Influencing Students’ Pronunciation and Willingness to Communicate through Interpersonal Audio Discussions

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Abstract

This article discusses a study that investigated pronunciation development in second language learners by monitoring willingness to communicate variables. Students (N = 37) in a second-semester, introductory French course participated in online interpersonal audio discussions with classmates through VoiceThread. Pronunciation development and willingness to communicate were monitored through self-assessment after completing each activity. Analysis revealed that participation in the activities combined with a feedback-supported environment resulted in an overall increase in perceived pronunciation abilities that positively correlated with willingness to communicate variables. Additionally, the pedagogical benefits of using audio discussions to improve pronunciation are presented.

Background

Recent researchers Liao and Zhao (2012) agree with the notion that communicative language teaching (CLT) is the most commonly implemented second language (L2) teaching approach worldwide. Although this popular approach supports the development of an overall communicative competence, a multi-dimensional construct that includes linguistic accuracy (Munro & Derwing, 2011; Omaggio Hadley, 2001), the role of accurate pronunciation within CLT is often uncertain (Pennington & Richards, 1986; Tshirner, 1996). In fact, the majority of L2 classrooms operating under the CLT approach do not specifically address pronunciation learning (Arteaga, 2000; Harlow & Muyskens, 1994; Morin, 2007; Munro & Derwing, 2011; Spada, 2007).

Ahmad and Rao (2012) pointed out that current research trends are signaling a combination of form-focused and meaning-based instruction in order to better meet dynamic student needs (Larsen-Freeman 2007; Savignon, 2007; Spada 2007). Research has also indicated that L2 students desire accent reduction, a result achieved through an intervention that lessens the presence of a foreign accent, thus continuing to request instruction in pronunciation (Drewelow & Theobald, 2007; Gynan, 1989; Harlow & Muyskens, 1994; Munro & Derwing, 1995). Researchers have begun to study pronunciation development within the context of emerging technologies because the Internet has provided easy access to audio and recording technologies in recent years (Ducate & Lomicka, 2009; Lord, 2008). Researchers have also inves-
tigated factors related to willingness to communicate (WTC) such as anxiety and self-confidence in regard to students’ achievement in pronunciation (MacIntyre, Clément, Dörnyei, & Noels, 1998; Saint Léger & Storch, 2009; Smit, 2002). The present study was developed in order to investigate collectively pronunciation and WTC in the communicative classroom while also further exploring emerging audio technologies. Furthermore, the study addresses pronunciation in learners enrolled in introductory L2 courses, a population that has not been studied extensively in prior pronunciation-related research.

Literature Review

**The WTC model.** MacIntyre et al. (1998) expanded on McCroskey and Baer’s (1985) definition of WTC as a personality trait and adapted WTC to the L2 context by creating the WTC model. This model takes into account the many variables present when initiating a communicative exchange in the L2. MacIntyre et al. found that the language of communication can dramatically affect a person’s WTC because it introduces a level of uncertainty that contains more complex variables than those that influence WTC in the native language. Furthermore, they did not overtly address pronunciation in their WTC model; however, the result of WTC is the learner’s readiness to enter into discourse with others using the L2, an act that involves some effort in producing accurate sounds and comprehensible utterances for interlocutors. Accessing pronunciation is, therefore, a resulting behavior of WTC and the decision to engage in communication with another speaker.

Additionally linking pronunciation and factors affecting WTC is Smit’s (2002) work concerning motivation in pronunciation. Smit noted two key points: pronunciation is undeniably an integral part of language learning and motivation plays a role in language learning. MacIntyre et al. (1998) also believed that WTC is made up of inter-related layers, both psychological and linguistic, such as L2-related anxiety, motivation, and communicative competence. In a previous study, Dörnyei and Kormos (2000) used WTC as a successful predictor variable to address L2 learners’ communicative performance by identifying correlations between WTC, motivational variables, and the number of words and turns in speaking samples. L2 communication, WTC variables, and pronunciation are thus linked and serve in the present study as the departure point for investigating the effects of interpersonal audio discussions on pronunciation development in L2 students at the introductory level.

**WTC variables.** The WTC model (MacIntyre et al., 1998) focuses on two main types of variables that influence overall WTC: situational and enduring. MacIntyre et al. identified personality characteristics as enduring because this variable cannot likely be altered and may serve as the source from which the remaining variables function. A variable that can be both situational and enduring is L2 self-confidence. MacIntyre et al. contended that there are two components to the self-confidence variable, one being the learner’s cognitive evaluation of his or her L2 abilities, the other being the level of anxiety that the learner experiences when using the L2. They acknowledged that in order to achieve WTC and then actually use the L2 for communication, learners must have a sufficient self-confidence. As noted by MacIntyre et al., increased anxiety reduces self-confidence, thus negatively influencing WTC (Spielberger, 1983). Self-confidence is found alongside interpersonal motivation.
Influencing Students’ Pronunciation and intergroup motivation. This particular placement of self-confidence within the model thus links learners’ anxiety with the construct of motivation in L2 learning. Sufficient motivation and positive self-confidence result in what is termed by MacIntyre et al. as state communicative self-confidence, a variable of WTC that permits students to feel capable of communication at a particular moment when the opportunity to use the L2 is presented, leading to L2 use. Smit’s (2002) motivation in pronunciation construct pinpointed several factors specific to pronunciation that overlap with the WTC model. Smit identified statistically significant factors affecting motivation in pronunciation learning such as how students rated their chance of success (self-efficacy) and how comfortable students felt about their pronunciation (anxiety and self-confidence). According to MacIntyre et al., self-confidence determines the students’ level of desire to actually interact in the L2 and is highly correlated with overall WTC. Achieving state communicative self-confidence is representative of students’ feelings of confidence regarding L2 communication based on how they perceive their own linguistic, discourse, pragmatic, and strategic competencies. The application of the WTC construct in the present study demonstrates the importance of exploring both the psychological and linguistic factors that ultimately lead to opportunities to apply pronunciation skills through L2 use.

**Feedback and WTC.** Saint Léger and Storch’s (2009) study concerning WTC and perceived oral abilities in the L2 found that students reporting a positive self-confidence and high level of perceived oral proficiency did not feel anxious during oral activities. Similarly, MacIntyre and Doucette’s (2010) research found that WTC variables were positively correlated with perceived communication competence and were negatively correlated with L2 speaking anxiety. Saint Léger and Storch used self-assessment (SA) as a form of feedback in their study that addressed WTC and learners’ perceptions during oral speaking tasks with the goal of urging learners to become more reflective and independent. They reported that SA enabled the learners to monitor their participation more closely. As learners’ anxiety decreased, the ability to self-assess more accurately increased, creating another form of feedback in the L2 context. Murakami, Valvona, and Broudy (2012) discovered that regular assessments conducted by both students and peers, as well as instructor-provided evaluations, brought about significant increases in frequency of spoken language in the class and increased engagement with language learning beyond the classroom. Just as Saint Léger and Storch believed that SA had an overall positive impact on students, Murakami et al. found that the least effective approach when addressing oral communication with students occurred in scenarios that relied solely on assessment from the instructor. Therefore, previous research suggests that building self-confidence through L2 related anxiety reduction is essential in improving WTC in L2 learners.

**Addressing pronunciation through technology.** A more contextualized approach has been taken to develop pronunciation tasks in recent years. This approach has consisted of the introduction of audio files such as podcasts that can be created and shared by anyone who has a computer, microphone, and internet connection. Aguilar (2007) observed that podcasts are teaching materials that have been custom-made by the instructors for the needs of their own students and provide additional material to their learners. Abdous, Camarena, and Facer (2009) remarked on the
academic value of audio technologies as useful learning tools because they have been shown to improve oral and aural skills, and they lead to gains in vocabulary and knowledge of grammatical rules.

Thorne and Payne (2005) described the iPod first-year experience at Duke University where elementary Spanish students used the university’s iTunes site to download listening materials such as audio flashcards, dramatic readings from instructors, and songs for improving pronunciation. According to the American Council on the Teaching of Foreign Language’s Proficiency Guidelines (2006) regarding speaking, podcasting activities can assist novice speakers in communicating on predictable topics using words and phrases that have been recalled or memorized. Since the introduction of iPods in language courses at Duke University, researchers have sought to explore in-depth the relationship between digital audio tools and pronunciation. Sze (2006) maintained through her examination of podcasts for English language training that students who participated in podcasting typically practiced and rehearsed before submitting a final recording; through this repetition and practice, student pronunciation improved. Phonetics students in Lord’s (2008) collaborative podcast project made recordings, and then shared them through a podcasting service with their assigned group who then left written comments regarding pronunciation for each group member. Judges also rated the recordings based on overall pronunciation ability using a 5-point scale (native-like versus non-native-like). The podcasting project resulted in an increase in positive attitudes among students regarding the use of podcasting, and students reported being able to transfer the practice gained through podcasting to their daily use of the L2. Lord also reported a statistically significant improvement in the mean class rating assigned by judges regarding the students’ pronunciation ratings upon the project’s conclusion.

Early and Swanson’s (2008) research addressed multimedia tools and oral assessment, and they found that students tended to report less anxiety and more self-confidence when oral skills are assessed through technology. Similarly, Ducate and Lomicka (2009) implemented a podcasting project to refine pronunciation skills at the intermediate level. They found that students preferred this activity because they received feedback provided by native and non-native speaker judges using a 5-point comprehensibility and accentedness scale and through a rubric used by their instructor. Students also appreciated the additional opportunity for creativity; however, there were no consistent significant reports of improvements in accentedness or comprehensibility regarding the students’ pronunciation over the course of the study.

In their review of applications of academic podcasting in L2 settings, Lomicka and Lord (2010) found that pronunciation practice is one of the top three reasons why L2 educators use podcasting and predicted that pronunciation podcasting will be introduced as enhancements to language learning modules. Aguilar (2007) pointed out that one pitfall of podcasting for learning purposes is that content has, for the most part, only been delivered in an audio format. For example, visual (as opposed to aural) learners may not respond to course materials. Although there are many positive benefits of podcasting concerning pronunciation development, a continued dialogue in how to address technology and pronunciation in the CLT classroom is needed because Zhao (2003) pointed out that there are “very few comprehensive technology-based curricula that fully take advantage of the power of available tech-
nologies” (p. 22). More recent tools such as interpersonal audio discussions allow a combination of audio, video, images, and text. Ferriter (2011) noted that multimedia tools such as interpersonal audio discussions similar to VoiceThread <http://www.voicethread.com> are useful in increasing input by extending discussions originally launched in the classroom setting. Gilakjani, Ismail, and Ahmadi (2011) highlighted the benefits of multi-modal learning and how they were incorporated into computer assisted language learning. For example, Mayer and Moreno (2003) found through their research on reducing cognitive demands in multimedia learning that the combination of narration and video was more effective in student learning than narration alone. Similarly, words and images presented simultaneously were more effective than words and pictures that appear sequentially. In other words, multimedia tools are found to be most beneficial to learners when content is not visually far apart, or split, on the screen. Mayer (2005) later described that multimedia presentations were more effective because learners had the ability to interact with the presentation by controlling the pace and content. According to Ferriter, creators of interpersonal audio discussion conversations upload content in the form of images, text, or video; this content then operates as a point of departure for asynchronous discussions where users can then add their own content or comment on the existing conversation. The interpersonal audio discussion design allows a full discussion to be captured not only on one page, but within one diagram as well. Because many interpersonal audio discussion products are multimodal, differing learning styles can be accommodated, allowing users to choose their preferred method of expression.

In the present study, interpersonal audio discussions were selected to deliver collaborative activities, to observe students’ pronunciation development, and to track fluctuations in WTC variables during the process. The features of interpersonal audio discussions appear to meet several criteria listed by Dörnyei (1994) as strategies used to motivate language learners. At the language level, the community-oriented nature of interpersonal audio discussions is conducive to promoting student contact with other L2 speakers. At the learners’ level, the ability to practice and then save recorded discussions in one place assists learners in developing self-confidence and builds on strategies for improving learner self-efficacy in the L2. Another affordance of interpersonal audio discussions that is notable is requiring learners to contribute personal and novel ideas to the discussions, a feature promoting group cohesion and intermember relations (Dörnyei, 1994) because it allows students to “get to know each another and share genuine personal information” (p. 282). Furthermore, interpersonal audio discussions are cooperative learning activities, thus adding potential motivational stimuli to the L2 classroom by contributing to group cohesion and group success in addition to reflecting collaborative, participatory environments well-known to today’s students due to the influence of social media (Dörnyei, 1994; Kessler, 2013).

Finally, interpersonal audio discussions are practical in pronunciation training because of the ability to access the software from any web browser and some mobile devices. Mobile learning technologies are defined as “familiar, personal, universal, non-intrusive, lightweight, and cheap” (Salmon & Edirisingha, 2007, p. 18), thus allowing mobile technologies to thrive in a range of social settings. In Kessler’s (2010) study concerning fluency, anxiety, and the use of mobile devices for audio recording, results showed that students who recorded themselves using mobile MP3 players per-
formed slightly better in fluency. Furthermore, Kessler noted that “the environment of the audio laboratory influences some students to speak in a low volume that compromised the perceived quality of their speech” (p. 370). With mobile devices, students can avoid a laboratory setting if so desired and record when and where they feel most comfortable. In support of Kessler’s findings, Ferriter (2011) added that interpersonal audio discussions not only permit students to work collaboratively at their convenience and from any Internet-connected device, but they also enable students to refine their thought process and potential contributions to the discussion before sharing ideas publicly. For beginning or intermediate language learners, the ability to complete an oral exchange at leisure induces active listening, equal participation among learner types, and a low-stress environment (Hunter, 2012).

Taken collectively, the review of the literature shows that there are few studies that have focused on L2 learners’ pronunciation development in online, social settings facilitated through emerging technologies in addition to studying how participation in these environments affects linguistic and psychological processes represented by WTC. I use the term pronunciation development because this study does not focus merely on pronunciation proficiency, but also on the process and progress of developing proficiency monitored by students’ feelings and other affective factors (e.g. emotional reactions such as anxiety and self-confidence). Therefore, the present study was designed in order to expand upon the discussion regarding audio technologies as pedagogical tools and to observe their effects on WTC and students’ pronunciation. Understanding the process of improving pronunciation and elements affecting that progression as studied through the WTC framework were the main goals of the study. At the same time, the research intends to inform others concerning the use of audio discussions in L2 classrooms. Consequently, the following research questions guided this study:

1. How does participation in interpersonal audio discussions affect variables influencing WTC?

2. What are the effects of participation in interpersonal audio discussions on the development of students’ pronunciation skills in introductory French courses?

Methods

A mixed methods research design gathered both qualitative and quantitative data simultaneously (Heigham & Croker, 2009). The instruments include: pre- and exit-questionnaires, student SA forms and journals, and feedback provided to the student from the instructor. However, this article will focus primarily on the results gleaned from the analysis of the data collected from the SA forms (Appendix A) completed by students after participating in each of the three interpersonal audio discussion activities. Qualitative findings from Journal 3 (Appendix B) are also presented as a means to illustrate the quantitative results.

Setting and participants. Participants in the study were enrolled in three sections of second-semester French that met five times a week over one semester at the University of Alabama during the fall semester of 2012. Participants were not
compensated monetarily but rather earned credit towards the homework grade in their course as a result of their completion of the interpersonal audio discussion and SA activities (Appendix C, first in French and then in English). All students participated in the interpersonal audio discussion activities; however, I collected data from only the consenting participants. The participant sample was comprised of 17 male and 22 female students, ranging in age from 19 to 25 years old. Two students who had spent extensive periods of time in French-speaking countries and reported having extended family members with whom they spoke the target language were identified as outliers. Although neither of the students considered themselves native French speakers or proficient speakers, they were eliminated from the sample, which reduced the total number of participants to 37. Eleven (30%) participants were true beginners, and the remaining 26 participants were false beginners who reported studying French in high school. The majority of students (62%) had studied only French in previous language courses. Approximately one-third (35%) of the participants planned to major or minor in French, and 15 participants (41%) hoped to use French in their future careers.

**Role of instructors.** Two graduate teaching assistant instructors taught the participating classes. Both instructors were native speakers of English and followed the syllabus established by the department. Before participating in any activities, instructors assisted participants during class time concerning technical matters such as: how to access VoiceThread (VT) accounts, how to open VT activities, and how to record and comment in the VTs. The instructors continued to serve as guides throughout the semester, reminding students of due dates and distributing activities (in addition to assignments being posted in the course delivery system) as well as providing students with pronunciation-specific feedback after their participation in each of the three VT activities (Appendix D). Instructors used the results from this form to award a portion of the credit earned towards this assignment in the course. Students earned the remaining points for each activity through completion of the self-evaluation activities and full participation in the audio discussion activities. The instructors based their ratings solely on the participants’ pronunciation as it pertained to the categories, which were adapted from Ducate and Lomicka’s (2009) podcasting study. However, a comprehensibility section and an open-ended notes section allowed the instructor to address any other necessary issues.

**Interpersonal audio discussion activities and procedures.** Participation in the interpersonal audio discussion activities was not limited to logging into each VT activity, but included two different reflective activities as well. The reflective activities involved completing a SA form in class and journal entry online that occurred after the participants’ involvement in each of the three VT activities and after they reviewed feedback regarding their pronunciation performance from their instructor. Using Brandl’s (2002) suggestions as a model, the activities were broken down into three phases: brainstorming, initial participation, and interaction with classmates. The first deadline typically required some initial brainstorming (Step 1) followed by participating in the activity by leaving recorded comments (Step 2). The second deadline allowed time for the students to react to those initial comments by continuing to comment and interact with other VT users by asking and responding to questions (Step 3). As part of the VT2 and VT3 activities, activity guidelines instructed
students during Step 3 to visit other users’ VTs within their class and ask questions or comment in order to initiate conversation and interact rather than just work within their own group. In addition to providing two separate deadlines, the guidelines provided students with a checklist feature on the activity page in their native language that listed the tasks required to complete the activity before each deadline.

To summarize the activity details, VT1 required participants to work individually first to answer some personal questions, give a physical description, and then introduce themselves to their classmates. Once they had access to basic information about one another through the VT group conversation, they posed additional, more specific questions to their small group members such as finding out which sports others played or what they liked to do on the weekends. The activity in Appendix C represents the second activity completed by students mid-way during the semester. Although the interpersonal audio discussions were not focused on grammatical points, this activity was centered on a familiar topic they were currently covering in the course, the use of two past tenses in French, the passé composé and the imparfait. In this activity, participants described a fictitious weekend that they spent with a celebrity or notable person. After completing these first steps, participants were then directed to pre-loaded VT activities, which prompted them to talk about a prior weekend based around the person and images I chose to place within the interpersonal audio discussions. For example, images in one activity prompted the subjects to imagine that they visited the White House during winter and played basketball with the President. As an additional step to VT2, participants not only took part in their own small-group conversations, but then also visited other VTs within the class to ask questions and interact with more classmates. Finally, in the third and final VT, the participants worked together to upload their own images, text, and comments to a VT conversation that required them to plan a vacation and discuss activities associated with their selected destination. This was the only activity that required participants to create, edit, and upload to VT. In short, I selected this technology because of its ability (a) to meet certain multimedia criteria as detailed in the literature review and (b) to accommodate the communicatively based activities I had designed.

**Student self-evaluation.** Participants completed the SA form after participating in each of the three activities and after having read the instructor’s feedback concerning specific aspects of the students’ abilities in pronunciation such as accuracy, fluency, comprehensibility, and overall performance. The SA form was completed easily during the last five minutes of class. MacIntyre (2007) pointed out that adapting to anxiety can often be a coping process and may be sensitive to fluctuations over short periods of time; therefore, the student SA forms assisted in establishing shifts in WTC contributors throughout the semester such as: anxiety, perceived performance, and self-confidence.

I created the first and second parts of the SA form specifically for the present study. In Part 1, participants ranked themselves using the same categories presented on the feedback form they received from the instructor. I adapted those categories from the grading rubric used in Ducate and Lomicka’s (2009) podcasting study. Participants used these categories to compare their own pronunciation abilities with how they viewed their classmates’ abilities. Student perceptions were indicated by the use of a symbols rating system. The minus sign represented less competent than...
my peers, the equal sign represented equal or about the same as my peers, and the plus sign represented more competent than my peers. In Part 2 of the SA form, participants reported changes in variables relating to WTC in connection with their own pronunciation. In this case, the minus sign represented the verb decreased, the equal sign meant remained the same / no change, and the plus sign represented the verb increased. By using these verbs, participants indicated on five questionnaire items their feelings and perceptions regarding the VT activity and reported any changes in the following categories: perceived performance, confidence, anxiety, desire to improve, and overall pronunciation skills.

I quantified data from this instrument by assigning a numerical score to each symbol. The plus sign corresponded to a score of 2, the equal sign to 1, and the minus sign to zero. Because the participants completed this form more than once during the semester, quantifying the data allowed for it to be analyzed through repeated measures tests and through exploring relationships between the variables represented on the instrument at different points during the participants’ experience in the interpersonal audio discussions. The categories in Part 2 of the SA form are discussed in this article as they each relate to a variable in the WTC model (MacIntyre et al., 1998). For this section specifically, the scores were totaled in order to represent a measurable value of change in students’ WTC, a methodology derived from Elliott’s (1995) analysis of the pronunciation attitude inventory where negatively worded items were reversed in order to represent the highest possible score and a positive attitude, and lowest scores were assigned to the most negative attitudes.

I adapted Part 3 of the SA form from Saint Léger and Storch’s (2009) SA questionnaire items that tapped into participants’ perceived strengths and weaknesses in oral skills. This section also permitted participants to reflect upon their experience and identify areas of improvement. Through completion of this section, participants gauged how difficult or how easy they perceived pronunciation demands. Next, in Part 4 of the SA form, participants determined the strongest and weakest points of their VT contributions. They were able to choose from pronunciation accuracy, fluency, or comprehensibility, the same categories used in instructor feedback forms and in the comparison task with their classmates on Part 1. Finally, participants assigned a grade to their work that indicated perceived performance and also discussed specific steps they would take in the future to improve on weaknesses in their pronunciation - items that were also adapted from Saint Léger and Storch’s study and assisted in the students’ continued self-evaluation of their VT contributions. In addition to the completion of the SA form after each activity, participants responded freely to a journal prompt presented through the course management system as a means to allow participants to continuously self-evaluate and to articulate their experiences and thoughts in their own words.

**Results**

**Effects on WTC.** With regard to the first research question concerning the effects of participation in interpersonal audio discussions on variables influencing WTC, results from a Wilcoxon signed-rank test comparing participants’ overall scores from Part 2 of the SA form that addressed WTC variables over the course of the semester are presented in Table 1. One student did not complete the first SA
form; this student’s data were excluded in the analysis of all SA forms \((n = 36)\). The results revealed that the majority of participants experienced unchanged or increased WTC after each activity. Although the Wilcoxon signed-rank test did not produce any results indicating significant changes in WTC levels, these figures demonstrated that over the course of the semester, the majority of participants did not experience any negative effects in WTC as a result of participating in the interpersonal audio discussions; in fact, some participants began experiencing positive changes in WTC.

Table 1

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<th>Comparison</th>
<th>Increase</th>
<th>Decrease</th>
<th>No change</th>
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<tr>
<td>VT1 → VT2</td>
<td>39%</td>
<td>25%</td>
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<tr>
<td>VT2 → VT3</td>
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<td>VT1 → VT3</td>
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Next, I conducted correlational analysis on the changes in participants’ WTC. Results showed statistically significant correlations among the variables, providing support for the use of interpersonal audio discussions to focus on pronunciation skills and to positively influence WTC. The test revealed positive relationships between individual influences and overall WTC in all three VT activities. For example, at the onset of the study, L2 related confidence and overall WTC were positively associated \((r = .70, p < .001)\). Although all variables represented by Part 2 of the SA form were positively associated with overall WTC in the results of the Pearson’s correlation test, participants’ motivation, perceived performance, and self-confidence revealed the most notable relationships with overall WTC in VT2 resulting in correlation coefficients ranging from .69 to .75 \((p < .001)\). Similarly, at the end of the semester, correlation coefficients ranged from .69 to .82 \((p < .001)\), demonstrating that the same individual variables were most strongly associated with participants’ reported WTC after VT3. Additional tests carried out on the cumulative WTC scores from each of the VT activities demonstrated that participants’ overall WTC from VT1 was strongly correlated with their reported overall WTC in VT2 and VT3 \((r = .64, p < .001)\) indicating that interpersonal audio discussions were successful in maintaining favorable WTC levels over an extended period of time.

In summary, all correlations were positive, meaning that as one variable increased, the second variable also increased, indicated by the scores assigned by the participants during self-evaluation. These results showed that participants who felt positively about their overall performance in VT activities also reported high levels of confidence after their participation. This trend continued, indicated by positive
correlations across all activities, and revealed that when participants reported a favorable perception of overall performance at the beginning of the semester, they also reported high scores on overall perceived performance in later activities. Participants who reported higher scores regarding perceived improvements in self-confidence after initial participation in VT1 also noted that anxiety levels lessened and confidence ameliorated over the course of the semester. The tests, therefore, confirmed that there was not an inverse or negative association between interpersonal audio discussions and variables influencing WTC. In fact, all individual factors (perceptions of pronunciation skills, motivation, self-confidence, and anxiety) were positively correlated to overall WTC during participation in the interpersonal audio discussion activities in addition to statistically significant correlations between overall WTC from activity to activity.

**Effects on pronunciation skills.** In order to address the second research question and determine how the development of pronunciation skills was affected by participation in interpersonal audio discussions in introductory French courses, a Wilcoxon signed-rank test was performed on students' SAs which uncovered further support regarding the affective benefits of the online discussions. The test revealed that between the first and final VT activity, the audio discussion activities elicited a statistically significant change in perceived ability in regards to pronunciation skills ($Z = -2.321, p < .05$). Students' perceptions of ability concerning pronunciation skills when making comparisons with peers (from Part 1) had improved after the final VT activity. In addition, the mean score from this section of the SA improved from 4.00 after VT1 to 4.58 after VT3. In this case, students used the rating system made up of symbols; thus, the frequency of higher scores meant that they used the equal sign and plus sign more often to indicate that they felt that their performance was about the same or more competent than their peers in regards to accuracy, fluency, comprehensibility, and overall performance in VT3, demonstrating positive influences to WTC. Comments reflected students' efforts and feelings of positivity regarding their participation in interpersonal audio discussions to focus on pronunciation skills. For example, a student reported in the journal, “My classmates’ responses were helpful because they allowed me to see how other French students performed in French pronunciation. I would try to mimic those students who had impressive pronunciation skills.” Another student commented, “Knowing that they’re [sic] responses and contributions to the activities were dependent upon how well they could understand what I was saying motivated me to speak clearly and with the best pronunciation that I am capable of.” With regard to pronunciation specifically, students noted a decrease in perceived level of difficulty concerning pronunciation-specific tasks on Part 3 of the student SA form. A Wilcoxon signed-rank test revealed notable differences between VT1 and VT3 from Part 3. The test revealed that 15 of the 36 participating students (42%) reported less difficulty regarding comprehensibility, the ability to speak in a clear and understandable manner that requires little or no interpretation on the part of the listener, and reached significance ($Z = -2.120, p < .05$). One-third (33%) of students noted that efforts in achieving accuracy, or imitating and producing a French pronunciation when speaking, seemed less difficult between VT1 and VT3 ($Z = -2.134, p < .05$).
On each student SA form, participants also listed what they believed to be their strength and their weakness concerning participation on the corresponding VT activity from the following choices: accuracy (ability to produce French sounds), fluency (naturalness and rate of speech), and comprehensibility (how much was understood). Approximately half of the participants consistently ranked the category of comprehensibility as a strength rather than a weakness on the SA over the duration of the semester: 20 participants (56%) in VT1 and 15 (42%) in VT2. The results of the previously mentioned Wilcoxon signed-rank tests showed that there was a surge in confidence regarding comprehensibility near the end of the study with 19 participants (53%) reporting it as their strength. Similarly, fewer students reported difficulty in perceived ability to imitate a French accent, demonstrated by a steady decline in the fluency category being listed as a weakness (decreased 17% in VT3 from VT1). Weakness rankings remained unchanged for the category of accuracy between VT1 and VT3 (31%). Participants overwhelmingly described good pronunciation and the person they tried to imitate in the journals as having smooth and fluid speech, which may explain changes in the fluency category rather than in accuracy. These results reflected the Pearson correlations previously reported and substantiated the conclusion that the implementation of interpersonal audio discussions had positive effects on the factors influencing WTC and on pronunciation development among learners in introductory classrooms.

Discussion

The purpose of the present study was to explore interpersonal audio discussions and their effectiveness, measured through students’ self-reported WTC and perceived pronunciation abilities throughout their participation in the activities. In this study, the implementation of the interpersonal audio discussions through VT afforded students the opportunity to receive focused practice in spoken language and pronunciation. Continued participation in audio discussions and SA also presented student-centered, communicative activities that focused on the development of pronunciation skills.

The first research question sought to determine what the effects of interpersonal audio discussions such as VT are on WTC. The results showed that some students experienced increased WTC as a result of participation in the interpersonal audio discussion activities that were coupled with a feedback-supported environment and facilitated through self-evaluation techniques established in prior research (Murakami et al., 2012; Saint Léger & Storch, 2009; Smit, 2002). Analysis of the Pearson correlation tests demonstrated that participation in the initial audio discussion activity had a prolonged effect on WTC until the end of the semester, a result that supports Arnold’s (2007) findings that the affective benefits of computer-mediated communication (CMC) manifest themselves long-term rather than merely being experienced temporarily during the few moments of actively participating in CMC. This is evidenced by the positive associations found in overall WTC after participation in all three VT activities. Because of the multiple statistically significant correlations between individual WTC variables and overall WTC, the results demonstrated that (a) interpersonal audio discussions can effectively be used to promote WTC and (b) that participants are likely to experience sustained or increased WTC with ongoing participation.
The second research question sought to determine the effects of participation in interpersonal audio discussions on the development of students’ pronunciation skills. The results of the study revealed that students perceived pronunciation tasks to be less difficult at the end of the semester and reported higher self-confidence and estimations of their overall performance in the oral VT activities. Although the repeated measures test revealed that more participants experienced unchanged overall WTC (47%) rather than increased WTC (28%) at the end of the semester in VT3, statistically significant correlations between the individual variables of WTC in the three SA forms demonstrated the positive effects of continued participation and evaluation of progress on WTC and students’ perceptions of pronunciation skills. However, it is debatable that the development of pronunciation is unrelated to WTC. Nevertheless, MacIntyre and Doucette (2010) pointed out that modern pedagogical methods stress practice in speaking in order to learn the L2, thus students who take advantage of opportunities to communicate and have a higher WTC increase their chances in speaking, L2 learning, and an improved proficiency. The data in the present study indicated that continued participation in the audio discussions reflected positive changes in WTC variables and the students’ perceptions of their pronunciation abilities. Therefore, when collectively considering the results, the use of interpersonal audio discussions for pronunciation development appears promising.

There are several implications of this study for CLT classrooms comprised of introductory L2 learners. First, results support the notion that interpersonal audio discussions such as VT are useful classroom supplements for pronunciation development. Derwing and Munro (2005) noted that presenting pronunciation to students should be preceded by the exploration of venues for pronunciation instruction that best meet students’ needs. Because WTC is a reflection of self-confidence, motivation, and desire to communicate with others (MacIntyre et al., 1998), the results of the present study qualify interpersonal audio discussions as an appropriate tool for students learning pronunciation. Furthermore, the VT technology specifically offers free or affordable paid accounts, and there is no software to download as it is web-based which may benefit educators with limited funds and resources. Additionally, the study highlights the importance of the need for activities that focus solely on spoken language followed by feedback that also accomplish the communicative goals of today’s L2 classrooms. The participating instructors in the study agreed in an exit interview that although the interpersonal audio discussion activities did not explicitly teach rules of French pronunciation, they felt that their students developed an awareness of pronunciation that they would not have had otherwise because pronunciation is not a large focus in the introductory curriculum.

As with empirical studies, there are limitations in the present study. While the data evidenced positive gains in WTC and students’ perceptions of pronunciation skills through the use of interpersonal audio discussions as a means to present pronunciation in introductory classrooms, the results may not be generalized among all populations, for example more advanced learners or learners in exclusively online settings. In addition, although the response rate was high, I surveyed a small number of students. Also, there was not a control group in the study that would determine if a non-participating introductory classroom would experience the same results. The study included extensive instructor- and self-evaluation as part of participation in
the activities. Therefore, the practicality and effectiveness of using interpersonal audio discussions as casual supplements without feedback or assessment is uncertain. These limitations, however, reveal opportunities for future research in the area. It would be of interest to study this emerging technology in online L2 courses in order to determine useful activities and tools for reaching desired outcomes in the learning of pronunciation in this unique setting. In particular, it may be beneficial to introduce interpersonal audio discussions in environments where pronunciation learning holds a larger stake in the curriculum, such as a phonetics course, in order to expand upon the role of interpersonal audio discussions in L2 education. It is also important to note that the data presented in this article were self-reported, thus conducting observations or a case study may provide new perspectives on this topic.

As pointed out in the introduction, CLT classrooms continue to evolve and offer both form-focused and meaning-based instruction (Larsen-Freeman 2007; Spada 2007; Savignon, 2007). This notion has been applied in the present study to the development of pronunciation skills. Although the study has certain limitations, it does explore an emerging technology that delivers both form-focused and meaning-based activities with a focus on pronunciation and builds upon previous research. Additionally, positive changes in students’ WTC highlight the fact that early pronunciation learning and the development of pronunciation skills can be accomplished in introductory classrooms with lasting effects. It is intended that the data and insight gained from this research study will serve the purpose of continuing to inform instructors and those within the field about practices in pronunciation teaching and learning.

References


Appendix A

VoiceThread Self-Assessment Form

Date: ____________________

VoiceThread# (circle one): Practice #1 #2 #3

My VoiceThread ID: ___________________________________________________

Part 1: Use the symbols provided below to self-evaluate your performance in the VoiceThread by comparing it to that of your peers.

- (minus sign) → less competent than my peers
= (equal sign) → equal with or about the same as my peers
+ (plus sign) → more competent than my peers

When comparing myself to my peers in the VoiceThread….
1. The accuracy (specific vowel/consonant sounds) of my pronunciation in French is __________.
2. My fluency (speed/pauses) when speaking is __________.
3. My comprehensibility (able to be understood) when speaking is __________.
4. My overall performance in the VoiceThread is __________.

Part 2: Use the symbols provided below to express your feelings regarding this particular VoiceThread experience.

- (minus sign) → decreased
= (equal sign) → remained the same / no change
+ (plus sign) → increased

1. I believe that my pronunciation skills have __________ from participating in this week's VoiceThread.
2. Communicating and working with others through VoiceThreads contributed to a/an __________ desire to improve my pronunciation.
3. Knowing that peers are listening to my VoiceThread resulted in __________ performance in my pronunciation today.
4. My participation in this week's VoiceThread resulted in __________ confidence regarding my pronunciation skills.
5. Feelings of anxiety regarding my pronunciation have __________ after participating in this week's VoiceThread.
Part 3: Use the symbols provided below to express how easy or how difficult it was to participate in the VoiceThread.

− (minus sign) → difficult or very difficult
= (equal sign) → ok, somewhat challenging
+ (plus sign) → easy or very easy

1. It is _______ for me to speak fluently with little hesitation and pausing.
2. It is _______ for me to speak in a clear and understandable manner that requires little or no interpretation on the part of the listener.
3. It is _______ for me to imitate and produce a French pronunciation when speaking.
4. It is _______ for me to relax and have fun while performing an oral task in French.
5. It is _______ for me to be excited and willing to participate in the VoiceThread activity.

Part 4: Answer the following short answer questions by sharing your personal responses.

1. What was the strongest point in this VT contribution concerning your pronunciation? Check one item.
   _____ accuracy (ability to produce French sounds)
   _____ fluency (naturalness and rate of speech)
   _____ comprehensibility (how much was understood)

2. What was the weakest point in this VT contribution concerning your pronunciation? Check one item.
   _____ accuracy (ability to produce French sounds)
   _____ fluency (naturalness and rate of speech)
   _____ comprehensibility (how much was understood)

3. What do you plan to do specifically to focus on an area of improvement concerning your pronunciation?
   ____________________________________________________________

4. If you had to give yourself a grade based on your overall pronunciation on this VoiceThread contribution, what would it be?
   Circle one.   > 90%  80-89%  70-70%  < 70%
Appendix B

Journal 3 Prompt

Please complete the journaling activity AFTER you have received feedback from your instructor on the activity (VT 3) and you have completed the self-assessment form in class. Please use a minimum of 50 words, clearly explain your point of view or opinion, and respond in English. The table below represents a list of features you accessed when using VoiceThread in your French class. Please read over the features and then respond to BOTH letters A and B.

A. During your experience using VoiceThread, did one of these features motivate you at all to improve your pronunciation skills? Why?

B. During your experience using VoiceThread, did any of these features have a negative impact on your motivation to improve your pronunciation skills? Why?

Features of VoiceThread

1. Having an assignment that allowed me to focus only on spoken language as a means of expression
2. Knowing that my peers would listen to my contributions
3. Using emerging technology to show my competency in French
4. Using images to help get my point across
5. Collaborating with my peers to create an original VoiceThread
6. Being able to easily listen to my classmates’ recordings in the VoiceThread format
7. Knowing that my instructor would give feedback on my contributions
8. Using images to better understand my peers’ contributions
9. Engaging in oral speaking practice with peers outside of the classroom
10. Having another outlet to listen to and express myself in French

Appendix C

Sample Interpersonal Audio Discussion Activity

VoiceThread Activité 2, l’imparfait et le passé composé

Deadline 1:

Deadline 2:

Étape 1

Pour compléter cette activité, votre prof va désigner des groupes. Vous allez participer à votre groupe de VoiceThread mais vous allez travailler individuellement aussi.
D'abord, imaginez que vous avez passé un week-end formidable avec la star de vos rêves. Comment était le week-end ? Qu'est-ce que vous avez fait?

Maintenant, regardez ce clip:
http://goanimate.com/videos/0NnfTGpxHT5c?utm_source=linkshare

Ensuite, choisissez une star que vous aimez et racontez votre week-end et distinguez entre le passé composé et l'imparfait. Enfin, organisez vos idées dans le tableau suivant (travail individuel).

<table>
<thead>
<tr>
<th>Un week-end avec…</th>
<th>le passé composé</th>
<th>l'imparfait</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qui est-ce?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Comment était-il/elle ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Qu'est-ce qui s'est passé ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Quel temps faisait-il ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) De quoi est-ce que vous avez parlé ?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Où est-ce que c'était ? (chez vous ? au restaurant ?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) C'est à vous de choisir un souvenir particulier associé à ce week-end extraordinaire!</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Étape 2
Allez sur votre site VoiceThread qui correspond à cette activité. Imaginez que vous avez passé le week-end avec cette personne célèbre. Votre groupe va travailler ensemble pour inventer l'histoire complète. Commentez au moins 3 fois et faites référence au tableau que vous avez créé pour ajouter des détails et parler de ce week-end extraordinaire (travail individuel). Employez le passé composé et l'imparfait selon le contexte.

Modèle : Kim (Kardashian) et moi avons fait du shopping dans la rue Rodeo. Il faisait beau en Californie mais Kim était fatiguée et désagréable. Nous avons dépensé beaucoup d'argent.

Before Deadline 1:

☐ Did you imagine your ideal weekend with your favorite celebrity?
☐ Did you visit your group’s VoiceThread and find out which celebrity you met over the weekend?
☐ Did you add at least 3 details in the passé composé or the imparfait to the slides in the VoiceThread to help build the story of an extraordinary weekend?
Étape 3
Votre professeur va désigner un autre groupe et votre groupe va travailler avec ce groupe. D'abord, visitez le VoiceThread de l'autre groupe. Puis, chaque membre de votre groupe pose au moins deux (2) questions. Voici quelques possibilités pour vous aider:

- Comment étaient les ami(e)s de _______?
- Qu’est-ce que vous aimiez / vous n’aimiez pas ?
- Quand vous êtes arrivé(e)(s), _______ a été surpris(e) / était heureux(se) ?
- La famille de _______ était comment ?
- Vous avez téléphoné à votre famille pour raconter le week-end ?

Enfin, allez sur votre site VoiceThread et répondez à au moins une question faite par vos visiteurs.

Before Deadline 2:
- Did you listen to another group’s VoiceThread?
- Did you leave at least 2 recorded questions with your microphone or webcam?
- Did you listen to comments left within your own VoiceThread and respond?

English Translation:
VoiceThread Activity 2, the imperfect and the compound past

Deadline 1:
Deadline 2:

Step 1
To complete this activity, your professor will assign groups. You will participate in your VoiceThread group, but you will also work individually. First, imagine that you spent an amazing weekend with the celebrity of your dreams. What was the weekend like? What did you do?

Now, watch this video clip:
http://goanimate.com/videos/0NnfTGpxHT5c?utm_source=linkshare

Next, choose a celebrity that you like and tell about your weekend, distinguishing between the compound past and the imperfect. Finally, organize your thoughts in the table below (individual work).

<table>
<thead>
<tr>
<th>A weekend with…</th>
<th>Compound Past</th>
<th>Imperfect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) What was he/she like?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) What happened?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3) What was the weather like?

4) What did you talk about?

5) Where were you (at your house? at a restaurant?)

6) It’s up to you to choose a particular memory that reminds you of this extraordinary weekend!

### Step 2

Go to the VoiceThread site that corresponds to this activity. Imagine that you spent the weekend with this celebrity. Your group will work together to invent a story. Leave at least 3 comments and reference the table that you completed to help add details and talk about your amazing weekend (individual work). Use the compound past and the imperfect depending on the context.

**Model:** Kim (Kardashian) and I went shopping on Rodeo Drive. It was a nice day in California but Kim was tired and unpleasant. We spent lots of money.

**Before Deadline 1:**
- Did you imagine your ideal weekend with your favorite celebrity?
- Did you visit your group’s VoiceThread and find out which celebrity you met over the weekend?
- Did you add at least 3 details in the compound past or the imperfect to the slides in the VoiceThread to help build the story of an extraordinary weekend?

### Step 3

Your professor will assign another group, and your group will work with this group. First, visit the other group’s VoiceThread. Then, each member of your group asks at least 2 questions. Here are some suggestions to help you:

- What were _______’s friends like?
- What did you like / dislike?
- When you arrived, was _______ surprised / happy?
- What was _______’s family like?
- Did you call your family to tell them about the weekend?

Finally, go back to your VoiceThread and respond to at least one question left by your visitors.

**Before Deadline 2:**
- Did you listen to another group’s VoiceThread?
Did you leave at least 2 recorded questions with your microphone or webcam?
Did you listen to comments left within your own VoiceThread and respond?

**Appendix D**

**VoiceThread Instructor Feedback Form**

VoiceThread# (circle one)  
#1  #2  #3  

Student name: _________________________________________________________

*This form is for instructor use only.* Please keep all pages attached. Use the scale below to rate each item in the tables. You will then assign an overall score for Parts 1-3.

+ (plus sign) → above average  = (equal sign) → average  – (minus sign) → below average

**Part 1**

**Pronunciation accuracy:** production of French vowel and consonant sounds

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silent letters (e.g., final consonants)</td>
<td></td>
</tr>
<tr>
<td>L’enchaînement</td>
<td></td>
</tr>
<tr>
<td>Liaison</td>
<td></td>
</tr>
<tr>
<td>Nasal vowels</td>
<td></td>
</tr>
<tr>
<td>Other (please explain):</td>
<td></td>
</tr>
</tbody>
</table>

**Overall Score Part 1:** 1 2 3 4 5 6 7 8 9 10

10 = no or few errors in pronunciation, 1 = meaning unclear due to abundance of pronunciation errors

**Part 2**

**Pronunciation fluency:** rate and naturalness of speech

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of speech</td>
<td></td>
</tr>
<tr>
<td>Normal pausing*</td>
<td></td>
</tr>
<tr>
<td>Intonation</td>
<td></td>
</tr>
<tr>
<td>Articulation</td>
<td></td>
</tr>
<tr>
<td>Stress/rhythm</td>
<td></td>
</tr>
<tr>
<td>Other (please explain):</td>
<td></td>
</tr>
</tbody>
</table>

*Normal pausing is under 3 seconds (Riggenbach, 1991)*
Overall Score Part 2:  1  2  3  4  5  6  7  8  9  10
10 = natural flow with little or no starts and stops, 1 = many hesitations and recording sounds “read aloud”

Part 3

Comprehensibility: how much was understood?
Instructors: provide score and leave comments when necessary.
Overall Score Part 3:  1  2  3  4  5  6  7  8  9  10
10 = extremely easy to understand and readily comprehensible requiring no interpretation on the part of the listener, 1 = impossible to understand
Comments/Notes:

Part 4

Overall Assessment
Teacher comments and notes:
Final Score: _______ / 30 points
Instructors: total ratings from Parts 1–3 to calculate final score.