒ/ three times before the technique to zero after the technique. The student's spontaneous speech had only one instance of accented pronunciation before the technique. There was no accented pronunciation of /dʒ/ following the technique in the student's spontaneous speech.

The last feature listed in the table, intonation in questions, also showed considerable improvement made by the student in this study. There were a total of 17 instances of incorrect intonation made before the technique whereas only three instances occurred after the technique. The

student's spontaneous speech of the questions had the most improvement. She had seven instances where she did not use the correct intonation for yes/no questions in English and only one instance following the use of the technique (See Appendix A Part II). The third time using this feature proved to be the most successful with no instances of incorrect intonation occurring in the questions. In fact, Table 4.2 illustrates that by the third time using all the features except /l/ after the technique, the student was quite successful in eliminating all instances of accented pronunciation and incorrect intonation.

The results from the recordings indicate that there was improvement made in the student's accented pronunciation of the phonetic features: /l/, /ð/, /dʒ/ and intonation in yes/no questions. The student had notable results in all four areas; however, the student's pronunciation of /ð/ and her intonation in questions had the most improvement. There was a consistent pattern of improvement made by the student from the first text readings given at the beginning of the study to the last text readings given at the end of the study.

The Paired t-test analysis of the differences between means yielded a t of 10.2 for the student's recordings of text readings and spontaneous speech before the technique and after the technique. Assuming the null hypothesis, the probability of this result is 0.002 (See Appendix HH for detailed results of the Paired t-test results). The differences in these scores show statistical significance. The instances of accented pronunciation in text readings and spontaneous speech decreased significantly following the use of the technique. The Noticing Reformulation technique seems to have had an effect on these results.

Weekly Student Reflections

The student completed weekly reflections after each week of the six week study (Refer to Appendix EE for sample of reflection). These reflections were analyzed in order to answer the second question in this research: Does the student perceive the Noticing-Reformulation technique to be an effective technique in improving pronunciation? The written responses provided by the student allowed me to better understand the student's overall perception of the technique.

The student's reflections were usually quite brief consisting of 2-3 statements per week. She noticed improvement in her own pronunciation from the very first week of the study. She commented, "I think with the /l/ sound I improved already." Again in week two she commented, "I feel like with the /ð/ I need to put my tongue out to make the right sound, so I think I improved." By week three, the student seemed to have a greater confidence level stating that "I think I am much better with the /ð/." Again in week four the student commented on her own improvement, this time with the intonation in questions. She writes, "The questions I'm much better now." By week five, the student felt "much better" about her pronunciation of /l/. In the final weekly reflection, she responded that she noticed improvement in both features for the week stating, "I think I'm better in both."

Throughout the first four weekly reflections, the student always commented on at least one area of improvement and one area where she felt she was still making errors. The last two weekly reflections, however, indicated that the student felt her pronunciation of all four features had improved but that they could "maybe improve a little more." These comments are consistent with what was found in the recordings; the third text readings were completed during weeks five and six at which point the student had made significant improvement. At one point, the student even commented on one needed area of improvement that was not even the focus for the week. For example, in week one, the student felt she needed to improve her pronunciation of words ending in "-ly", as in "gradually" because she stated, "I continually make the wrong sound."

These reflections give an indication that the student did perceive the technique to be effective in improving her pronunciation. They also indicate that the student was, in fact, noticing the features that were intended to be the focus for each particular week of the study. The student regularly found areas of improvement each week. After more regular use of the technique, the student also seemed to feel better about her own pronunciation of all the areas included in the study.

Questionnaire

The questionnaire was given to the student during the last day of the study (See Appendix FF). This was included along with the weekly student reflections in order to answer the second research question in this study: Does the student perceive the Noticing- Reformulation technique to be effective in improving her pronunciation? Similar to my analysis of the weekly student reflections, I analyzed the comments in the questionnaire regarding the specifics of the technique in order to better understand her perception of the technique. There were a total of seven questions included in the questionnaire. The first four questions elicited comments while the last three asked the student to rate herself on a scale of 1 of 5.

In the first question of the questionnaire, the student was asked if she felt her pronunciation had improved and if it had, to explain how it had improved. She responded with, "I feel that my pronunciation has improved with the time and with the technique. I think helped me listen to myself after listen to the speaker and record again." The student did not comment on any specifics of how her pronunciation had improved. The second questionnaire asked: "What specific things did you notice about your pronunciation compared to that of a native speaker through the use of this technique?" The student answered, "When the speaker recorded I always could compare and see a lot of difference in our sound." It is evident from this response that the student felt that the recordings were beneficial in providing an opportunity to notice. The third question asked about the specifics of the technique. The

question was “Which parts of the technique did you find most useful?” The student answered with “The part of recording.” She felt that this benefited her and provided her an opportunity to improve her English. The fourth question asked if she would continue using this technique and to explain why or why not. She replied, “Yes, I think it’s a good idea to learn (this way), when I go back to my country I gonna suggest to my teacher use it.” It is evident from this answer that the student felt the technique was effective enough to suggest it to her teacher in Brazil.

The last set of questions dealt with how the student felt about her own pronunciation and asked her to rate them on a scale of 1-5 with one being lowest and 5 being highest. When asked to rate her own pronunciation before the use of this technique she gave herself a “2”. When asked how she would rate her pronunciation after the use of this technique, the student gave herself a “4”. The increase from a “2” to a “4” indicates that she found the technique to be effective in improving her pronunciation. The final question pertained to her confidence level in being able to notice and compare her own pronunciation with that of a native speaker with 1 being not at all confident and 5 extremely confident. The student gave herself a “3” on this scale indicating that she was confident.

Connections to Literature

This research attempted to answer two questions about the Noticing- Reformulation technique: 1) Is it effective for improving the pronunciation of selected phonetic features? and 2) Does the student perceive the technique as being effective in improving her own pronunciation? I will now show how the results of this study compare to the results found in other studies on noticing and reformulation.

This study of the Noticing-Reformulation technique attempted to replicate the study completed by Smith and Beckmann (2005). The results of student perception of the technique coincided with the results found by Smith and Beckmann; the student found the technique to be effective in improving pronunciation. While the researchers did not test oral performance in their study, they did suggest that

this technique would be effective in improving oral performance. The results provided by the analysis of the recordings and the Paired t-test match the suggestion given by Smith and Beckmann. The Noticing-Reformulation technique can be effective in improving the pronunciation of an English language learner.

The Noticing-Reformulation technique involved both noticing and reformulation tasks. Numerous studies involving noticing have had success with second language students in written and spoken grammatical features (Izumi & Bigelow, 2000; Lai & Zhao, 2006; Egi 2004). All of these studies speculated that success of noticing would be dependent on extended opportunities for noticing. The researchers' speculations were correct; the student in this study did have success in noticing, which could be due to the extended opportunities she was given. Her weekly reflections indicated the fact that she was noticing the different phonetic features in the study. The noticing also had an effect on the student's ability to correct her own pronunciation errors. As the study progressed, the student's skills for being able to notice features also increased, which strengthens the conclusion by other researchers that learners with better self-monitoring skills would be more capable of correcting their own pronunciation errors (Yule, Hoffman & Damico, 1987).

There have also been several studies involving success with reformulation (Adams, 2003; Tocalli-Beller & Swain, 2005). The success seen in the results of the post-tests in these studies was attributed to the reformulation. The reformulations of the student's pronunciation (native speaker recordings) in this study also allowed the student to make successful improvements in the post recordings. Thornbury's (1997) idea that reformulation can be applied to the spoken area of language learning is strengthened by these results.

The potential success of noticing tasks combined with reformulation tasks suggested by researchers such as Thornbury (1997) and Adams (2003) is further strengthened with the results of this research. Adams stated that the reformulations lend themselves to noticing because learners have to

find differences in their own language and the target language (2003). The results of this study also prove this to be true in that the student was able to use the recordings effectively to find a mismatch in her own pronunciation.

In this chapter, the results of my study and how they correspond to the research questions were discussed. The results of the data were analyzed and described to show patterns and interrelationships. A connection with the existing literature in this area was also made. Overall results obtained through a triangulation of data showed that the Noticing-Reformulation technique was effective in improving pronunciation and was perceived as being effective by the student. Chapter Five, the last chapter, will discuss the limitations and implications of this study. I will also discuss my reflections of this study and revisit the literature review. Suggestions will also be made as to how this study can impact future research as well as have an impact my own teaching.

CHAPTER FIVE: CONCLUSION

In this capstone, I sought to discover if the Noticing-Reformulation technique is effective in improving the pronunciation of a Brazilian foreign exchange student's use of three segmental and one suprasegmental feature. I have also examined the student's perception of the effectiveness of the technique on her own pronunciation. I conclude in this chapter by reflecting on major learning from this capstone, addressing the limitations and implications of my study, making recommendations for future research and discussing how this study will affect my future teaching of pronunciation.

Reflections on Major Learning

This capstone project allowed me to learn some interesting things pertaining to second language pronunciation instruction. As a teacher, I feel it is important to reflect on past practices and experiences in the classroom in order to improve upon future ones. This project allowed me to look more closely at pronunciation instruction and to use that knowledge gained from the experience to enhance my teaching.

I have discovered the importance of having the student involved in his/her own learning. When students have some control over their own pronunciation learning, they are better able to meet their educational goals (Celce-Murcia, Brinton & Goodwin, 1996). The student in this study helped in selecting the phonetic features which are included. This allowed her to have a greater chance for success in improving pronunciation. I believe that the control given to the student not only led to

greater success in the learning of pronunciation, but also lent itself to being an increased motivation factor for the student.

I have also learned that noticing is influential in the learning of pronunciation. This capstone allowed me to see that it truly can be vital for language teachers (Izumi & Bigelow, 2000; Batstone, 1996). Students need to be given time to *notice the gap* independently in their own pronunciation. I believe that the student in this study was successful because she was provided ample processing time to notice a mismatch between her pronunciation and mine. In the past I have failed to provide this time for my students to notice due to classroom time constraints among other things. I now have an increased awareness of the necessity of noticing in second language pronunciation learning.

Conducting this research also allowed me to discover that opportunities for written reflections can be beneficial to both the student and the instructor. Allowing time for students to reflect on their learning is something that is lacking in the classroom today (Lynch, 2001). The weekly written reflections used in this study allowed the student time to think about the areas in which she had improved in her pronunciation as well as the areas in which she still needed to continue to improve upon. This focused her attention on what she had learned providing her with an awareness of her own progress made during that week. Those reflections also helped me as her instructor. I was able to get a better understanding of how she felt she was progressing with the instructional technique. I have learned that I can use students' reflections to help guide my own pronunciation instruction of their individual needs.

Limitations

There are several limitations in this study that should be considered. First, this study included only one participant, so the results cannot be easily generalized. Case studies are intended to give a more in-depth look at specific cases within their special contexts (Mackey & Gass, 2005). The participant

in this study was a Brazilian foreign exchange student that may or may not have exhibited typical English language learning behavior. For example, the participant had a great motivation to improve her pronunciation due to academic expectations in her home country. She was also an advanced level English language learner with some knowledge of the IPA. The results of this study may be different for a participant who does not have the same type of motivation and/or knowledge as the participant in this study.

Second, the study took place over a relatively short time frame. Allowing the student more extended opportunities to notice is crucial for improvement (Izumi & Bigelow, 2000). A more extended study may present some completely different results about the technique.

Third, there are limitations with the variety of phonetic features used within this study. There were only three segmental features and one suprasegmental feature used with the student. A larger variety of features might allow a researcher to obtain a better understanding of the technique's effectiveness.

Fourth, I was the speaker for all of the pre and post test listening discrimination items. The student may have become accustomed to listening to my speech throughout my daily interactions with her. The results from this study may not reflect how she would handle the discrimination of sounds in the real world.

Fifth, I was the only rater in determining the participant's accentedness during this study. I did not utilize any type of instrumentation to determine the participant's accentedness. Due to the background I have as an ELL instructor and in working with the participant on a daily basis, this may have led to some subjectivity while listening to the student's speech. All of these limitations presented provide a more comprehensive understanding of the study.

Implications

The results of this capstone have some implications for second language learners and teachers as well as specialists in pronunciation teaching. The results suggest that the Noticing-Reformulation technique can be effective in improving the pronunciation of both segmental and suprasegmental features. This would imply that it could be beneficial to use within a second language classroom to improve upon students' pronunciation. It has been suggested that pronunciation instruction needs to have more of a focus on a balance of segmental and suprasegmental features (Celce-Murcia, Brinton & Goodwin, 1996). The Noticing-Reformulation technique allows for this important balance in instruction.

Instructors could benefit by implementing this technique in their language classrooms as part of pronunciation instruction. Although this study was completed with one student, there is potential for the technique to work within a larger group setting. Instructors could have a designated area set up in their classroom for recording on a cassette tape or on a computer. While the instructor is working with the large group, a smaller group of students could go to the designated area to record. The instructor could provide the student with various text readings and native speaker recordings which focus on a specific phonetic feature and then follow the technique steps. Instructors could also implement a computer software program that would work in both large and small group settings, such as Rosetta Stone. This particular program is designed so that the student can see, by means of a visual, how close his/her pronunciation matches that of a native speaker.

Second language learners could benefit by applying this technique outside of the classroom setting as well. Learners could pay closer attention to how they were saying something and compare that to a native speaker to notice any mismatch. They could be encouraged to do this by keeping a journal of those instances of mismatch that they notice in the real world and sharing them with the instructor and/or the class. As I stated in my introduction, this is how I first became interested in further

studying the Noticing- Reformulation technique, by comparing my speech with what I was hearing around me.

Pronunciation specialists could use the results of this study to investigate further its potential for the classroom. They might look more closely at the specific aspects of the technique that seem to benefit learners the most. Other possible future areas of research are discussed more in detail in the next section.

Future Research

The results of this study suggest possibilities for future research in noticing and reformulation within pronunciation instruction. Smith and Beckmann (2005) are the only researchers who have completed a study that deals specifically with noticing and reformulation on pronunciation. There have been several studies on noticing (Lynch, 2001; Mennim, 2007; Egi, 2004) and several even on reformulation (Tocalli-Beller & Swain, 2005; Adams, 2003), yet the research is still quite limited in regards to noticing and pronunciation or reformulation and pronunciation. More studies are needed that deal specifically with pronunciation and these areas in order to provide a better understanding. For example, researchers might investigate to what extent noticing affects pronunciation. How many opportunities for noticing are necessary before it has an impact on a learner's pronunciation? Researchers might also investigate the native speaker reformulation aspect of pronunciation. Would having a variety of native speaker models increase or decrease the effectiveness of the technique? In addition, would doing more reformulations of spontaneous speech increase or decrease the effectiveness of the technique?

More studies are also needed that investigate the effectiveness of specific pronunciation techniques. While there are studies that investigate intelligibility, comprehensibility and accentedness in pronunciation (Munro & Derwing, 1995, 2003, 2005), there are limited studies providing information about specific techniques for learning pronunciation. Since pronunciation is such an integral part of oral communication (Pennington & Richards, 1986), instructors need to be provided with more research on which techniques are the most and least effective. For example, research could investigate whether the Noticing-Reformulation technique is more effective than another pronunciation technique. Instructors could benefit from this information in order to plan a more effective pronunciation curriculum.

My Future Teaching

Throughout the process of completing this capstone, I have learned many things that will have an impact on my future teaching with second language learners. This capstone allowed me to see the benefits of completing research that could be used for the classroom. I began this capstone by posing questions that I wanted to investigate further. As a teacher, I wanted to investigate something practical that I could use with my own students. This research allowed me to see the importance of posing a question, further investigating it and testing it in order to see if it would have benefits for my particular setting. This type of practice is something that I will continue doing in the future. I feel it is important to continually question and evaluate current practices in teaching because there is always room for improvement.

This research also allowed me to see the importance of involving students in their own learning and providing them with regular opportunities for input. The student in my study had a goal to improve her pronunciation upon first arriving to this country. As I learned more about specific areas that she wanted to improve, I was able to implement those features into the technique that I used with her in the study. Had I not listened to her input at the outset of this study, the results may have been quite different. Also, as the technique progressed each week, I was able to give the student an opportunity to reflect on her learning. I could use this type of input in the future to help guide my instruction. I learned that it is important to involve each student to meet individual needs and styles of learning.

I will use more noticing and reformulation tasks in my classroom in the future and will encourage other language teachers to do the same. I was able to see some positive results with this study in pronunciation. I will find opportunities to share these results with those professionals in the second language field by presenting the information at conferences, such as TESOL or ACTFL or at the Southwest Minnesota Teaching and Learning Conference, with local area teachers. I believe that noticing and reformulation do have an important role in second language learning.

APPENDIX A

Spontaneous Speech

Part I

Directions: Give a short 2-3 minute speech telling about your first day arriving in Minnesota as a foreign exchange student. Try to describe the most important details.

Part II

Directions: Ask your instructor 20 yes/no questions in order to try and guess what she has a picture of.

APPENDIX B

Discrete Item Pre/Post Test

Pre/Post TestPart I

Directions: Listen and circle the word you hear.

1. version virgin

2. lesion legion

3. pledger pleasure

4. visual vigil

5. Asians agents

6. hid heed

7. feel fill

8. beadbid

9. pitchpeach

10. skid skied

11. the light delight

12. detest the test

13. the part depart

14. there dare

15. breathe breed

Part II

Directions: Listen and identify each of the following as a question or statement.

1. He's a very good tennis player question/statement
2. We're having a test next week question/statement
3. They just had a baby question/statement
4. She's pregnant question/statement
5. His sister's a famous dancer question/statement
6. He's related to the President question/statement
7. She jogs five miles a day question/statement
8. They got divorced question/statement
9. My car is wrecked question/statement
10. The iron was left on question/statement

Part III

Directions: Circle the phonetic symbol for the underlined sound. Then your teacher will record you as you read the words aloud.

1. measure /ʒ/ /dʒ/

2. major /ʒ/ /dʒ/

3. message /ʒ/ /dʒ/

4. individual /ʒ/ /dʒ/

5. visual /ʒ/ /dʒ/

6. these /iy/ /I/

- | | | |
|-------------------|------|-----|
| 7. <u>beat</u> | /iɪ/ | /l/ |
| 8. <u>this</u> | /iɪ/ | /l/ |
| 9. <u>women</u> | /iɪ/ | /l/ |
| 10. <u>living</u> | /iɪ/ | /l/ |
| 11. <u>there</u> | /ð/ | /d/ |
| 12. <u>dare</u> | /ð/ | /d/ |
| 13. <u>then</u> | /ð/ | /d/ |
| 14. <u>clothe</u> | /ð/ | /d/ |
| 15. <u>wordy</u> | /ð/ | /d/ |

Part IV

Directions: Indicate with an arrow ↗↘ if your voice rises or falls at the end of each question. Then your teacher will record you reading the questions aloud.

1. He left already?
2. Monday is a holiday?
3. Are you sure you can pick me up?
4. Do you have the time?

5. Can I help you?
6. The shirt is clean?
7. Is the store open?
8. Did you set your alarm clock?
9. The book was good?
10. She's five years old?

APPENDIX C:**/I/ Text Readings**

Directions: Practice reading the assigned text aloud. Do not write on this copy. Your teacher will record you reading the assigned text when you are ready.

Text 1:

I have been so busy this week. On Monday I had to give a speech in English about key women in American literature. On Tuesday I had to babysit my neighbor's children. On Wednesday I had to rake and fill six bags full of leaves. On Thursday I had to complete a project for history. Today I had to pick up the groceries on my mom's list of at least 20 items. I can't wait to sit and do nothing tomorrow!

Text 2:

Mrs. Smith teaches children in the fifth grade. She is a pretty strict teacher who expects her students to work hard every minute of the day. At the start of the year, she asks her students to make a list of goals to accomplish by the end of the year. She carefully examines each student's list and regularly checks their progress. The students who succeed in accomplishing their goals get to swim in her pool on the last day of school. The students who don't succeed have to sit in their seats and do worksheets all day.

Text 3:

I am planning to travel to Europe this summer. I will visit England, France, Spain, Italy, Germany and Greece. It may become a bit exhausting to visit six countries in six weeks. I wish to see every major city in those countries, but I may have to pick just a few. I'm not rich, so I will have to work hard and live cheaply until then.

APPENDIX D

/dʒ/ Text Readings

Directions: Practice reading the assigned text aloud. Do not write on this copy. Your teacher will record you reading the assigned text when you are ready.

Text 1:

There's a terrible war raging in that region. It originally started in two neighboring villages over religious differences. It has gradually taken over the country. The situation is dangerous. Soldiers and refugees are gathering at the edge of the forest.

Text 2:

There is a bridge near the edge of the forest that leads to the capital. Many people were injured crossing the mountain range. Fortunately, there were only little ridges to cross over. They surged ahead despite the challenges. There's a shortage of food and medical supplies. If things don't change soon, individual lives will be at risk.

Text 3:

Major Johnson was in charge until he was injured. Sergeant Rogers is managing the army now. A special agent was sent in to try to arrange a cease fire but neither side will budge. The citizens are preparing for a long siege.

APPENDIX E

/ ð / Text Readings

Directions: Practice reading the assigned text aloud. Do not write on this copy. Your teacher will record you reading the assigned text when you are ready.

Text 1:

The mother, at the start of the day, wakes up and feeds her pups. Then, she takes them from the den down to the lake to bathe them. Then they go together with the daddy to find food in the meadow, although it's far away. There they spend the day feeding and breathing the fresh air. When dusk falls, they return to their den to get ready for another day.

Text 2:

The weather report is brought to you today by Northern Brand Clothing, where you will find no clothing you loathe. There will be a chance of snow this evening due to a cold front from the north although no accumulating snow is expected. Another front will be moving in early next week bringing higher temperatures. The southern part of the state should expect to see highs in the seventies.

Text 3:

I'd like to buy both this shirt and that one over there. I'd also like to buy either these jeans or those like my brother's. I really like jeans with leather! I can't decide whether I should buy them or not. It will cost one hundred dollars altogether.

APPENDIX F

Rising Intonation in Yes/No Questions

Directions: Practice reading the assigned text aloud. Do not write on this copy. Your teacher will record you reading the assigned text when you are ready.

Text 1:

Are you taking the bus?

You live in a dormitory?

Would you like some dessert?

He's going to France?

She's a vegetarian?

Do you have any money to buy that?

They have their drivers' licenses?

Is it open tomorrow?

Text 2:

Are you glad she can come?

You're sure you can pick me up?

Will classes begin next week?

She talked to you?

Do you mind giving me a ride?

Did you turn the T.V. off before you left?

The school has classes on Sunday?

Her presents are already wrapped?

Text 3:

Do you own a computer?

You will see him tomorrow?

Have you ever traveled to China?

You've studied English for five years?

You're going to drive your father's car?

Can you open the door?

Does the blue pen work?

Are there ten television sets in your house?

APPENDIX G

Analysis of Student Recording /l/ Text 1

Directions: Listen to the recording and answer the question about your pronunciation.

I have been so busy this week. On Monday I had to give a speech in English about key women in American literature. On Tuesday I had to babysit my neighbor's children. On Wednesday I had to rake and fill six bags full of leaves. On Thursday I had to complete a project for history. Today I had to pick up the groceries on my mom's list of at least 20 items. I can't wait to relax and go for a dip in my pool tomorrow!

Can you hear at least five words in your recording that have the same vowel sound? If yes, what are they?

APPENDIX H

Analysis of Native Recording /I/ Text 1

Directions: Listen to the recording and answer the questions about the native speaker pronunciation.

I have been so busy this week. On Monday I had to give a speech in English about key women in American literature. On Tuesday I had to babysit my neighbor's children. On Wednesday I had to rake and fill six bags full of leaves. On Thursday I had to complete a project for history. Today I had to pick up the groceries on my mom's list of at least 20 items. I can't wait to relax and go for a dip in my pool tomorrow!

Can you hear at least five words in the recording that have the same vowel sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX I

Analysis of Student Recording /I/ Text 2

Directions: Listen to the recording and answer the question about your pronunciation.

Mrs. Smith teaches children in the fifth grade. She is a pretty strict teacher who expects her students to work hard every minute of the day. At the start of the year, she asks her students to

make a list of goals to accomplish by the end of the year. She carefully examines each student's list and regularly checks their progress. The students who succeed in accomplishing their goals get to swim in her pool on the last day of school. The students who don't succeed have to sit in their seats and do worksheets all day.

Can you hear at least five words with the same vowel sound in your recording? If yes, what are they?

Analysis of Native Recording /l/ Text 2

Directions: Listen to the recording and answer the questions about the native speaker pronunciation.

Mrs. Smith teaches children in the fifth grade. She is a pretty strict teacher who expects her students to work hard every minute of the day. At the start of the year, she asks her students to make a list of goals to accomplish by the end of the year. She carefully examines each student's list and regularly checks their progress. The students who succeed in accomplishing their goals get to swim in her pool on the last day of school. The students who don't succeed have to sit in their seats and do worksheets all day.

Can you hear at least five words in the recording that have the same vowel sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX K

Analysis of Student Recording /I/ Text 3

Directions: Listen to the recording and answer the questions about your pronunciation.

I am planning to travel to Europe this summer. I will visit England, France, Spain, Italy, Germany and Greece. It may become a bit exhausting to visit six countries in six weeks. I wish to see every major city in those countries, but I may have to pick just a few. I'm not rich, so I will have to work hard and live cheaply until then.

Can you hear at least five words with the same vowel sound in your recording? If

yes, what are they?

APPENDIX L

Analysis of Native Recording /l/ Text 3

Directions: Listen to the recording and answer the questions about the native speaker pronunciation.

I am planning to travel to Europe this summer. I will visit England, France, Spain, Italy, Germany and Greece. It may become a bit exhausting to visit six countries in six weeks. I wish to see every major city in those countries, but I may have to pick just a few. I'm not rich, so I will have to work hard and live cheaply until then.

Can you hear at least five words in the recording that have the same vowel sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX M

Analysis of Student Recording /dʒ/Text 1

Directions: Listen to the recording and answer the questions about your pronunciation.

There's a terrible war raging in that region. It originally started in two neighboring villages over religious differences. It has gradually taken over the country. The situation is dangerous. Soldiers and refugees are gathering at the edge of the forest.

Can you hear at least five words that have the same consonant sound in your recording? If yes, what are they?

APPENDIX N

Analysis of Native Recording /dʒ/Text 1

Directions: Listen to the recording and answer the questions about the native speaker pronunciation.

There's a terrible war raging in that region. It originally started in two neighboring villages over religious differences. It has gradually taken over the country. The situation is dangerous. Soldiers and refugees are gathering at the edge of the forest.

Can you hear at least five words in the recording that have the same consonant sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX O

Analysis of Student Recording /dʒ/Text 2

Directions: Listen to the recording and answer the questions about your pronunciation.

There is a bridge near the edge of the forest that leads to the capital. Many people were injured crossing the mountain range. Fortunately, there were only little ridges to cross over. They surged ahead despite the challenges. There's a shortage of food and medical supplies. If things don't change soon, individual lives will be at risk.

Can you hear at least five words that have the same consonant sound in your recording? If yes, what are they?

APPENDIX P

Analysis of Native Recording /dʒ/Text 2

Directions: Listen to the recording and answer the question about the native speaker pronunciation.

There is a bridge near the edge of the forest that leads to the capital. Many people were injured crossing the mountain range. Fortunately, there were only little ridges to cross over. They surged ahead despite the challenges. There's a shortage of food and medical supplies. If things don't change soon, individual lives will be at risk.

Can you hear at least five words in the recording that have the same consonant sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX Q

Analysis of Student Recording /dʒ/Text 3

Directions: Listen to the recording and answer the questions about your pronunciation.

Major Johnson was in charge until he was injured. Sergeant Rogers is managing the army now. A special agent was sent in to try to arrange a cease fire but neither side will budge. The citizens are preparing for a long siege.

Can you hear at least five words that have the same consonant sound in your recording? If yes, what are they?

APPENDIX R

Analysis of Native Recording /dʒ/Text 3

Directions: Listen to the recording and answer the question about the native speaker pronunciation.

Major Johnson was in charge until he was injured. Sergeant Rogers is managing the army now. A special agent was sent in to try to arrange a cease fire but neither side will budge. The citizens are preparing for a long siege.

Can you hear at least five words in the recording that have the same consonant sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX S

Analysis of Student Recording /ð/ Text 1

Directions: Complete the following questions about your pronunciation in the recording.

The mother, at the start of the day, wakes up and feeds her pups. Then, she takes them from the den down to the lake to bathe them. Then they go together with the daddy to find food in the meadow, although it's far away. There they spend the day feeding and breathing the fresh air. When dusk falls, they return to their den to get ready for another day.

Can you hear at least five words that have the same consonant sound in your recording? If yes, what are they?

APPENDIX T

Analysis of Native Recording /ð/ Text 1

Directions: Complete the following questions about the native speaker pronunciation in the recording.

The mother, at the start of the day, wakes up and feeds her pups. Then, she takes them from the den down to the lake to bathe them. Then they go together with the daddy to find food in the meadow, although it's far away. There they spend the day feeding and breathing the fresh air. When dusk falls, they return to their den to get ready for another day.

Can you hear at least five words in the recording that have the same consonant sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX U

Analysis of Student Recording /ð/ Text 2

Directions: Complete the following questions about your pronunciation in the recording.

The weather report is brought to you today by Northern Brand Clothing, where you will find no clothing you loathe. There will be a chance of snow this evening due to a cold front from the north

although no accumulating snow is expected. Another front will be moving in early next week bringing higher temperatures. The southern part of the state should expect to see highs in the seventies.

Can you hear at least five different words that have the same consonant sound in your recording? If yes, what are they?

APPENDIX V

Analysis of Native Recording /ð/ Text 2

Directions: Complete the following questions about the native speaker pronunciation in the recording.

The weather report is brought to you today by Northern Brand Clothing, where you will find no clothing you loathe. There will be a chance of snow this evening due to a cold front from the north although no accumulating snow is expected. Another front will be moving in early next week bringing higher temperatures. The southern part of the state should expect to see highs in the seventies.

Can you hear at least five words in the recording that have the same consonant sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX W

Analysis of Student Recording /ð/ Text 3

Directions: Complete the following questions about your pronunciation in the recording.

I'd like to buy both this shirt and that one over there. I'd also like to buy either these jeans or those like my brother's. I really like jeans with leather! I can't decide whether I should buy them or not. It will cost one hundred dollars altogether.

Can you hear at least five different words that have the same consonant sound in your recording? If yes, what are they?

APPENDIX X

Analysis of Native Recording /ð/ Text 3

Directions: Complete the following questions about the native speaker pronunciation in the recording.

I'd like to buy both this shirt and that one over there. I'd also like to buy either these jeans or those like my brother's. I really like jeans with leather! I can't decide whether I should buy them or not. It will cost one hundred dollars altogether.

Can you hear at least five words in the recording that have the same consonant sound? If yes, what are they?

Did you notice a difference in the speaker's pronunciation and yours? If yes, what specifically did you notice that was different?

APPENDIX Y

Analysis of Student Recording Rising Intonation in Yes/No Questions Text 1

Directions: Listen to your recording and then draw an arrow ↘ or ↗ on the words in each question to indicate the rise or fall you make with your intonation.

Are you taking the bus?

You live in a dormitory?

Would you like some dessert?

He's going to France?

She's a vegetarian?

Do you have any money to buy that?

They have their drivers' licenses?

Is it open tomorrow?

APPENDIX Z

Analysis of Native Recording Rising Intonation in Yes/No Questions Text 1

Directions: Listen to the native speaker recording and then draw an arrow ↘ or ↗ on the words in each question to indicate the rise or fall the speaker makes with her intonation. Also, answer the question at the bottom of the page.

Are you taking the bus?

You live in a dormitory?

Would you like some dessert?

He's going to France?

She's a vegetarian?

Do you have any money to buy that?

They have their drivers' licenses?

Is it open tomorrow?

Do you notice a difference in the speaker's intonation and yours? If yes, what specifically do you notice?

APPENDIX AA

Analysis of Student Recording Rising Intonation in Yes/No Questions Text 2

Directions: Listen to your recording and then draw an arrow ↘ or ↗ on the words in each question to indicate the rise or fall you make with your intonation.

Are you glad she can come?

You're sure you can pick me up?

Will classes begin next week?

She talked to you?

Do you mind giving me a ride?

Did you turn the T.V. off before you left?

The school has classes on Sunday?

Her presents are already wrapped?

APPENDIX BB

Analysis of Native Recording Rising Intonation in Yes/No Questions Text 2

Directions: Listen to the native speaker recording and then draw an arrow ↘ or ↗ on the words in each question to indicate the rise or fall the speaker makes with her intonation. Also, answer the question at the bottom of the page.

Are you glad she can come?

You're sure you can pick me up?

Will classes begin next week?

She talked to you?

Do you mind giving me a ride?

Did you turn the T.V. off before you left?

The school has classes on Sunday?

Her presents are already wrapped?

Do you notice a difference in the speaker's intonation and yours? If yes, what specifically do you notice?

APPENDIX CC

Analysis of Student Recording Rising Intonation in Yes/No Questions Text 3

Directions: Listen to your recording and then draw an arrow ↘ or ↗ on the words in each question to indicate the rise or fall you make with your intonation.

Do you own a computer?

You will see him tomorrow?

Have you ever traveled to China?

You've studied English for five years?

You're going to drive your father's car?

Can you open the door?

Does the blue pen work?

Are there ten television sets in your house?

APPENDIX DD

Analysis of Native Recording Rising Intonation in Yes/No Questions Text 3

Directions: Listen to the native speaker recording and then draw an arrow ↘ or ↗ on the words in each question to indicate the rise or fall the speaker makes with her intonation. Also, answer the question at the bottom of the page.

Do you own a computer?

You will see him tomorrow?

Have you ever traveled to China?

You've studied English for five years?

You're going to drive your father's car?

Can you open the door?

Does the blue pen work?

Are there ten television sets in your house?

Do you notice a difference in the speaker's intonation and yours? If yes, what specifically do you notice?

APPENDIX EE

Student Reflection

Reflection Week # __

Directions: Reflect on your first and second recordings during this week. Comment on any improvements made and/or any continued errors. Also comment on what features you noticed this week.

APPENDIX FF

Student Questionnaire

Directions: Complete the questions below as completely as possible.

1. Do you feel your pronunciation has improved? If yes, how has it improved?

2. What specific things did you notice about your pronunciation compared to that of a native speaker through the use of this technique?

3. Which parts of the technique did you find most useful?

4. Will you continue to use this technique? Why or why not?

5. On a scale of 1-5, how would you rate your pronunciation before the use of this technique? (1 being lowest and 5 being highest)

1 2 3 4 5

6. On a scale of 1-5, how would you rate your pronunciation after the use of this technique? (1 being lowest and 5 being highest)

1 2 3 4 5

7. On a scale of 1-5, how would you rate your confidence in being able to notice and compare your pronunciation with that of a native speaker? (1 not at all confident and 5 extremely confident)

1 2 3 4 5

APPENDIX GG

Pronunciation Tally Sheet Pre/Post Recordings

Accented Pronunciation Tally Sheet

	First Recording	Second Recording
	(Before technique)	(After technique)
/V/		
Text 1		
Text 2		
Text 3		

Spontaneous speech

Total

/ð/

Text 1

Text 2

Text 3

Spontaneous speech

Total

/dʒ/

Text 1

Text 2

Text 3

Spontaneous speech

Total

Incorrect intonation in
questions

Text 1

Text 2

Text 3

Spontaneous speech

Total

APPENDIX HH

Paired T-Test Results

Discrete Item Pre/Post Tests

The results of a paired t-test performed at 11:17 on 12-AUG-2008

t= 3.00 degrees of freedom = 3

The probability of this result, assuming the null hypothesis, is 0.058

Group A: Number of items= 4

1.0 3.00 5.00 6.00

Mean= 3.75 95% confidence interval for Mean: 0.2222 thru 7.278

Standard Deviation = 2.22 Hi = 6.00 Low = 1.00 Median = 4.00

Average Absolute Deviation from Median = 1.75

Group B: Number of items = 4

0.0 0.00 2.00 4.00

Mean = 1.50 95% confidence interval for Mean: -1.547 thru 4.547

Standard Deviation = 1.91 Hi = 4.00 Low = 0.00 Median = 1.00

Average Absolute Deviation from Median = 1.50

Group A-B: Number of items = 4

1.0 1.00 3.00 4.00

Mean = 2.25 95% confidence interval for Mean: -0.1365 thru 4.636

Standard Deviation = 1.50 Hi = 4.00 Low = 1.00 Median = 2.00

Average Absolute Deviation from Median = 1.25

Pre/Post Recordings of Text Readings and Spontaneous Speech

The results of a paired t-test performed at 11:14 on 12-AUG-2008

t= 10.2 degrees of freedom = 3

The probability of this result, assuming the null hypothesis, is 0.002

Group A: Number of items = 4

14.0 14.0 17.0 19.0

Mean =16.0 95% confidence interval for Mean: 12.10 thru 19.90

Standard Deviation = 2.45 Hi = 19.0 Low = 14.0 Median = 15.5

Average Absolute Deviation from Median = 2.00

Group B: Number of items = 4

3.0 4.00 5.00 8.00

Mean = 5.00 95% confidence interval for Mean: 1.563 thru 8.437

Standard Deviation = 2.16 Hi = 8.00 Low = 3.00 Median = 4.50

Average Absolute Deviation from Median = 1.50

Group A-B: Number of items = 4

9.0 10.0 11.0 14.0

Mean = 11.0 95% confidence interval for Mean: 7.563 thru 14.44

Standard Deviation = 2.16 Hi = 14.0 Low = 9.00 Median = 10.5

Average Absolute Deviation from Median = 1.50

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