The Effectiveness of Computer-Enhanced Shadowing and Tracking Pronunciation Exercises for Intermediate Level Foreign Language Learners

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The Effectiveness of Computer-Enhanced Shadowing and Tracking Pronunciation
Exercises for Intermediate Level Foreign Language Learners

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A thesis submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Master of Arts

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December 2014

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ABSTRACT

The Effectiveness of Computer-Enhanced Shadowing and Tracking Pronunciation Exercises for Intermediate Level Foreign Language Learners

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This study examines the effectiveness of on-line video-assisted pronunciation exercises in beginning level classes of foreign-language learning. A review of the current literature on pronunciation is presented, followed by a description of a study used to test the effectiveness of computer-based exercises in improving pronunciation. The participants were a group of high school students that were members of a fourth year French class. As part of their regular class time, the students participated in two types of exercises, in-class group work and computer-lab self-directed exercises, in which the students watched videos with subtitles while repeating what they heard. Satisfaction with the program was determined by collecting feedback from the students using qualitative and quantitative surveys. The students found the videos interesting and appreciated the learning autonomy provided by the self-directed exercises. Improvement was assessed by comparing performance on pre- and post-tests measuring both free response and reading pronunciation. Significant improvements were observed in both categories, but the improvements in reading pronunciation were most striking. The results demonstrate that computer-based exercises can be engaging and effective in teaching French pronunciation, and can be readily incorporated into the high school classroom.

Keywords: communicative approach, pronunciation, computer-assisted language instruction, early foreign language learners
ACKNOWLEDGEMENT

This thesis is dedicated to my family who has always encouraged me to better myself, my parents who have always been a great support and have encouraged me to never give up, our children who have also made this possible through their daily help during these busy times, and finally to my loving husband who constantly enlightened me with his wisdom and insight, seeing the end when I could not.

I express my gratitude to Dr. Martinsen, and my committee members, Dr. Montgomery and Dr. Bush, for their help and ideas with this study and for guiding me with their expertise. I also would like to express my thanks to the Waterford School and my colleagues there for making this study possible, for providing the various facilities, and for the students who were willing to actively participate in this research.
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Chapter 1  Introduction

In the global world in which we live, communication between nations is frequent and the mastery of various languages is becoming more and more important in the political and socio-economic arena. It is therefore essential that this generation be prepared with sophisticated language capabilities. As the prospective young and naïve learners of a foreign language start in this new endeavor, they envision themselves communicating effortlessly (Derwing and Rossiter, 2002) in an ideal setting where everyone understands them as they use their newly acquired language, rapidly reaping the benefits this new achievement will offer. However, as they continue in this journey, they quickly realize they cannot easily attain communication success without competent teachers coaching them step by step through this treacherous process. These ‘language guides’ need to have the necessary skills themselves to refine their students’ verbal abilities (Morley, 1991; Elliott, 1995; Fraser, 2000; Morin, 2002; Kosa da Silva, 2012). Good pronunciation is the key to comprehensibility and will be essential to the learners’ success (Morley, 1991; Celce-Murcia, Brinton and Goodwin, 1996; Gilakjani, 2012).

At the beginning stages of learning a foreign language, verbal accuracy leading to comprehensibility by others (Morley, 1994; Harlow and Muyskens, 1994) is very encouraging (Pei-Hsuan and Schallert, 2008; Derwing, 2010). In these early phases, students usually feel inspired when they can verbally communicate with others in short, common sentences in the target language (Morin, 2007; Pei-Hsuan and Schallert, 2008). It is common to hear beginning level learners display their new vocabulary through ‘cliché’ phrases repeated with little conception of what they really mean. This excitement of being understood is one reason why accurate pronunciation plays an important role in foreign language learning in the classroom. The learning experience is greatly enriched when students are understood by their teachers and
their classmates (Morley, 1991; Munro & Derwing, 2011). Unfortunately, there has been an overall neglect in the area of foreign language pronunciation instruction in the communicative classroom (Elliott, 1995; Fraser, 2000; Morin, 2002; Morin, 2007; Derwing, 2010; Kosa da Silva, 2012). Furthermore, as Morley (1994) expresses, for too long, ESL conservative wisdom has sustained that pronunciation is insignificant, students will eventually self-acquire it, it cannot be taught, and teachers, whether willing or not, do not have the grounding to teach it. This neglect has directly affected teachers’ preparation to address pronunciation in the classroom. To a degree, the problems with program standards could be resolved at the university departmental level by requiring all people seeking certification in teaching a foreign language to pass an appropriate course in phonetics and phonology. Success with such an approach, however, could only reach future generations of foreign language teachers without really addressing the problem of lack of training among practicing foreign language instructors (Morin, 2007).

**Statement of the problem**

Often in the classroom, very little attention is paid to improving pronunciation (Elliott, 1995; Fraser, 2000; Morin, 2002; Morin, 2007; Derwing, 2010; Kosa da Silva, 2012). Correct pronunciation has not generally been emphasized even when performing a prepared skit or dialogue. As a result, students do not seem to perceive a need for accurate pronunciation (Derwing and Rossiter, 2002). It has been my experience as a high school foreign language teacher that sometimes the students’ pronunciation is so far from what it should be in that the words and sentences have completely lost their meanings, leaving me unable to even guess what was intended.

In order to find a solution to this problem, many foreign language teachers have tried over the years to conduct various phonetic exercises with their students in the classroom.
(Morin, 2007). However, if these tools are not interesting, the students will not use them, the exercises will be ineffective, and pronunciation will not improve (Pei-Hsuan and Schallert, 2008). Captivating exercises are crucial because they capture the students’ interest and help motivate them as they progress through the pronunciation acquisition process. This progress can be so very slight over time that it cannot always be detected, causing discouragement on both the students’ and the teacher’s part. To make matters worse, there is also a lack of incentive for teachers to better their skills and knowledge of methods to improve pronunciation, as well as a shortage of decent teaching materials (Morley, 1991; Morin, 2007; Derwing, 2010).

**Purpose of the study**

What is needed is a focused effort to improve pronunciation to at least a minimal level using effective tools so that the students can gain the satisfaction of communicating orally in another language and so the teachers can see the fruits of their instruction (Derwing, 2010). For this reason, I am conducting research into technologically engaging, foreign language, computer-assisted pronunciation exercises. I believe the students, through these innovative exercises, will respond in a positive manner to these technological methods and will improve their ability to communicate orally in the target language.

This review of literature examines the effectiveness of computer-assisted pronunciation exercises in honing oral communication skills in early foreign language learners. It begins with a practical view of pronunciation, followed by observations on the neglect of pronunciation training for novice foreign language learners who may lack awareness of their own verbal limitations. These topics are followed by an assessment of
what newer and more effective methods, including computer-assisted programs, have to offer in phonology improvement.

After the review of literature, a research plan for evaluating the effectiveness of computer-assisted programs in improving pronunciation skills will be administered, analyzed and interpreted.
Chapter 2  Teaching Pronunciation – A Literature Review

Views on teaching pronunciation

In defining his philosophy of pronunciation, Stevick stated in 1978 that: “Pronunciation is the primary medium through which we bring our use of language to the attention of other people” (p. 145). Today, the teaching of pronunciation is a widely deliberated subject in language instruction (Harlow & Muyskens, 1994; Kosa da Silva, 2012).

Regarding the pronunciation of a language, Kosa da Silva (2012) remarked:
Although we use physical features to produce speech, we do not focus on them when we listen or speak. The focus is always on what sounds represent, not how they are produced, so that the listener can find the significance of the utterance and the speaker is able to send out a meaningful message. This process of producing and perceiving intelligible speech becomes harder when learning a FL/SL due to the differences in sounds between the mother-tongue and the target language. (p. 2)

Stevick (1978) also emphasized that the teaching of pronunciation usually included choosing, presenting, drilling and correcting the sounds of the foreign language. This learning included neuromuscular and some cognitive action, but the teacher was predominant in its affective and social mechanisms (Elliott, 1995; Fraser, 2000; Morin, 2002; Kosa da Silva, 2012).

In fact, these affective and social mechanisms could be of great influence to the learners’ pronunciation. Stevick (1978) listed a few reasons why this was the case, stating: “People who have normal psychological equipment can mimic new sounds, and will do so, unless (A) they overlook something, or (B) they sound bad to themselves when they mimic well, or (C) they become anxious about the process of making the sound. … All too often, self-consciousness leads to tension, tension leads to poor performance, poor performance leads to frustration,
frustration leads to added tension, and so on around a downward spiral. Finally, a person who finds himself on a downward spiral like this in a pronunciation class is likely to become very anxious about knowing the physical details of how the sound is formed” (p. 146). The author went on to point out that this philosophy of pronunciation included mimicry and phonetic description, but it did not recognize that learning of pronunciation included a social engagement on the learner’s part and not simply a speech apparatus or thinking exercise.

More recently, in addition to Stevick, Gilakjani (2012) also mentioned the role pronunciation plays in foreign language learners’ general communicative competence. He referred to pronunciation as a crucial aspect of learning a foreign language as it can rapidly affect the learners’ communicative competence and performance. As he described, inadequate pronunciation skills can reduce learners’ self-confidence. Along with Stevick’s philosophy described above, Gilakjani (2012) mentioned that inadequate pronunciation can also deter social interactions, thus disrupting the speaker’s capacities. On the other hand, with the right preparation and integration, pronunciation can significantly provide support to the learner’s overall communicative ability. (Gilakjani, 2012)

Another study also emphasized the crucial need for pronunciation training when teaching ESL, and the repercussions this training, or lack thereof, could generate (Fraser, 2000). The author clearly shared her advocacy of effective pronunciation teaching which she believes engenders confidence with pronunciation. This confidence allows learners some interaction with native speakers, which is so crucial for their linguistic development. She also recognized that poor pronunciation can conceal suitable language skills, dooming learners to lesser rewards in their social, academic and work advancement (Fraser, 2000).
The Value of Teaching Pronunciation in the Classroom

Given the importance of pronunciation in the social engagement called communication, there should be a stronger emphasis on pronunciation instruction in the second language classroom (Elliott, 1995; Kosa da Silva, 2012), especially at the intermediate level where pronunciation has not received as much attention. Unfortunately, there have been significant gaps in the emphasis of the teaching of pronunciation in the last several years (Elliott, 1995; Fraser, 2000; Morin, 2002; Derwing, 2010; Kosa da Silva, 2012). As described in one of Elliott’s articles on foreign language phonology (1995), from the four basic language skills: listening, speaking, reading, and writing, the elaboration of correct pronunciation as a foreign language skill is overlooked in the classroom.

Another author also argued for stronger pronunciation instruction to reverse the neglect in this area (Morin, 2007). She additionally gave suggestions on pronunciation instruction, phonetics, and pedagogical resources. She mentioned helpful pedagogical materials made by graduate students in an applied Spanish phonetics class. These materials showed the possibility of engaging in pronunciation instruction at all levels of the university Spanish curriculum Morin concluded, stating that considerable research indicated that pronunciation instruction in the college-level foreign language classroom was being consistently disregarded, causing direct repercussions in the teachers’ preparation for their students’ oral assessments. This disregard is even more apparent at the secondary education level (Morin, 2007).

One way to respond to pronunciation standards at the college level, according to Morin (2007), would be to require a course in phonetics and phonology for all students who aimed for a certification in a foreign language. Such standards would be a valuable step toward proper pronunciation preparation. Regrettably, colleges don’t often require coursework in that area and
the students who leave those programs and teach in K-12 settings are often unable to teach pronunciation effectively. Consequently, the students have little opportunity to acquire adequate pronunciation skills.

In support of this stance, Harlow & Muyskens (1994) also emphasized the direct need to improve college level FL (foreign language) instruction. The purpose of their research was to determine through a survey, the priority goals and objectives of intermediate level students and instructors. The various goals such as speaking, improving self-confidence, vocabulary, writing, and translating included pronunciation, which was ranked a high fifth out of fourteen goals of overall student priority, showing a high interest in speaking and pronouncing correctly. The students also showed that their worry regarding pronunciation was linked to insecurity about how they sound to other people (Elliott, 1995; Fraser, 2000; Morin, 2002; Kosa da Silva, 2012). On the other hand, the instructor survey revealed a dissimilar low rating of tenth in importance on the survey, reflecting the low priority in typical curricula to which pronunciation is limited to first and third year instruction. The authors’ primary concern was of the lack of emphasis on pronunciation within the intermediate FL levels in university courses. Students in these courses come from different backgrounds such as high school, first-year university courses or even non-traditional situations, including returning to school after a leave or living abroad. These intermediate ‘triaged’ learners are usually collectively placed into intermediate level classes. As noted above, pronunciation instruction is generally emphasized in typical first-year textbooks and FL curricula and is also refined in third year phonetics courses, but the second year of FL instruction lacks the necessary attention and receives minimum treatment with pronunciation exercises. This second year level essentially consists of a brief review of pronunciation exercises that are insufficient to show unified progress (Harlow & Muyskens, 1994; Elliott, 1994). Harlow
and Muyskens (1994) also reported the most effective in- and out-of-class activities and proposed several designs regarding the development of the intermediate curriculum including better instructor preparation.

Comparable overall issues generated from the lack of effectiveness with pronunciation instruction were also recognized (Frazer, 2000). Some of these are a matter of insufficiently documented distinction between native (or highly proficient) speakers and learners with poor target language skills and between literacy needs and oral communication needs, a widespread lack of confidence (Stevick, 1978; Gilakjani, 2012), a lack of effectiveness among language teachers in teaching pronunciation, and a lack of reliable research on pronunciation instruction (Fraser, 2000).

Frazer also suggested similar recommendations regarding oral communication needs. These recommendations include encouraging crucial interaction between native and non-native speakers, increasing scholarly research on pronunciation and developing better assessment tools to measure learners’ proficiency in pronunciation. She also suggested, as Kosa da Silva (2012) did later, that teachers need to be provided with high quality, effective materials, especially computer-based materials with audio demonstrations for learners of FL pronunciation (which today, would transfer to video material as well). These materials should be available both for self-access and for use in classes where the teacher needs support of this kind (Fraser, 2000; Kosa da Silva, 2012).

Elliott (1995) contributed to this dialogue with his study on the success of formal instruction in FL pronunciation (in this case Spanish) where he shared the benefits of supplementing an intermediate FL (Spanish) course with formal multimodal methodology in pronunciation instruction. The author concluded the article with a classroom model of
pronunciation instruction designed to help instructors incorporate this multimodal method into other second language curricula. This method included individualized instruction according to the students’ personal needs, and it contained activities appealing to individual learning style and preferences (aurally, orally, and visually) to providing students with a lot of practice exercises enriched with feedback to prevent phonological fossilization.

As Kosa da Silva, (2012) concluded on pronunciation instruction:

There are still controversial points of view regarding pronunciation teaching. A reading of this list suggests that teachers make little or no difference in improving their students’ pronunciation. In contrast, some research indicates that the teacher can make a noticeable difference if certain criteria, such as linking pronunciation with listening practice, are fulfilled (p.3).

From these studies, it appears that focused efforts to teach pronunciation with effective tools can make a difference in improving students’ oral communication skills

**Importance of Foreign Language Learners’ Perceptions of Their Pronunciation Needs**

An additional way to increase pronunciation abilities would be to heighten students’ awareness of their own communication needs (Morley, 1994; Kosa da Silva, 2012). This awareness could motivate them to improve (Harlow & Muyskens, 1994). Disappointingly, too many learners are oblivious to their comprehensibility to natives of that language (Derwing and Rossiter, 2002; Fraser, 2000; Munro & Derwing, 2011). Derwing and Rossiter (2002) pointed out that previous researchers had not paid much attention to the foreign language learners’ own insights of their pronunciation needs.

Their study investigated the perception of 10 adult immigrants in Canada who were interviewed on their own pronunciation difficulties, their control over their foreign accents, as
well as the strategic ways they overcame these difficulties when experiencing communication failure. Most of the pronunciation problems were at the word and phrase level, which they attempted to rectify by paraphrasing, repeating, adjusting the volume of the phrases, or finally resorting to writing or spelling what had not been understood (Derwing and Rossiter, 2002).

Even though the researchers and educators had asked for a greater emphasis on teaching pronunciation with a focus on prosodic elements, the responses of the foreign language learners’ led to the conclusion that these learners were either not being taught pronunciation, or if they were, they were not gaining much. The authors mentioned that the possible reason for this issue was the lack of teachers in Canada who had received training in teaching pronunciation. Furthermore, it was complicated and discouraging to teach L2 pronunciation lessons to learners of various L1 backgrounds. The ideal way of helping with pronunciation, according to Derwing and Rossiter (2002), would be to have competent instructors teach it, but if the instructors could not, then at least they could have helped the learners to identify ways to help themselves be understood, with paraphrasing as favorite alternative.

In the qualitative interviews the instructors conducted, the learners mentioned that most of the communication breakdowns were due to the inaccuracy in pronunciation as well as foreign accent (Derwing and Rossiter, 2002). This finding emphasizes the fact that inaccurate pronunciation is a chief factor in language communication breakdown. Combining this fact with the observation that many instructors were ill prepared or lacked the class time to teach pronunciation leads to the conclusion that better instructor-independent tools are needed to bridge the pronunciation gap. Given the instructional potential of modern computers, it seems logical to turn to computer-assisted methods to find potentially useful tools to improve
pronunciation skills. Thus, an assessment of the current state of computer-based pronunciation methods was performed.

**Technology in teaching foreign language pronunciation**

With the development of digital technologies in the nineties and on its use in education, teachers reacted somewhat with dread as they were introduced to this new way of teaching. This factor created an understandable ‘technophobia’ among language teachers (Lam, 2000). Some of these issues were considered in Lam’s study on institutions’ ‘technophilia’ vs. foreign language instructors’ Technophobia. The author conducted various interviews on the reasons behind L2 teachers’ decisions to use technology including computer use in the classroom and what factors influenced these decisions. The study showed that the main reasons behind the teachers’ choices of technology use were connected to their personal conviction on whether technology use would generate advantages or drawbacks, rather than to a fear of technology itself (Lam, 2000). The author concluded that there is a clear difference of opinions about technology use between those who offer the technology and those who actually use it, and teachers were not really ‘technophobic’, but institutions showed a little too much ‘technophilia’ in the haste to acquire the latest innovations without taking the needs of students and teachers into account (Lamb, 2000).

Today, things have changed. Technology has become an integral part of education, and despite the teachers’ past reluctance in using technology in the classroom, it is evident that students are more digitally motivated. There is an increased pressure on the teachers to abandon their exclusive control of the classroom to adopt a more student-centered pedagogy (Blake, 2013). The use of the computer has lead to a new and revolutionized way to acquire and transmit knowledge and has significantly changed interactions between instructors and students, as well among the students themselves. As Kramsch mentioned in the foreword to Blake’s book (2013)
on technology and foreign language learning: “It is in fact ironic that it is the advent of the computer and its irreducible presence today in all walks of life that is compelling educators to change the way they deliver foreign language (FL) education, with or without the aid of computers. Those language teachers who, by cultural tradition or personal preference, did not implement the tenets of communicative language teaching in the 1980s, nor change their classroom practice to meet the goals of intercultural communication in the 1990s, are now confronted with a digital culture in which students expect to be placed at the center of their learning” (Blake, 2013; Foreword by Claire Kramsch, p. xi).

The advantages that computer technology could offer in foreign language pronunciation training were evident from early on. An initial study by Eskenazi (1999) explained how speech-interactive CALL (Computer-Assisted Language Learning) could assist teachers in implementing recommendations from immersion-based approaches to teach pronunciation. In this study, Eskenazi pointed out that the Carnegie Mellon University’s FLUENCY project demonstrated newer methods for coaching pronunciation by focusing on intonation and rhythm. Also, pilot experiments showed new ways of catching and correcting errors by removing the speech informative signal whenever learners deviated from native-like pronunciation. Eskenazi mentioned that computer use in language learning had been increasing considerably thanks to the rapid growth in computer capabilities in the 1990s. Some important questions remained to be answered. Had computer technology improved enough to successfully teach pronunciation and what factors that could be taught through a computer would bring success in target language pronunciation? (Eskenazi, 1999). Given the vast improvement in computer capabilities and resources over the past 15 years since this question was posed, it seems clear that computer-based media can provide a rich source of tools to teach pronunciation effectively.
Eskenazi (1999) went on to point out that the total immersion situation is ideal. Short of this, there were necessary conditions favoring efficient language learning. The learners heard a lot of the target language, heard a variety of native speakers, spoke a lot themselves, received relevant feedback, and were practicing within a significant context. Eskenazi (1999) also emphasized the fact that younger learners felt more comfortable in the language learning setting, making them less afraid to try pronouncing different sounds in the target language. In contrast, the older learners tended to shy away from this challenge in any social setting.

Eskenazi (1999) reiterated the importance of the teacher in the learners’ progress in pronunciation (Eskenazi, 1999), stating that effective instructors were sensitive to the learner’s internal comfort, bringing self-confidence and motivation, were correcting only when necessary (Munro & Derwing, 2011), recognized good pronunciation, and stayed away from negative feedback. Also, one-on-one teaching was ideal. The students could perform in front of the teacher alone until they were comfortable in front of the class. Practically, there was seldom time for these personal sittings, disadvantaging the shyer speakers. This is where speech-interactive, computer-assisted language learning (CALL) methods could assist. Eskenazi (1999) mentioned that the ideal CALL setting was when the students were able to feel safe in performing before the computer alone and providing regular progress reports to the teacher instead of before a classroom filled with potential “judges.”

Another reason why CALL was starting to be beneficial at the time was that computers continually had increased memory and storage. CALL could then offer users a choice of CD-ROMs, with high-quality sound and video clips of speakers, giving learners a chance to see articulatory movements used in producing new sounds. The teacher did not have to find or record native speakers. The teacher’s speech was supplemented with easily obtainable digitized speech
without additional cost, allowing access to particular examples of speech. Also, different speakers could be tested to find one “golden” voice that the learner would like to imitate. In the digital world, speakers’ voices could go faster or slower. Also, many speakers could repeat a particular sound many times (Eskenazi, 1999). However, there were limitations to the traditional Automatic Sound Recognition-based CALL (ASR). They could help learners produce many sounds on their own, but learners remained passive. Even if they were asked to give an answer to a question in a realistic setting, this was done in an imitating way or by reading some written choices. Learners were not given the challenge of creating their own sounds including their own choices of vocabulary and syntax. To address this issue, a new technique for extending the limitations of ASR-based CALL was developed. The technique was based on pronunciation of entire sentences, providing fast-moving, active practice. This method helped students gain some of the spontaneous reflexes for when they needed to perform in a real conversation (Eskenazi, 1999).

The author went on to conduct a pilot study entitled “ASR-Based Comparison of Native and Nonnative Speakers” where she recorded 10 native speakers (5 males, 5 females) and 20 speakers of other languages (one male and one female from each of the following L1s: French, German, Hebrew, Hindi, Italian, Korean, Mandarin, Portuguese, Russian, Spanish). Two Expert language teachers listened to the sentences recorded by each speaker to judge where there was an error, what it was, and how (and when) they would correct it (Eskenazi, 1999). At the end of the study, Eskenazi (1999) concluded that speech-interactive CALL had brought a variety of new unpredicted techniques in teaching pronunciation, due to increases in computer memory and storage, leading to better reproduction of L2 learning within total immersion settings. The emphasis in this study was on pronunciation and its competence, because below a certain level of
pronunciation competency, communication failed (Munro & Derwing, 2011), even with accurate grammar and vocabulary. Given the vastly superior computer resources (including those on line) since Eskenazi’s study, numerous CALL options are available. The sections that follow review additional studies exploring the effectiveness of computer-assisted pronunciation training with younger students.

Neri, Mich, Gerosa and Giuliani (2008) discussed the effectiveness of a computer-assisted pronunciation training (CAPT) system in helping young children develop their pronunciation. Various comparisons of improvement were measured between two groups of 11-year-old learners, one receiving teacher-assisted pronunciation instruction and another receiving computer-assisted pronunciation training (CAPT) using an automatic speech recognition component (Neri et al., 2008). They developed their own program called PARLING (Parla-Inglese Program), which was based on the TELL ME MORE program, with a focus on the pronunciation quality of isolated words and an automatic feedback component. The results of the study showed that the quality of the pronunciation of each word, whether simple and familiar or difficult and previously unknown, was improved for both groups (Neri et al., 2008). Thus, the authors demonstrated that the computer-assisted pronunciation training system could be comparable to more traditional teacher-assisted pronunciation training. The authors went on to argue that this type of autonomous technology could offer significant time-saving advantages in traditional contexts where teachers lack the time to assist with one-on-one pronunciation exercises. They stated: “This would free up time for the teacher, which could be employed to provide individual guidance on how to remedy specific pronunciation problems – something computers are not yet capable of doing in a reliable way. Another opportunity would be to provide customized CAPT for children who are lagging behind, thus offering them an additional,
engaging, and more private form of training” (2008, p. 405). The authors further noted that no empirical data had been previously collected on the actual pedagogical efficiency of these technological approaches for children. Unfortunately, in previous studies, the actual oral language development of the learners tended to be overlooked because of an emphasis on the technological aspect of these methods.

The authors pointed out a few limitations of this study, one being that pronunciation quality of isolated words only represents one feature of pronunciation skills. The authors chose this approach because it was the main focus of L2 training for Italian children of that age group. However, even though the children correctly imitated isolated words, this did not mean that they were able to correctly pronounce sentences. The authors realized that there should be further research at the sentence level. An additional concern not mentioned by the authors is that this study measured only the short-term effects with a small group of children. The research would need to be carried out for a longer period of time with more students in order to determine if there was really no difference in the pronunciation performance between the instructor-guided and the computer-assisted groups. Nevertheless, the results of this investigation have offered the first experimental evidence that CAPT training could be operational in helping children improve pronunciation skills.

Another recently implemented approach using technology in pronunciation training is the common podcasting method. (Podcasting is a combination of “iPod” and “broadcasting” led to the word “podcasting). In a research study on podcasting, Ducate and Lomicka (2009) explained that podcasts were easy-to-create audio-files that could be uploaded to the Internet where learners could subscribe (Ducate and Lomicka, 2009). They also agreed that, as a result of confusion about the position of pronunciation in the communicative classroom, foreign language
teachers had experienced difficulties in finding resources for practicing pronunciation with their students. Teachers had not seen the important function of pronunciation and sometimes were skipping its instruction to spend time on other concepts of the foreign language. The researchers mentioned that while there were many factors that affected pronunciation, such as age, individual differences, motivation, and instruction; teachers could focus on where they had control, meaning exposure and instruction. The researchers suggested how technology could be helpful in this situation. They demonstrated how podcasting could offer an alternative to practice speaking skills outside the classroom.

The authors reported on the relative improvement of pronunciation skills through the help of podcasting exercises in intermediate foreign language learning. The study also verified how students’ attitudes about pronunciation changed throughout the semester. The study included a total of 22 students in intermediate French and German courses who made five scripted pronunciation recordings over the semester. The students later created three extemporaneous podcasts and completed a pre-post survey based on Elliott’s 1995 Pronunciation Attitude Inventory to find out how they felt about pronunciation. The results were analyzed to see the changes during the semester. Data analysis showed that there was not much improvement in the students’ accent or comprehensibility over the probably too-short, 16-week period. Also, there was no in-class pronunciation training. The students, however, had a positive outlook on the podcast assignment as they appreciated the feedback they received for each script recorded. They also enjoyed the creative opportunity to create extemporaneous podcasts. According to the authors, future research could try to outline more precise guidelines or examine how the teacher could be more involved when arranging podcasts for classroom training (Ducate and Lomicka, 2009).
In another study, Tanner and Landon (2009) investigated the gains of CALL pronunciation training in suprasegmentals (stress, pitch and juncture patterns). They agreed that CALL was interesting to both teachers and learners because of the individualized nature of the exercises and the immediate feedback on the accuracy that learners could directly receive from the computer. They also determined that Computer-Aided Pronunciation (CAP) showed an increase in learners’ awareness of their own and others’ pronunciation performance, through visual displays with spectrographic analyses for each word or phrases (Tanner and Landon, 2009). However, this immediate feedback still required teachers’ supervision and interpretation.

Another observation the authors made confirmed earlier experimental research about the importance of prosodic structures in learners’ overall understanding and perception. If the stress was in the right place, the learners had an easier time to understand. If not, the learners’ ability to understand could be affected. Moreover, teaching intonation in context was also essential for refining speech comprehensibility as well as speaking skills. Pedagogically, they stated that other oral skills could increase learner’s use of sentence structures including mirroring, tracking and shadowing as well as imitating native speakers speech. Imitating conversation was an additional imitative technique where the ESL learners selected, analyzed, and replicated a short two-minute clip of dialogic speech from a movie or television show (Tanner and Landon, 2009).

Tanner and Landon (2009) went on to lament the fact that empirical research on the gains of these techniques had been gathered too slowly. They agreed that there were multiple experiments with these various techniques, but unfortunately, they felt that rigorous analysis of the benefits of these methods was lacking. Therefore, the authors decided to conduct an 11-week experimental study, with 75 ESL students split into control and segment groups. The treatment group had 11 weeks of self-directed, computer-assisted practice using Cued Pronunciation
Readings CPRs (Tanner and Landon, 2009). This research was a quasi-experimental design involving pre-tests and post-tests. The speech perception and production samples were collected first at Week one, then at Week eleven of the study. The effects of the treatment were analyzed in terms of proper word stress, pausing, and sentence-ending intonation summed as key suprasegmental structure and intelligibility. From this assessment, Tanner and Landon (2009) concluded that this exercise improved performance with significant gains ($p < .01$) in pausing and word stress as well as controlled production of stress in a statistically significant way despite the restricted time the learners spent with the self-practicing CPRs.

There were limitations and suggestions for future research in this study. First, the ESL program put time constraints on the study. Second, the learners’ observed that they were unable to receive adequate feedback from their teachers. Third, the varying levels of effort made by some of the students may have influenced the results. Finally, the study planned tasks that were too short in order to avoid learners’ fatigue. A longer passage with varied pitch direction would have added more data to assess participants’ perception and production of suprasegmentals (Tanner and Landon, 2009).

**Conclusion**

As stated by Stevick (1978): “Pronunciation is the primary medium through which we bring our use of language to the attention of other people” (p.145). Pronunciation facilitates the social engagement between individuals that is the ultimate step in communication in a second language. Despite this, most traditional language programs have de-emphasized the teaching of pronunciation (Morin, 2007). As a result, oral communication skills remain persistently poor for most foreign language learners (Munro & Derwing, 2011). What is needed is a renewed
awareness of the need for better pronunciation and a renewed emphasis on teaching pronunciation skills (Derwing and Rossiter, 2002).

Time and resources in the second language classroom are limited. Therefore, any renewed focus on pronunciation will require effective, time-saving tools. Such tools can be found in computer-assisted technology (Eskenazi, 1999; Blake, 2013). The current generation is very comfortable with a computer-based approach and these methods can be a highly attention-grabbing and an entertaining way to learn to speak in a foreign language (Neri et al., 2008, Blake, 2013). This said, not every computer-based approach is effective, and some of the earlier tools have already been surpassed by newer technologies. In fact, becoming outdated is a relentless worry for those who work in the CALL field (Tanner & Landon, 2009; Blake, 2013). Moreover, insufficient empirical data has been collected on the actual pedagogical efficacy of the various technological approaches (Tanner and Landon 2009). As a consequence, a research plan was developed to measure the effectiveness of computer-based pronunciation methods for secondary school students in the intermediate stages of second language acquisition in an effort to identify and measure appealing and effective technological approaches as they are implemented in the classroom. The next chapter describes in detail the approach that was implemented and the methods employed to measure its effectiveness.
Chapter 3 Research Design and Methods

Research Questions

The purpose of this study is to answer the following questions:

1) What changes do high school students experience in their pronunciation over the course of a term using computer-based shadowing and tracking exercises?

2) How did students choose to interact with the material to improve pronunciation?

Research Plan

This research explored the effectiveness of computer-assisted pronunciation methods, called tracking and shadowing. In tracking, students spoke along with a video in the target language, while in shadowing, students paused the video when needed and repeated what they had just heard. The study examined the students’ use of these methods and their efficacy in improving pronunciation accuracy.

Brief study description

The purpose of this action research study was to determine if this tracking and shadowing program would help high school students improve their pronunciation in French and become more aware of their own skill level (Morley, 1991; Celce-Murcia, Brinton and Goodwin, 1996; Derwing and Rossiter, 2002; Morin, 2007; Pei-Hsuan and Schallert, 2008; Gilakjani, 2012). This goal was accomplished through exposure to real-life video clips performed by native speakers. Over the course of one academic term (ten weeks), I conducted a study on the effects of computer-assisted tracking and shadowing exercises on student's pronunciation in French. I also noted how the students chose to interact with the materials to identify their preferences.
Participants

The participants were a group of 19 high school students that were members of an intermediate French class at a private school in Utah. The students consisted of a mix of twelve males and seven females all of whom (except one Chinese male) are native English speakers. The study was approved by the school administration and by the institutional review board of Brigham Young University.

Confidentiality

All of the information and data were saved in a password-protected, school computer and only the researcher had access to this information. All other identifying information, including the survey forms the participants filled out, were destroyed at the end of the study. The researcher was the only person to know the identity of each student when doing the pronunciation recordings. The participants were not named, but were represented by a number during data analysis and writing.

Methods

Pronunciation pre-test

The study began with a pre-test to assess the students’ current level of pronunciation. An audio recording lasting two minutes of each student was made during spontaneous descriptions in French of pictures. Another two-minute recording reading consisted of various texts and dialogues (see Appendix). The researcher received the school’s permission to perform the testing as part of the curriculum. The audio recordings of each student were each identified by a number and not by name to maintain confidentiality and to avoid any scoring bias.
In-class pronunciation exercises

As part of their regular class time, students participated in computer-assisted video tracking and shadowing exercises from Vista Higher Learning’s *D’accord!* (2014) program. Five- to ten-minute exercises were performed three times a week in which the students repeated aloud as a class from a projected French video-clip. The students watched and heard natives engaged in various dialogues in a typical cultural setting. These *D’accord!* (2014) videos were chosen because, in addition to the native actors and settings, students had access to accurate captions in English and French. The researcher controlled the viewing and only corrected general mistakes by the entire class due to speed or pronunciation difficulty.

Individual pronunciation exercises

The students additionally participated in a 20-minute session in the language lab once a week where they individually performed similar exercises at their own pace in front of a computer. These exercises consisted of watching a video from the BBC © (2014) program. While watching, the students simultaneously pronounced the words of the video (tracking) or repeated with a delay or even a self-implemented pause (shadowing) when needed because of speed or other complexities. During this exercise, the students were able to control the videos by stopping, starting, adding or deleting the various accessible subtitles in English or in French. In the lab, the students were also given the choice of which videos they watched in any given session. The students had a choice of how they performed these exercises and recorded their choice. These *Ma France* (2014) videos were chosen for their on line availability for the students to access and practice without the control of the researcher.

Pilot Program

To make an initial assessment of how the pronunciation exercises would work, we did an
in-class pilot test two weeks before the study began. This exercise quickly deteriorated as the majority of the students began shouting their sentences as if it helped their pronunciation. Moreover, the repeating aloud overwhelmed many as it created some sort of cacophony, comparable to an ill-conducted choir practice. The noise inhibited the weaker students from hearing the videos properly and concentrating on their own pronunciation. This problem was quickly resolved when everyone repeated in a much softer voice. It was clear from this pilot attempt that the pronunciation exercises were feasible as long as the students kept their voices down. Consequently, speaking with a soft voice was emphasized throughout the study.

**Surveys**

The students were asked to complete regular surveys and rate how often they looked at the subtitles (French and/or English as they chose), how often they felt the need to stop the video in order to repeat what was said (shadowing), how difficult it was to say what the speaker said, the speed of the video itself, whether it was too fast or whether they could manage, and how important it was for them to understand what was occurring in order to repeat (see Appendix B). They similarly were asked to separately rate the in-class, teacher-controlled exercises and the self-directed exercises as to how helpful they were, one being the least helpful and five being the most helpful. The students also added individual comments on what they liked or disliked about these activities, what features of this program helped them with pronunciation and why, and lastly, whether the French was at the right level for them and why. A total of six surveys were given over the 10-week period of the study. At the end of the training period, the students were also asked to give final general comments on their overall experience.
Pronunciation post-test

At the end of the study, the students took a second pronunciation test, using the same prompts as the pre-test for the spontaneous responses and the same texts in the reading pronunciation. The researcher analyzed the results of the tests to determine if these pronunciation-training exercises improved the student’s French pronunciation accuracy.

Analysis

The graders rated the pronunciation tests from one to five, with one being heavily accented with obvious interference from the speaker’s first language, and five being near native level of pronunciation with almost no interference. Each student’s pre- and post-tests were evaluated side-by-side, but the graders did not know whether the first recording was the pre-test or the post-test. The identity of the pre- and post-tests were not revealed until after the performance evaluations were completed, when all the results were converted and calculated.

The evaluators gave scores that were not only based on the general accent, word stress, certain vowel sounds, sentence stress and overall intonation, but also on specific sounds in order to have precise landmarks when evaluating at the word level. The sounds were based on some of the following observations from Lawless (2014). These sounds are very familiar to the graders, but some clarifications were still given on how each sound should be accurately pronounced.

The French R is awkward for a lot of English-speaking students. It is pronounced with the back of the tongue instead of rolling the tip of the tongue against the roof of the mouth.

The French vowels: Unlike the diphthongized vowels in the English language, the French vowels are pronounced further forward in mouth than their English counterparts.

The French U: The French U is another challenging sound, at least for English speakers, for two
reasons: it is hard to say and it is sometimes difficult for untrained ears to distinguish it from the French OU.

Nasal Vowels: Their pronunciation can be very different from the normal pronunciation of each vowel. Nasal vowel sounds are created by pushing air through the nose and mouth, rather than just the mouth like English speakers do for regular vowels.

Accents: “Accents aigus” over the vowel “e” modify the word pronunciation, giving it the phonetic pronunciation /e/.

Silent Letters: Many French letters are silent, and a lot of them are found at the end of words. However, not all final letters are silent.

The assessment only ranked the students’ pronunciation and not their language accuracy to attempt to separate pronunciation from grammar. The guide the judges tracked to assess the students’ speaking proficiency ranked as follows:

1 = Frequently interferes with communication. This level of pronunciation is characterized by a heavily accented speech with obvious interference from speaker’s first language. Difficult to understand even by a sympathetic listener. The student makes little or no effort to enunciate and articulate in the target language.

2 = Occasionally interferes with communication. This level of pronunciation is characterized by a less heavily accented speech, still with much interference from first language. Usually understood by a sympathetic listener.

3 = Does not interfere with communication. This level of pronunciation is characterized by a consistent use of sound system of target language even with errors. Speech continues to be influenced by first language. Understood without difficulty by a sympathetic listener.

4 = Enhances communication. This level of pronunciation is characterized by an accurate
pronunciation with little interference from first language. Readily understood by a sympathetic listener and usually understood by a native speaker. Speech is less influenced by first language and begins to contain elements of a native accent.

5 = Full communication to all. This level of pronunciation is characterized by a near-native level of pronunciation with almost no interference from first language.

The graders were trained using this scale so as to sustain inter-rater reliability. In an effort to better distinguish between the different levels of performance, the graders also gave plus and minus scores with each number to indicate that the pronunciation was below or above the numerical score. This created one-third fractional values that were cumbersome to use in calculations. To overcome this inconvenience, all the scores were multiplied by three to generate whole numbers. For example a 3 plus score, which corresponds to a value of 3.333, and a 4 minus score, which corresponds to a value of 3.667, were multiplied by three to give scaled scores of 10 and 11, respectively. Thus, the final scores ranged from 2 to 15. This scaling factor had no effect on the results, but made the data analysis simpler.

The scores from each of the three judges for both the pre- and post-tests were averaged for each student and these values were combined to give an overall average for the entire class. A t-test was performed to determine the statistical significance of the differences between the pre- and post-tests and p-values from the t-test were reported. Moreover, the students were subdivided according to their pre-test scores into three groups (high – 7 students, medium – 7 students, and low-performing – 5 students). These divisions were made based on 5 students who scored significantly lower than the rest in the pre-test and were designated as the low-performing group. The other 14 students were divided equally based on the pre-test, with the 7 highest scores in the high-performing group and the next 7 in the medium-performing group. Average
scores and statistical significance were also calculated for each of these subgroups in an effort to determine the effectiveness of the program for students at different pronunciation competencies.

In addition to the quantitative evaluation of the test performance, a quantitative evaluation of the students’ surveys was also performed. For each of the eight surveys, the numerical rankings from each student were averaged for each question to give a class average. *t*-tests were performed between the first and the last survey to determine if a statistically significant change in students’ perception had occurred over the course of the program.

The free response comments at the beginning and the end of the program were also used to assess students’ perception and to determine if that perception had evolved. Each comment was categorized into positive, neutral or negative views and the specific content of each comment was analyzed to detect specific themes. Finally, the researcher made observations throughout the course of the program to record her perception of how the study was progressing.
Chapter 4  Results

Researcher’s observations

From the start of these exercises, the researcher gathered weekly observations as well as students’ comments in order to correct any flaws or to ameliorate potential weaknesses that would impede the study. The researcher’s observations with the in-class exercises were as follows:

Week 1. Most students are excited about the in-class daily oral exercises. Some of the better students in the class came from the back of the class to sit in the front row, so they could follow the exercises more carefully. Most of them want and need to use the captions for better performance and to feel more in control. Sometimes, I have to ask the students to stay synchronized with the speech and not “read” ahead of what they hear. Captions are definitely being used.

Week 2. When students perform the in-class repetitions with me, we work on exercises taken from the (2014) French program video-clips, but when they are alone at the lab, the students work with the various dialogues offered on line in the program BBC ©, *Ma France* (2014). There is generally a more secure atmosphere than during the initial week among the students. Some of their initial fears are going away. Captions are still very much used.

Week 3. Most students are happy to go through the exercises. I am changing the in-class dialogue every week so things are not boring and students keep their enthusiasm. Also, I have to cover as many dialogues as possible before the end of the school term. Some students don’t always want to repeat out loud in class. Some of them (three or four) lip talk when I come near them because they are timid to speak in front of me.

Week 6. The students are noticing that the dialogues are becoming harder and faster.
They are feeling less in control. I explained to them that from now on, they needed to quietly and carefully listen to the speech when first introduced, and then do the repeating exercises during the rest of the week. A couple of students don't want to fill out the survey forms, saying that it will be too repetitive if filled out every week. Other students don't feel that way and keep filling out the survey form once a week, still finding various interesting comments to write. Overall, everyone is cooperating well. I still feel the enthusiasm from students who want to improve and already seem to see results in their pronunciation. These exercises are motivating to them, and therefore elating to me.

**Week 7.** Today, April 30, 2014, during the in-class exercises, I noticed that the students were unable to track the dialogues in *D'accord!* (2014). The actors were speaking too fast, with no time in between the words or phrases for the students to repeat at a reasonable speed. I then paused after each sentence, and waited for the students to repeat the group of words (or phrases) before going on to the next sentence. I also re-explained the difference between tracking and shadowing and encouraged them to pause the video, perform ‘shadowing’ exercises, thus allowing stronger control over their pronunciation exercises in the lab during their 20 minutes of free choice. The students seem to gain a better understanding of what I am trying to accomplish through these exercises. They are still showing motivation through these exercises, especially with the free-choice lab videos exercises.

**Week 8.** The majority of the students have shared their positive comments to me about these exercises during our last in-lab session. Even if these technological pronunciation methods don’t show enough evidence of improvement when assessed, I believe these exercises have still generated positive and motivating outcomes for the students as for myself. Many students shared that they enjoyed the diversity of language-learning experiences these exercises have brought to
the class. Some of them even suggested that I continue this therapy with my future French classes.

**Student survey questions**

In order to understand the students’ perceptions of the pronunciation exercises, I asked them to fill out a weekly survey after each lab exercise (see Appendix B). These questions were of a quantitative as well as qualitative nature. The qualitative satisfaction questions the students were asked were the following: “What did you like or not like about this activity?” and “What feature of this program helped you with pronunciation?” The students were also asked to add any free comments about their experience for each week.

**Qualitative satisfaction**

**Initial responses to Question 6.** In the initial responses to Question 6 on what they liked or disliked about the in-class and lab activities, a few students were a little apprehensive about whether the program would be successful, but many students responded enthusiastically. Five students out of 19 (26%) showed an unreserved appreciation for these exercises. For example, “I like the basic story line, so it is easy to focus on their pronunciation” — “I liked hearing real French and not poorly pronounced high school French.” See Appendix C for the entire list of comments.

Some students showed mixed feelings about the program. Their comments reflected the initial loudness before the students corrected it. Five students out of 19 (26%) primarily shared these opinions. For example: “It was good to work on pronunciation, but it was hard with everybody. It was hard to hear what they [in the dialogue] were saying” — “I thought repeating after people, was fine, but it became hard to hear when everyone was doing it at different times.”
Another group of students shared mostly negative comments on the program they had tried during the first week. From their observations, these students seemed to either be primarily overwhelmed by the newness and unfamiliarity of the exercises, or seemed to not fully comprehend the purpose of the study, which was solely to improve their French pronunciation. Seven students out of 19 (37%) initially answered with somewhat negative or apprehensive comments. For example: “I think it would be better if we were asked questions and how to respond rather than reading subtitles”—“It was hard to speak as they were speaking. It would have been easier to pause and then repeat.”

**Final responses to Question 6.** At the end of the program, the students expressed a significant change in opinion for the better. More remarks were positive. The students’ reactions at the end could have resulted from them becoming accustomed to the exercises, and them coming to the realization that they were indeed making progress.

A total of 14 out of 19 students (74%) shared positive comments. These can be grouped into several categories. The first group expressed an increased interest in the people and culture of the videos: “I like that we could learn interesting things about France while making our pronunciation better at the same time”—“I loved getting to see true French people speaking French. I liked being able to see French culture and to repeat what they say with correct pronunciation.”

Others liked the autonomy of the lab exercises which allowed them to go at their own pace: “I liked that this activity allowed us to go at our own pace, and that we could choose whether we wanted French subtitles, English subtitles or neither. I liked to try without the subtitles because it allowed me to really listen to the words being said instead of simply reading.”
A third group appreciated the availability of the subtitles: “I liked being able to read what they were saying. It made it easier to repeat what was said” — “The subtitles were very helpful, being able to see the words helped a lot. Also the speed of the videos was good, they weren’t so fast that I wouldn’t understand.”

The fourth group valued the progression they noticed in their language skills: “It was fast but it helped me speak faster” — “At first, I didn’t like these exercises but as the term went on, I started liking the videos I was watching. I think it had to do with the fact that in the beginning, it was hard to understand but later, it was a lot easier.”

Collectively, these comments indicate that as the program progressed, the students gained a certain familiarity and a liking for the program. They developed more and more interest in the cultural background as they gradually caught up with the fluency of the native speakers and established a degree of assurance with the exercises. Additionally, it appears from these comments that the students very much liked the weekly lab exercises where they had control of the content, pausing, reading the script and restarting the videos.

**Initial responses to Question 7.** For this question, asking what feature of the program helped with pronunciation, most students gave positive remarks at the beginning and at the end of the pronunciation program. At the start, 18 out of 19 (95%) were complimentary and hopeful about the program. The comments could be grouped into three general categories: i) hearing correct pronunciation, ii) reading the captions and iii) speaking along with the videos.

The first group liked hearing correct pronunciation from native speakers: “It helped hearing the people in the video pronounce correctly” — “It was helpful hearing how certain words should be spoken.”
The second group appreciated having the captions to read: “It helped being able to see the script and watch the people saying the lines in French” — “The subtitles probably helped me the most on the video.”

The third group liked speaking along with the video: “What helped was speaking along with the people” — “Hearing them say it, repeating it, and seeing it written in the subtitles.” This last comment captures the essence of the method to simultaneously combine hearing, reading and speaking.

One student out of 19 was a little more apprehensive about the ability of this program to help with French pronunciation because of the initial setback created by chaotic, loud repetitions first classroom exercise. Here is the comment: “Not really any of it because I couldn’t hear what the actors were saying since we were speaking on top of them.”

**Final responses to Question 7.** At the end of the program, the second question on what feature of this program helped with pronunciation, all students expressed positive remarks. The comments could be grouped into similar themes as the initial comments: i) they appreciated listening to native speakers, ii) reading along with the subtitles, iii) pronouncing aloud, and iv) having the autonomy to pause and go at their own pace in the lab exercises. However, these final comments were more specific, insightful and multiple themes were sometimes addressed.

Some of the listening to native speakers comments were: “The fact that the people are actually French let me trust that their pronunciation is correct. I liked being able to stop the video to repeat what the French speakers said” — “Just listening to people speaking and listening to people saying it correctly helped a lot with pronunciation.”

Some of the subtitles comments were: “I liked the subtitles and hearing the French at the same time. It helped to iterate both things at once and connect the two” — “The subtitles helped,
so I knew what they were going to say. That was helpful because it meant that I could speak at the same time as them instead of shadowing.”

The comments addressing the speaking theme were: “The talking” — “The subtitles and directly repeating what they said after they said it”. The autonomy of the lab exercises was emphasized in many comments: “The two different types were helpful. Having to be able to keep up with the in-class videos at speed but being able to stop the ones in the lab and go back over” — “The subtitles and pausing helped so much, it allowed me to take the whole process at my own appropriate pace, which is key to learning for me.”

Even the student who was initially apprehensive was pleased with the end results. Here is his/her final comment on this question: “The subtitles and directly repeating what they said after they said it helped…I definitely appreciate lab work once more. It is a lot more helpful and beneficial.”

It appears from these comments that the students recognized the help they were receiving, especially when reading the captions as they were listening to native speakers, trusting in the natives’ coaching of new words while pausing the video when needed. As the end of the program approached, students’ comments were more specific as to how the program had helped them. They also recognized their improvement and expressed appreciation for what the lab had to offer in terms of choice of content, speed and reading of captions.

**Initial responses to Question 9.** For the third question soliciting any additional comments about their experience each week, most students started on a positive note, but I noticed some apprehension on the part of a couple of students. Here are some of the overall comments from the students at the beginning of the program: “I believe this activity does help with pronunciation”— “I realized that stopping the video to read the subtitles instead of flying
through them really helped me with the pronunciation” — “I like the effort we are making to try and speak, but I wish it were more like a normal conversation instead of repetitions.”

**Final responses to Question 9.** At the end of the term, I asked the participants to share some final perceptions of the program. These comments were all of a positive nature. The students sometimes compared the in-classes exercises with the weekly lab sessions, but their attitude about the program in general was constructive and encouraging. For example: “I felt like the videos in the lab were very helpful because unlike the class ones, I could go at my own pace and stop when I needed to. I liked the lab a lot and I think it helped me a lot” — “I liked the daily listening better. I find it easier to improve my pronunciation with the daily listening videos. I also liked how you participated in daily listening so you could correct our mistakes” — “This term is when we began to focus on pronunciation. Overall, I think it really helped me and my classmates included my speech and the pace I speak in, have really improved since the beginning of the year. Thank you!”

From these comments, the students expressed clear recognition and appreciation for the progress they had made in their pronunciation throughout the duration of the program. They expressed a regret that they did not use the program from the beginning of the year.

**End of year self-evaluation comments**

In an additional and optional end-of-the-year self-evaluation of the course in general and not the pronunciation exercises, some students spontaneously mentioned the lab and pronunciation exercises as part of the activities they liked about the class. These comments were very positive and useful.

The following are some of the comments left by many participants: “I can speak a little better and my pronunciation is getting a little better, and also my desire to learn and speak more
has grown!” — “I am improving in French orals. Although being able to speak is a little struggle, I feel like I have really improved this term with the constant practicing every day and lab on Mondays!” Collectively, these comments show a positive response by the students to the pronunciation exercises that increased as the term progressed.

**Quantitative surveys of Student Satisfaction**

The results of the quantitative survey reflected the generally positive responses found in the student comments about the program. The survey helped reveal how the students used the program and what their preferences were. Question 1 asked how often students looked at the subtitles, providing response options of 1) never 2) rarely 3) often and 4) all the time. The vast majority of the students used them extensively, as reflected by an average score of 3 with a standard deviation of approximately 0.5 (Figure 1). This information is noteworthy because of the improvement in the students’ reading scores seen in the post-test results.

Question 2 asked how often students stopped the video and repeated what was said, providing response options of 1) never 2) rarely 3) most sentences. In this case, the students did not stop the video much at the beginning (Choice 2 “rarely”), but at Week 7 there was a small increase in stoppage time, which reflected the difficulties the students encountered when the dialogues became more sophisticated and the speech speed increased (Figure 2). The increase also reflected my encouraging them to stop and “shadow” (stopping and then repeating) the various utterances.
Question 3 asked how difficult it was to say what the speaker said, providing response options of 1) super easy 2) easy 3) not difficult 4) somewhat difficult 5) very difficult. In this case, the students’ choices fluctuated between three and four (Figure 3). The responses did not change significantly over time. From these responses, it appears that the level of difficulty of the video dialogues was appropriate for the students.

Figure 2. Quantitative Survey Question 2. Graphs show the results of the survey over the nine-week period. Symbols and error bars are as in Figure 1.

Question 4 asked whether the video-clip was too fast, providing response options of 1) super easy 2) easy 3) average for me 4) fast, but I could manage 5) too fast for me. Here, the students mostly stayed between three and four, with an increase during the second week and a steady decrease afterwards until the end (Figure 4). This decrease likely indicates more familiarity with the program and an improving ability to follow the dialogues.
Question 5 asked how important it was for them to understand what was going on in order to repeat, providing response options of 1) not important 2) somewhat important 3) very important. Here, the student responses started above two and continually decreased to below two (Figure 5). The downward trend was consistent throughout the study, but the differences between the first and last week was not statistically significant. This perception may reflect the students coming to the realization that they could repeat the sounds without understanding the meaning. A similar phenomenon is seen when non-native speakers sing the words to a popular song in a foreign language without understanding the meaning.

Question 8a asked whether the weekly lab exercises were helpful, on a scale from one to five, one being the least helpful and five being the most helpful. Students’ perception of how helpful their time in the lab improved substantially over the course of the semester from a rating of just below four to nearly five, and the difference was statistically significant as evidenced by a p value of 0.016 between the results of the first and the last survey (Figure 6). This positive response could reflect an increase in motivation due to the fact that I allowed them to choose which video they viewed during the second half of the program.
Question 8b asked how helpful the daily in-class exercises were, also based on a scale between one and five, one being the least helpful and five being the most helpful. Here, student satisfaction did not change with an average response of three and a half (Figure 7).

The numerical data for all the student survey questions are summarized in Table 1 below.

<table>
<thead>
<tr>
<th>Week</th>
<th>Question 1</th>
<th>Question 2</th>
<th>Question 3</th>
<th>Question 4</th>
<th>Question 5</th>
<th>Question 8a</th>
<th>Question 8b</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.1 ± 0.4</td>
<td>2.1 ± 0.8</td>
<td>3.4 ± 0.7</td>
<td>3.7 ± 0.8</td>
<td>2.3 ± 0.6</td>
<td>3.8 ± 1.0</td>
<td>3.4 ± 0.8</td>
</tr>
<tr>
<td>2</td>
<td>3.1 ± 0.6</td>
<td>1.9 ± 0.5</td>
<td>3.8 ± 0.4</td>
<td>3.9 ± 0.4</td>
<td>1.9 ± 0.6</td>
<td>3.8 ± 0.8</td>
<td>4.1 ± 0.9</td>
</tr>
<tr>
<td>4</td>
<td>3.2 ± 0.4</td>
<td>2.1 ± 0.8</td>
<td>3.3 ± 0.9</td>
<td>3.8 ± 0.9</td>
<td>2.1 ± 0.6</td>
<td>4.1 ± 0.8</td>
<td>3.6 ± 0.8</td>
</tr>
<tr>
<td>5</td>
<td>3.2 ± 0.6</td>
<td>2.2 ± 0.8</td>
<td>3.2 ± 0.7</td>
<td>3.6 ± 0.9</td>
<td>2.1 ± 0.7</td>
<td>4.3 ± 0.7</td>
<td>3.4 ± 0.7</td>
</tr>
<tr>
<td>7</td>
<td>3.1 ± 0.7</td>
<td>2.5 ± 0.8</td>
<td>3.6 ± 0.8</td>
<td>3.5 ± 0.9</td>
<td>1.9 ± 0.7</td>
<td>4.2 ± 0.7</td>
<td>3.5 ± 0.8</td>
</tr>
<tr>
<td>9</td>
<td>3.0 ± 0.4</td>
<td>2.3 ± 0.6</td>
<td>3.2 ± 0.8</td>
<td>3.3 ± 0.8</td>
<td>1.8 ± 0.4</td>
<td>4.5 ± 0.6</td>
<td>3.6 ± 1.2</td>
</tr>
</tbody>
</table>

**Table 1. Summary of the Quantitative Survey Results.** The values represent the mean ± the standard deviation for the 19 students for each question.
Exam performances and evaluations

The students were evaluated in two separate exercises. The first evaluation was a free response where students gave an oral one to two-minute description of simple pictures (see Appendix A). The second evaluation consisted of a text the students read for about the same duration. In both the free-response pronunciation as well as reading pronunciation, the students’ scores were analyzed all together and also divided into categories according to their performance.

The results of the free-response pronunciation test are shown below in Figure 8. Bars show the average scores ± the standard deviation. For all students, the average score in the pre-test was 7.2 and the post-test was 7.6. The data were analyzed by a t-test to determine the statistical significance of the difference. The p-value from the t-test was 0.20, above the 0.05 limit for statistical significance, hence the difference was not significant. However, when the

![Figure 8. Free Response Pronunciation Test Results](image)

Figure 8. Free Response Pronunciation Test Results - Bars represent the mean of the students’ scores and the error bars show the standard deviation. All indicates the mean score for all students. Top 7 is the mean of the 7 best students on the pretest. Middle 7 is the mean of the 7 middle students on the pretest. Bottom 5 is the mean of the lowest 5 students on the pre-test. * p < 0.05 when comparing the post-test to the pre-test.
students were divided into groups between the top 7, the middle 7 and the bottom 5, statistically significant differences did emerge. For the top group, the average score on the pre-test was 9.3 and the post-test was 10.5, representing a 13% improvement in their score with a $p$-value of 0.05. Thus, the improvement in this group was statistically significant. For the middle group, the average score actually decreased from 7.8 on the pre-test to 7.1 on the post-test, representing a 9% decrease. However, this difference was not statistically significant with a $p$ value of 0.16. For the bottom group, the average score on the pre-test was 3.5 and the post-test was 4.4, representing a 27% improvement in their score with a $p$ value of 0.03. Thus, the improvement in this group was the largest and the most significant.

When analyzing the reading pronunciation evaluation, there was a statistically significant improvement between the pre- and post-test for all groups. The results are shown in Figure 9. Bars show the average scores ± the standard deviation. For all students, the average score in the

![Figure 9. Reading Pronunciation Test Results](image)

**Figure 9. Reading Pronunciation Test Results** - Bars represent the mean of the students’ scores and the error bars show the standard deviation. Scores were also sub-divided as in Figure 2. * $p < 0.05$, *** $p = 0.005$, **** $p = 0.00005$ when comparing the post-test to the pre-test.
pre-test was 7.5 and the post-test was 8.6, representing a 17% increase. This difference was highly significant with a $p$-value of 0.00005. Moreover, when the students were divided into groups between the top 7, the middle 7 and the bottom 5, each group showed statistically significant improvement. For the top group, the average score on the pre-test was 9.8 and the post-test was 11.4, representing a 16% improvement in their score with a $p$-value of 0.02. For the middle group, the average score increased from 7.5 on the pre-test to 8.4 on the post-test, representing a 12% increase with a $p$-value of 0.04. For the bottom group, the average score on the pre-test was 4.3 and the post-test was 5.6, representing a 30% improvement in their score with a $p$-value of 0.005. Again, the improvement in this weakest group was the largest and the most significant. From these results, it is clear that these pronunciation exercises resulted in a striking improvement in the students’ reading performance.
Chapter 5  Discussion and Conclusions

Analysis of the Findings

The purpose of this study was to answer the following:

1) What changes do high school students experience over the course of a term (ten weeks) using shadowing and tracking pronunciation exercises?

2) How did students choose to interact with the material to improve pronunciation?

In this research, we explored the effectiveness of computer-assisted pronunciation methods, tracking and shadowing. The study suggests that the shadowing and/or tracking exercises were effective in improving the accuracy of the students’ pronunciation, particularly their reading pronunciation skills. This study also measured the students’ interactions with these methods quantitatively and qualitatively.

In the free-response pronunciation scores (Fig. 8), there was no significant improvement when all students were considered. However, when divided into three performance categories, the top or strongest performing group showed significant improvement, as did the bottom or weakest performing group. The middle or average group did not show improvement. From what was observed, the top group’s improvement could be attributed to their enthusiastic response to the program. These students’ progress could have emerged from their motivation in wanting to learn. The bottom group’s improvement could have reflected better direction and guidance in following a more structured pronunciation program. It is not clear why the middle group showed no improvement in their pronunciation. This result could reflect less motivation than the top group and better pronunciation to begin with than the bottom group. This middle group probably needs more time to show improvement.
In the reading pronunciation evaluation (Fig. 9), there was significant improvement across the board for the entire group as well as each subgroup. This was the most conspicuous finding of the entire study. An obvious reason for the improved reading pronunciation was the subtitles. The quantitative survey shows that the students mostly chose to read the subtitles when repeating what they saw and heard during the exercises. In fact, during the first week, I occasionally observed some students reading ahead of the speech, which led me to believe they were indeed “reading” out loud. I would correct this practice each time I noticed it so that the listening, reading and pronunciation were synchronized because this combination of reading the words, hearing the correct sounds and repeating them seemed to be effective in improving their reading pronunciation skills.

The students’ responses to the survey and their written comments give a good view of their perceptions of the program. Initially, they were motivated by the novelty, but some were apprehensive about their ability to do the exercises and whether the program would help their pronunciation. However, as they became accustomed to the exercises and became interested in the dialogues, their enthusiasm increased. By the end of the term, all the students expressed satisfaction with the program and the improvement they perceived in their pronunciation. They particularly enjoyed the lab sessions in which they were free to explore the dialogues on their own. This freedom allowed them to choose the degree of difficulty of the dialogues and those that were most interesting to them. Some expressed that the dialogues would come to life and that they felt a part of the conversation, even though they were merely repeating. Most students relied heavily on the subtitles, which gave them a sense of security and helped them follow the conversation while pronouncing the words at the same time. The availability of interesting, high quality dialogues in the Ma France videos also made a difference by capturing the students’
attention and interest. Overall, the students enjoyed the exercises and found satisfaction in their ability to repeat the conversations.

**Comparison to other work**

It is informative to compare the results of this study to other computer-assisted pronunciation studies. Neri et al. (2008) tested the effectiveness of computer-assisted pronunciation training to traditional teacher-assisted training for 11-year-old Italian students learning English as a second language. They found that over a four-week period, both methods improved pronunciation equally well. In comparing their results to those reported here, my study made no attempt to create a control group with traditional training, and the students in my study were intermediate, French high school-aged students. Nevertheless, in both studies computer-based methods improved student pronunciation significantly. Moreover, the student satisfaction observed in my study was mirrored in the work of Ducate and Lomicka (2009), in which podcasting was used as a tool for honing pronunciation skills. During a 16-week program for students in intermediate German and French courses, Ducate and Lomicka reported a high level of satisfaction among students using the podcasting approach, despite the fact that pronunciation scores were not measurably improved. My program retained the appeal of the podcasting approach, but was more effective as evidenced by the measured increases in pronunciation performance. This improvement was more comparable to that of Tanner and Landon in which they worked with similar pronunciation activities and found significant gains among their treatment groups (Tanner and Landon, 2009). Collectively, these studies, combined with my study, indicate that computer-based approaches are successful at teaching pronunciation and engaging student interest.
Implications for Teaching

This research shows that computer-based pronunciation programs have the potential to greatly improve pronunciation training. A few meaningful recommendations can be gathered for teachers who want to implement these types of exercises in their future programs:

1. Teachers should not be fearful of using technology in the foreign language (FL) classroom.

2. In order to solidify these pronunciation exercises and recognize progress, the teachers should work on students’ pronunciation actively and regularly throughout the entire school year.

3. The teachers will have a better chance to feed students’ intrinsic motivation by letting them make their own selection within the available viewing material (similar to the videos of *Ma France* in the lab exercises). Giving the students some type of control over what they watch seem to increase their performance.

4. Using videos with native actors in real situations helps captivate students’ interest and increases their cultural exposure.

5. The level of difficulty is important. A balance must be maintained between choosing material that stretches their abilities but permits them to follow. Materials should be selected at the proper level, starting with material that is easier than the students’ current level and progressing to more advanced material. This approach develops confidence and avoids anxiety and tension among the students.

6. Continued daily exercises are needed to trigger and maintain students’ attention. During the daily exercises, the students were more attentive because they had less control over the repetition pace. They concentrated more, and became more engaged. These daily
exercises were however less popular, so it may only be beneficial if these types of oral practices are used during a shorter period of time (i.e. during a ten-week term).

7. Use captions accurately transcribed from the oral dialogues for better tracking and/or shadowing. Be aware that captions don’t all have correctly matched scripts.

8. Prepare the students beforehand against general cacophony by warning them to not speak too loudly when doing whole class pronunciation exercises.

Following these recommendations is likely to result in a meaningful and productive pronunciation experience.

Limitations/Future Research

There were three main limitations to this study: i) the scale was small, with only 19 student participants, ii) the duration was brief, covering one academic term of 10 weeks, iii) there was no attempt to create a control group that followed traditional pronunciation instruction to compare the effectiveness of the computer-assisted methods over traditional methods. With regard to the small number of participants, out of necessity the study was limited to the number of students in my classes, raising questions about the general effectiveness of the shadowing and tracking methods for most non-native high school French students. However, the positive response of the students to the program and their improved pronunciation, especially in reading, justifies broader experimentation with these methods.

The brief duration of the study was both an asset and a liability. It was an asset because it showed that the tracking and shadowing methods improved reading pronunciation significantly over a short period of time. Furthermore, the students’ interest and enthusiasm for the program was maintained over the duration of the study. On the other hand, it was a liability because greater improvement, especially in free response pronunciation, could have been achieved over a
longer period of time. In the future, these methods could be tested over an entire school year to determine if interest can be maintained and pronunciation can be improved to a greater extent. Finally, given the limited number of students and the limited number of classes that I had access to, it was not logistically feasible to create treatment and control groups. This inability did not allow comparison of the tracking and shadowing methods to traditional in-class dialogue and repetition pronunciation methods. With that said, the striking improvement in reading pronunciation that the tracking and shadowing methods produced over a brief period of time argues that these computer-assisted methods may be more effective than traditional classroom methods.

This type of study could be expanded to include fluency. The effects of the exercises on fluency surfaced in the testing. In evaluating pronunciation, the judges attempted to separate pronunciation from fluency. However, they observed a correlation between pronunciation and fluency and those students with better pronunciation spoke with better fluency as well. Thus, it appeared that the improvements in pronunciation produced by the exercises were also accompanied by an improvement in fluency. Future work specifically addressing the effects of these computer-assisted exercised on fluency is merited.

Conclusion

These results demonstrate that computer-based tracking and shadowing methods can be effective in teaching French pronunciation, especially reading pronunciation, when students can follow subtitles of spoken dialogues. Having on line access to a variety of dialogues and allowing the student to explore and choose those that interest them helps maintain their interest and motivation to improve. I am anxious to incorporate these methods into my regular curriculum to test just how effective they can be in improving pronunciation in the long-term.
These studies have contributed considerably to my overarching goal to help students achieve effective oral communication in French.
References


In J. Levis & K LeVelle (Eds.), *Proceedings of the 1st Pronunciation in Second Language Learning and Teaching Conference*, Iowa State University, Sept. 2009. (pp. 24-37), Ames, IA: Iowa State University.


Kosa da Silva, V. (2012). Integrating pronunciation activities in Brazilian EFL classrooms *PLE Pensar Linguas Estrangeiras I*


Appendix

A. Instruments

Illustrations taken from *D’accord!* (2011) students’ activity workbooks.

Final Oral Spontaneous and Reading Pre- and Post-tests

- Describe aloud what you see in 3 or 4 of the following pictures.
- Talk for 1 minute straight. You can include people’s physical appearance, their current mood, and personality characteristics, and even what they do for fun.
- Also, you can talk a lot about just one or two of the pictures or whatever you want, there’s no right or wrong,
- The key is to just talk as much as you comfortably can while doing the task.
- This exercise is focusing on pronunciation, not on language accuracy.

1. Illustration number 1: Ils sont au restaurant, ils... (They are at the restaurant, they are...)
2. Illustration number 2: Ils vont au marché, ils achètent...(They are going to the market, they are buying...)
3. Illustration number 3: Décrivez la famille. Que font-ils? (Describe the family. What are they doing?)

Reading exercises: Read the following dialogues aloud.

(Dialogues inspired by *D’accord !1 and D’accord !2* (2011) reprises)

--À l’école, j’aime le cours de français. On étudie *Les Trois Mousquetaires*.

--Moi, je déteste le cours de sciences. Je n’aime pas tellement le professeur, Mr. Dupré.

--C’est vrai, il n’est pas très enthousiaste, mais c’est un cours intéressant et utile, tu sais !

(Pause)

--Regarde ces photos. C’est ton père, là ?

--Oui. Il est médecin. Il travaille beaucoup. Et là, c’est ma mère, Adélaïde. Elle est
avocate. Elle est très active et très travailleuse aussi.

-- Avocate? Moi, j’ai envie d’être architecte.

(Pause)

-- Je ne trouve pas mon téléphone. C’est mon nouveau portable jaune!

-- Il n’est pas dans ton sac à dos ? Sous tes cahiers ou derrière ton livre… ou à gauche ?

-- Pas derrière, ni à gauche, ni à droite, ni devant. C’est ton chien qui l’a peut-être mangé!

-- Oh, quel loup, ce chien !

(Pause)

-- Regarde, tout le monde est fatigué! Allons au restaurant ! Tu as le temps ?

-- Alors, pour Anne, elle choisit une soupe du jour, un sandwich au fromage, du jambon avec des frites, et une bouteille d’eau minérale avec deux verres.

-- Ça y est, je comprends ! La boisson gazeuse coûte un euro vingt-cinq.

-- Oh, j’ai trop bu … Quel est ce poison ? … C’est du vin blanc !

(Pause)

-- Allô? Tu m’as téléphoné ? Écoute, je prépare un gâteau d’anniversaire pour Stéphane et on organise une fête surprise pour lui.

-- Désolée, je suis en retard, mais j’ai apporté de la glace au chocolat. Il adore ça ! J’ai aussi apporté des bonbons. Il a de la chance, ce garçon !

(Pause)


-- Qu’est-ce qu’il nous faut alors?… Du bœuf, des carottes, des oignons et du poisson ?

-- Non, pas de poisson, idiot !

-- J’ai déjà fait les courses. Je suis allé à la boulangerie et après, chez le chocolatier.
B. Student Questionnaire and Survey:

1) How often did you look at the subtitles?
   4. The whole time
   3. Often
   2. Rarely
   1. Never

2) How often did you stop the video and repeat what was said?
   3. Most sentences
   2. Rarely
   1. Never

3) How difficult was it to say what the speaker said?
   5. Very difficult
   4. Somewhat difficult
   3. Not difficult
   2. Easy
   1. Super easy

4) Speed. Was the video-clip too fast?
   5. Too fast for me
   4. Fast, but I could manage
   3. Average for me
   2. Easy
   1. Super easy
5) How important was it for you to understand what was going on in order to repeat?

   3. Very important
   2. Somewhat important
   1. Not important

6) What did you like or not like about this activity?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

7) What feature of this program helped you with pronunciation?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

8) Circle each activity according to how helpful they were; 1 being the least helpful and 5 being the most helpful

   a. Lab/Videos   1—2—3—4—5
   b. Daily Listening 1—2—3—4—5

9) Overall general comments:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
C. Qualitative Satisfaction

Initial responses to Question 6. In the initial responses to Question 6 on what they liked or disliked about the in-class and lab activities, a few students were a little apprehensive about whether the program would be successful, but many students responded enthusiastically. Five students out of 19 (26%) showed an unreserved appreciation for these exercises, stating: “I feel like it could really help a lot if done for longer” — “I liked following along with the video” — “I like the basic story line, so it is easy to focus on their pronunciation” — “I liked hearing real French and not poorly pronounced high school French” — “The people speaking spoke slower than normal and I was able to understand most of what they said.”

Some students showed mixed feelings about the program. Their comments reflected the initial loudness before the students corrected it. Five students out of 19 (26%) primarily shared these opinions, stating: “It was good to work on pronunciation, but it was hard with everybody. It was hard to hear what they [in the dialogue] were saying” — “I like it because it tested my pronunciation, but what I was saying was irrelevant because I didn’t have enough time to understand” — “I liked the practice with listening, but not the repeating everything they said” — “I like listening to others speak French… I don’t like these particular videos because they feel really scripted” — “I liked trying to speak like them but it was hard without [using] the subtitles” — “I liked that we got to watch a video-clip. I thought it was challenging to repeat it over everyone’s voice” — “I thought repeating after people, was fine, but it became hard to hear when everyone was doing it at different times.”

Another group of students shared mostly negative comments on the program they had tried during the first week. From their observations, these students seemed to either be primarily overwhelmed by the newness and unfamiliarity of the exercises, or seemed to not fully
comprehend the purpose of the study, which was solely to improve their French pronunciation. Seven students out of 19 (37%) initially answered with somewhat negative or apprehensive comments, stating: “I think it would be better if we were asked questions and how to respond rather than reading subtitles” — “It was sometimes hard to hear what they were saying because the class was loud” — “It was very difficult to know what they were saying ahead of time without being able to read the subtitles” — “It was hard to speak as they were speaking. It would have been easier to pause and then repeat” — “Paul’s face blocked half the screen. It’s also basically impossible to not read the subtitles” — “I couldn’t hear the video with everyone else talking out loud, so I had to look at the subtitles” — “The video was not very interesting. I prefer the historical videos we watched.”

**Final responses to Question 6.** At the end of the program, the students expressed a significant change in opinion for the better. More remarks were positive. The students’ reactions at the end could have resulted from them becoming accustomed to the exercises, and them coming to the realization that they were indeed making progress.

A total of 14 out of 19 students (74%) shared positive comments. These can be grouped into several categories. The first group expressed an increased interest in the people and culture of the videos: “I like that we could learn interesting things about France while making our pronunciation better at the same time” — “I like the topics and how it is relevant to modern France, because not only do we learn pronunciation, but culture too” — “I liked the fact that it was really introducing us to daily activities and things that you would really have to know how to say if you were traveling to France” — “I loved getting to see true French people speaking French. I liked being able to see French culture and to repeat what they say with correct pronunciation.”
Others liked the autonomy of the lab exercises which allowed them to go at their own pace: “I liked that this activity allowed us to go at our own pace, and that we could choose whether we wanted French subtitles, English subtitles or neither. I liked to try without the subtitles because it allowed me to really listen to the words being said instead of simply reading” — “I could repeat parts I do not pronounce right” — “I like that you could do it your own way. You could stop it as often as you wanted and replay it as much as you wanted, and be able to go your own speed.”

A third group appreciated the availability of the subtitles: “I liked being able to read what they were saying. It made it easier to repeat what was said” — “The subtitles were very helpful, being able to see the words helped a lot. Also the speed of the videos was good, they weren’t so fast that I wouldn’t understand.”

The fourth group valued the progression they noticed in their language skills: “It was fast but it helped me speak faster” — “I feel like it could help a lot if done for a longer period of time” — “The computer lab and daily pronunciation activities did help quite a bit this term. Repeating what I heard was really useful for working the kinks in my pronunciation. The pausing function and the subtitles helped!” — “At first, I didn’t like these exercises but as the term went on, I started liking the videos I was watching. I think it had to do with the fact that in the beginning, it was hard to understand but later, it was a lot easier” — “I liked that each video got progressively faster, so as I progressed, it kept challenging me. I liked that if it ever got too fast, I could pause it, and repeat it” — “I like how this term, we actually started pronunciation exercises. This activity helped us improve our speaking” — “I really liked hearing the way people spoke because from them, I was able to speak back also.”
Collectively, these comments indicate that as the program progressed, the students gained a certain familiarity and a liking for the program. They developed more and more interest in the cultural background as they gradually caught up with the fluency of the native speakers and established a degree of assurance with the exercises. Additionally, it appears from these comments that the students very much liked the weekly lab exercises where they had control of the content, pausing, reading the script and restarting the videos.

**Initial responses to Question 7.** For this question, asking what feature of the program helped with pronunciation, most students gave positive remarks at the beginning and at the end of the pronunciation program. At the start, 18 out of 19 (95%) were complimentary and hopeful about the program. The comments could be grouped into three general categories: i) hearing correct pronunciation, ii) reading the captions and iii) speaking along with the videos.

The first group liked hearing correct pronunciation from native speakers: “It helped hearing the people in the video pronounce correctly” — “It was helpful hearing how certain words should be spoken” — “The listening component greatly helped with pronunciation” — “The pronunciation of the actors was very clear and slow enough to understand” — “Hearing how I sound compared to them” — “They pronounced it so I can hear how they pronounce” — “What helped was how they spoke slowly and I could hear almost every sound.”

The second group appreciated having the captions to read: “It helped being able to see the script and watch the people saying the lines in French” — “Simply listening to the people speak and to see the words both helped me” — “The subtitles helped me with this pronunciation exercise, and listening to them say it was awesome!” — “The way the actors talked slower, also the subtitles at the bottom were helpful” — “The subtitles probably helped me the most on the video.”
The third group liked speaking along with the video: “What helped was speaking along with the people” — “It was good that they spoke slowly, so there was time to repeat it before they said the next thing” — “Hearing how it is supposed to sound, and then, saying it” — “The repeating out loud helped” — “Hearing the people say it, then me repeating, made it very easy to say the exact pronunciation” — “Hearing them say it, repeating it, and seeing it written in the subtitles”. This last comment captures the essence of the method to simultaneously combine hearing, reading and speaking.

One student out of 19 (5%) was a little more apprehensive about the ability of this program to help with French pronunciation because of the initial setback created by chaotic, loud repetitions first classroom exercise. Here is the comment: “Not really any of it because I couldn’t hear what the actors were saying since we were speaking on top of them.”

**Final responses to Question 7.** At the end of the program, the second question on what feature of this program helped with pronunciation, all students expressed positive remarks. The comments could be grouped into similar themes as the initial comments: i) they appreciated listening to native speakers, ii) reading along with the subtitles, iii) pronouncing aloud, and iv) having the autonomy to pause and go at their own pace in the lab exercises. However, these final comments were more specific, insightful and multiple themes were sometimes addressed.

The listening to native speakers comments were: “Simply the fact that we heard native French speakers talking helped. The videos had people with different accents and it forced me to really listen to the pronunciation” — “The fact that the people are actually French let me trust that their pronunciation is correct. I liked being able to stop the video to repeat what the French speakers said” — “Just listening to people speaking and listening to people saying it correctly
helped a lot with pronunciation” — “Hearing the people speak back made it easier for me to sort of mimic them.”

The subtitles comments were: “The lab’s subtitles helped me to see how different things were pronounced and it helped me learn a lot” — “Being able to see the words and then hear them, from a French native speaker” — “I liked the subtitles and hearing the French at the same time. It helped to iterate both things at once and connect the two” — “The subtitles along with hearing the people speaking to them. I didn’t really ever pause, though” — “Subtitles and audio” — “The subtitles helped, so I knew what they were going to say. That was helpful because it meant that I could speak at the same time as them instead of shadowing” — “The subtitles helped with pronunciation and hearing other people speak in the video also helps with pronunciation.”

The comments addressing the speaking theme were: “The talking” — “The subtitles and directly repeating what they said after they said it.” The autonomy of the lab exercises was emphasized in many comments: “The two different types were helpful. Having to be able to keep up with the in-class videos at speed but being able to stop the ones in the lab and go back over” — “The subtitles and pausing helped so much, it allowed me to take the whole process at my own appropriate pace, which is key to learning for me” — “The lab was better for me because you could go at your own pace and practice what you needed to work on” — “Pausing” — “The subtitles. Without them, I would not have been able to repeat much. Also the pause button because then, I could stop and go back or repeat what they said” — “Subtitles and being able to pause the video, rewind, and replay what was said.”

Even the student who was initially apprehensive was pleased with the end results. Here is his/her final comment on this question: “The subtitles and directly repeating what they said after
they said it helped…I definitely appreciate lab work once more. It is a lot more helpful and beneficial.”

It appears from these comments that the students recognized the help they were receiving, especially when reading the captions as they were listening to native speakers, trusting in the natives’ coaching of new words while pausing the video when needed. As the end of the program approached, students’ comments were more specific as to how the program had helped them. They also recognized their improvement and expressed appreciation for what the lab had to offer in terms of choice of content, speed and reading of captions.

**Initial responses to Question 9.** For the third question soliciting any additional comments about their experience each week, most students started on a positive note, but I noticed some apprehension on the part of a couple of students. Here are overall comments from the students at the beginning of the program: “I believe this activity does help with pronunciation” — “I watched that video so many times!” — “It was a little harder to keep up this time but I liked it” — “I chose to do French subtitles because I was new to this and didn’t do it last week” — “I realized that stopping the video to read the subtitles instead of flying through them really helped me with the pronunciation” — “I like the weekly ones because I can rewind them if I need to” — “I think repetition is great but a variety of video would help me because then we are kept on our toes” — “I enjoyed today even though the dialogue was a little fast. The topic of the isles is very cool and I enjoy it” — “I like the effort we are making to try and speak, but I wish it were more like a normal conversation instead of repetitions” — “It was easier to keep up with them this week. I like the individual one because I can back it up as many times as I want” — “The daily exercises did not allow as much control over speed at which we repeated/what we repeated” — “I felt this video was easier than other videos because of the
subject the video was on, but I would like to speak to more interesting videos like history, stories etc.” — “Having the repeating really helped me the most. Doing activities helped a lot too” — “I felt a lot better with understanding what was said. I felt better with pronunciation” — “I was able to understand and repeat without subtitles today!”

**Final responses to Question 9.** At the end of the term, I asked the participants to share some final perceptions of the program. These comments were all of a positive nature. The students sometimes compared the in-classes exercises with the weekly lab sessions, but their attitude about the program in general was constructive and encouraging. The students shared the following: “I felt like the videos in the lab were very helpful because unlike the class ones, I could go at my own pace and stop when I needed to. I liked the lab a lot and I think it helped me a lot” — “I liked the daily listening better. I find it easier to improve my pronunciation with the daily listening videos. I also liked how you participated in daily listening so you could correct our mistakes” — “I especially liked the labs at the end of the week because I could go at my own speed and I could hear what they were saying better. The daily ones were okay, but since I had seen them before a couple of years ago, it wasn’t as interesting” — “The combination of the two helped a lot. Start doing listening and speaking earlier in the year beyond the presentations. It was fun to have the options of subtitles or not and trying different things like only French, only English, or none at all in the lab” — “This last week went well, and I think that overall these activities greatly improved my pronunciation, but I think that overall, the lab videos were more beneficial than the daily listening videos because they allow you to go at your own pace” — “Please continue with the students from the very beginning. It allowed us to hear several different people speaking French, and therefore gave us a better sense of correct pronunciation” — “Overall, I preferred the lab listening. It felt less tedious in general and was generally more
interesting and natural sounding. I was okay with the in-class ones but they just got incredibly boring after a while” — “I definitely appreciate lab work once more. It is a lot more helpful and beneficial” — “This term is when we began to focus on pronunciation. Overall, I think it really helped me and my classmates included my speech and the pace I speak in, have really improved since the beginning of the year. Thank you!” — “I think my pronunciation has improved a lot this year (I hope so anyway). The lab videos were particularly helpful because it was more individual. I could pause and go back whenever I wanted and really compare my speech to that in the video” — “I got much better at speaking and I can tell the difference between when I started and finished” — “This week has been filled with fun and learning. The videos really helped with my speaking. Also, furthered my knowledge with French culture” — “It was a fun last week of French and I will miss it” — “I think that I have gotten much better this year. The more I listened to the videos, the more I could pronounce” — “These videos were very helpful throughout the term. I would recommend continuing showing them to the other classes.”

From these comments, the students expressed clear recognition and appreciation for the progress they had made in their pronunciation throughout the duration of the program. They expressed a regret that they did not use the program from the beginning of the year.

**End of year self-evaluation comments.** In an additional and optional end-of-the-year self-evaluation of the course in general and not the pronunciation exercises, some students spontaneously mentioned the lab and pronunciation exercises as part of the activities they liked about the class. These comments were very positive and useful.

The following are some of the comments left by many participants: “I love pronunciation exercises!” — “My pronunciation is getting much better!” — “I am able to speak faster than before” — “I like oral activities in speaking…I would like more pronunciation activities through
the whole year.” — “I love lab days!” — “I also liked the lab days…they helped a lot!” — “I liked pronunciation exercises!” — “The pronunciation exercises we do in class helped me out a lot too” — “I can speak a little better and my pronunciation is getting a little better, and also my desire to learn and speak more has grown!” — “I am improving in French orals. Although being able to speak is a little struggle, I feel like I have really improved this term with the constant practicing every day and lab on Mondays!” Collectively, these comments show a positive response by the students to the pronunciation exercises that increased as the term progressed.