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A thesis submitted to the faculty of
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Master of Arts

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ABSTRACT

The Effects of One-on-One Teaching on Chinese
Speaking Ability, Student Anxiety,
and Student Preference

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Master of Arts

One-on-one language teaching holds great potential for improving students' speaking ability. Programs such as Brigham Young University's Chinese Flagship program use a one-on-one approach to help students learn how to use the language in respect to their desired profession. The Ohio State University uses individualized instruction as an alternative to traditional classroom-based classes. However, little to no research has compared one-on-one language teaching to traditional group classroom teaching in terms of language gains. Many studies show that one-on-one teaching can lead to language improvement, but do not attempt to compare method effectiveness. Additionally, although anxiety in language learning has been well researched, a comparison of anxiety between teaching methods has not been attempted. There are few studies that investigate anxiety between one-on-one and group methods.

The present study attempts to close this gap in the research. This is done by comparing speech gains between a one-on-one teaching method and a group teaching method. The one-on-one method includes weekly five to ten minute sessions, and the group method includes weekly 50-minute sessions. Speech gains are defined as gains in fluency (determined through speech rate), pronunciation (consonants, vowels, and tones), and syntactic accuracy (determined by error free T-units). Speech gains are assessed via a pre/post-test design. Furthermore, the present study attempts to compare anxiety between the two teaching methods. This is done by administering the anxiety survey Foreign Language Classroom Anxiety Scale twice. Students were asked to respond to one survey in reference to the one-on-one setting, and respond to the other survey in reference to the group setting. Finally, students filled out a preference survey at the end of the study to determine student perception on teaching method effectiveness.

Results show that there is no statistical difference in speech gains in five-ten minute one-on-one sessions compared to 50-minute group sessions. This is true for all four areas assessed: fluency, vowel/consonant pronunciation, tone pronunciation, and syntactic accuracy. This shows that short sessions of one-on-one teaching can produce the same speech gains as longer sessions of group teaching. Survey results show that anxiety levels were the same between the two teaching methods. Preference surveys show that the majority of students: 1) feel that the one-on-one method is effective in improving their speaking ability, 2) would choose to take a class that includes one-on-one teaching, 3) and enjoy coming to one-on-one sessions. It further shows that 50% of students feel that one-on-one teaching is more effective than group teaching, and feel more comfortable in one-on-one sessions than in group sessions.

Keywords: one-on-one, individualized, group, speaking, fluency, pronunciation, anxiety

ACKNOWLEDGMENTS

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List of Abbreviations

AMQ = Achievement Motivation Questionnaire

CAIM = Computer Assisted Instruction Method

BYU = Brigham Young University

ESL = English as a Second Language

FLCAS = Foreign Language Classroom Anxiety Scale

OSU = The Ohio State University

PIM = Programmed Instruction Method

SAS = Statistical Analysis System

SOPI = Simulated Oral Proficiency Interview

TAI = Trait Anxiety Interview

WTC = Willingness to Communicate

Chapter 1: Introduction

One-on-one teaching is a method that offers some distinct differences from group classroom teaching. These result from varying degrees of teacher-to-student interaction and student-to-student interaction. In a group setting, the teacher's attention must be divided between students. In contrast, a one-on-one method gives students full and personalized attention from the teacher/tutor. Christensen and Wu (1993) further expound that a one-on-one approach can give students much more performance time compared to normal classroom instruction. In a typical 50-minute language class, they estimate that each student only gets about 4-6 minutes speaking. One-on-one teaching can provide much more time for each student to speak in the target language. Moreover, each student has his or her own struggles and needs, which are difficult to address in a group setting. Indeed, many teaching professionals will agree that, if it were feasible, teaching every student one-on-one is more effective than group instruction.

Unfortunately, teaching each student individually can be far from feasible. If a teacher were to meet with each student for ten minutes, it would take two hours to get through a class of twelve. Logistically it often makes more sense to teach all students together. Other tasks that are easy to accomplish in group settings, such as giving announcements, general instruction, and collecting homework, become more difficult as they must be done with each student individually. Each program that implements a one-on-one strategy must therefore find a way to deal with these issues.

One example of a one-on-one language program that persists to today, was described by Light and Walker (1982). They described how The Ohio State University (OSU) piloted what is now the longest running individualized program in the US

(https://cllc.osu.edu/undergraduate/individualized). Their model is a form of one-on-one teaching that includes doing the entirety of work for a course in individualized meetings and through autonomous learning. This is offered as an alternative to taking a language class in a traditional classroom setting. Their model allows much more flexibility than a typical language course. Students can choose to take 1 to 5 credits in a semester, allowing students to go at their own pace. For each number of credits, students meet once a week for a 15-minute one-on-one. A student taking 5 credits of Chinese would therefore participate in five 15-minute one-on-one sessions per week (M. Christensen, personal communication, March 22, 2017).

Light and Walker reported that they saw a 25% increase in language course enrollment during the first two years after introducing this option. Additionally, students who go through courses using individualized instruction are able to integrate into traditional classroom courses in their target language without difficulty. This shows that the one-on-one model has potential to provide an alternative method to language learning without loss of student learning.

Another example of one-on-one instruction is described by Christensen and Wu (1993) who used this teaching method to help heritage learners overcome their unbalanced skills of reading and writing compared to speaking and listening. More recently, Christensen and Bourgerie (2015) described the Chinese Flagship program at Brigham Young University (BYU), which uses an individualized approach to help prepare students to use Chinese as professionals in their various fields of study. Their one-on-one instruction includes two 50-minute sessions each week with a native speaker. Sessions are held completely in Chinese, and the purpose of these sessions is to help

students with language and content that relates to the students' desired profession. This model of individualized instruction, along with other opportunities such as study abroad, prepare students to continue their studies and/or work with China.

The use of one-on-one teaching in the Chinese Flagship program at BYU is feasible partially because of the relatively low number of students enrolled, compared to all students studying Chinese. The feasibility of providing tutors to each language student in a school is quite difficult. This study, therefore, attempts to determine how short one-on-one sessions compare to typical classroom sessions in terms of speaking gains. Understanding how gains compare between these two methods can provide critical understanding of how one-on-one teaching can be implemented in language learning settings. Furthermore, levels of anxiety are compared between one-on-one sessions and classroom sessions. This attempts to provide a more holistic view of how these two methods compare, and to provide important data to the fields of one-on-one teaching and classroom teaching.

Chapter 2: Review of Literature

One-on-One in Other Disciplines

One-on-one teaching has been a subject of interest across disciplines for a long time. Teachers quickly come to recognize that their attention and time cannot be given exclusively to each student. The larger the class, the more pronounced this becomes. Additionally, due to students' varying backgrounds and learning styles, each student needs individualized attention in order to reach their learning potential. Other than the one-on-one method, similar teaching methods exist that also attempt to address these issues, such as individualized instruction, distance learning or other self-instructional contexts (White, 2006; Bown, 2004).

Research in individualized teaching shows that this method can produce much greater results than group teaching. One study compared a tutoring method to a traditional classroom method in terms of qualitative test results. Participants included 278 fourth and fifth graders, at two different sites. At each site, the students were split into two control groups and one treatment group. The three groups were of similar size, with the two control groups split up into approximately 30 students per class, and the treatment group split up into groups of three students per teacher. The topic of instruction was probability, which was chosen because it was a new topic for these students. Instruction time was the same for the three groups, and lasted for three weeks, or approximately 8.3 hours of actual instruction per student. Results showed a statistically significant difference between the groups. The average tutored student scored approximately 95 percent above control students. Only the top 20 percent of control students achieved the same level as 90 percent of tutor students (Burke, 1984).

These results show an immense difference in teaching efficacy of an individualized approach compared to traditional group teaching. Certainly, all institutions would strive to use such a teaching method in order to achieve similar results. Unfortunately, resources usually prevent the application of such a method. In Burke's (1984) study, a vast number of teaching hours would be required to teach students three-to-one. An even greater amount would be required for a one-on-one approach. Due to time limitations, the one-on-one method is often not implemented even though it poses such great promise for learning outcomes.

Computer-based instruction is an alternative method used to reduce the amount of teaching time required in one-on-one teaching. One study used the Computer Assisted Instruction Method (CAIM) and the Programmed Instruction Method (PIM) to help students retain what they learned in a genetics class. All students were initially taught for five days in 45-minute classroom sessions. The students took a pre-test after receiving the classroom instruction, then a post-test was administered 30 days later. During the time between tests the experimental groups received reinforcement instruction through CAIM and PIM, while the control groups did not receive any additional instruction. Results of the post-test showed the experimental groups were successfully able to retain what they learned, by scoring similarly on both tests, while the control group's scores decreased. (Sagy, Ravi & Ananthasayanam, 2009).

From this study we see that computer-based instruction can provide an alternative to traditional individualized instruction methods. One draw-back of Sagy, Ravi & Ananthasayanam's study is that the experimental group received more instruction than the control group. Students are expected to better retain what they learned if they receive

more instruction and practice. It would be interesting if the control group also received additional instruction, but in a group classroom environment; this would show how the individualized computer-based method compares to traditional classroom methods. Nonetheless, results are still useful to the field of individualized instruction, as they show that computer-based instruction can provide students with useful individualized teaching that does not require extra time from teachers.

Group Speaking

Many pioneers of second language acquisition research such as Lev Vygotsky (Vygotsky, 1978), Merrill Swain (Swain, 1985), and Michael Long (Long, 1981) all theorized about the importance of producing output in order to learn a language. As students actually produce language, with the intent to communicate in a meaningful way, acquisition occurs. Many studies today attempt to understand this process more in-depth via classroom research.

There is a large body of research on various teaching methods to improve speaking ability in the classroom, and many aspects that are unique to the classroom have received great attention. Saeed, Khaksari, Eng, and Ghani (2016) studied student-to-student interaction in a classroom setting and found that greater interaction between learners resulted in greater speaking gains. Other studies give similar results, showing that reducing speaking reticence and increasing student participation improves speaking ability (Tsou, 2005). Factors that can lead to increased interaction and improved speaking ability in the classroom include: encouraging students to comment more, explaining the importance of classroom discussion, giving instruction on communication strategies,

discussion of teacher and student roles, and engaging students in communicative activities (Tsou, 2005).

Another study implemented a unique method of group instruction which took place outside of the classroom. Through 50-minute Open Discussion Sessions which took place weekly for 15 weeks, students increased their speaking ability considerably. Results showed improvement from a pre-test mean of 19.43/100, to a post-test mean of 69.76/100. This treatment was given to 35 students of English as a foreign language, and included whole group instruction, whole group discussion, and smaller group discussion of seven students per group (Daif-Allah & Khan, 2016). This gives further evidence that increasing student interaction during group instruction results in increased speaking ability. However, comparing the use of such strategies between classroom instruction and one-on-one instruction has yet to be explored.

One-on-One Speaking

Unlike group teaching, one-on-one teaching has received very little attention in language research. Even less attention has been given to experimental studies that compare one-on-one language teaching to classroom teaching. Fortunately, some studies have shown results that give clarity to some of the benefits and challenges of one-on-one teaching. For example, Smith (2012) showed that participants who received one-on-one tutoring in pronunciation were able to improve a pronunciation score of 52% to 62% over a six to eight-week period. Seventeen ESL students participated in this study, and received individualized pronunciation instruction from graduate student tutors. With weekly one-hour sessions, each student received six to eight hours of pronunciation teaching in total. They found that students improved in the four aspects of pronunciation

being investigated: reduced vowels, contracted words, intonation contours, and primary phrasal stress. Additionally, questionnaires showed that participants rated the overall experience favorably. These results show great promise for one-on-one pronunciation instruction. Admittedly, some amount of improvement is expected when students are given extra instruction. Additionally, it is hard to say how much of the increase came from other factors such as specific method of pronunciation instruction, self-learning techniques, and attitudinal factors.

Research can shine some light on how influential self-learning techniques and attitudes can be in regards to language ability. Gan's study (2004), for example, showed that self-learning techniques (such as "memorize English words by saying them or writing them repeatedly") had an even greater effect on language achievement than attitudinal factors. This makes it difficult to know how much improvement in the previously mentioned study by Smith (2012) came from the one-on-one method. We do not know if these students might have studied in other ways or used more effective autonomous learning techniques in conjunction with the one-on-one approach. This leaves us unsure as to whether Smith's results truly came from the one-on-one tutoring method or from any of the previously mentioned factors. To help answer this question, the study could be repeated including two groups where some are taught in a group/class environment and some are instructed one-on-one with a comparison between the two groups. Additionally, a survey could be given, asking students what other methods they used to practice with the language. The lack of such studies shows that the field of one-on-one teaching needs more data. The present study did not attempt to determine

students' study habits; however, it is important to consider how such factors might relate to results obtained.

Group Anxiety

Anxiety has been characterized by feelings of tension, nervousness, and worry aroused by the autonomic nervous system (Horwitz, Horwitz, & Cope, 1986). High anxiety makes it difficult for students to successfully learn. Current research on anxiety, as well as the related topic of motivation, is shaped by Krashen's affective filter hypothesis (1987), which expounds on the necessity for students' anxiety to be low in order to successfully acquire a language.

To better understand how anxiety and motivation affect students, there are a great number of studies today that look at anxiety and motivation in classroom teaching. For example, one study showed that motivation and self-confidence positively affected success in reading and writing with beginning level Chinese students. Anxiety, on the other hand, negatively affected student success in writing (Hoskin, 1997). Hernandez (2008) showed similar results, which showed that motivation had a strong relationship with student achievement. Motivation was a significant predictor of Simulated Oral Proficiency Interview (SOPI) scores, final exam scores, and desire to continue studying Spanish.

Just as motivation can predict student success, anxiety significantly affects students' ability to be successful in class. Motivation and anxiety are also critical determinants for how meaningfully students participate in class. Student willingness to communicate (WTC) increases as motivation increases and anxiety decreases. There are many factors that affect student motivation and anxiety. Baran-Lucarz and Malgorzata

(2014) asked 151 Polish learners of English "What might be the causes of your reluctance to speak during English class?" They discovered that reluctance to speak in class resulted greatly from participants' fear of being negatively evaluated by others. Factors that influenced this fear, or anxiety, included: size of group, level of acquaintance with others, type of tasks, topic of conversation, and atmosphere. Smaller groups and higher level of acquaintance were two aspects that especially increased students' WTC.

Type of task is another area that shows interesting results in other studies. For example, Kim (2009) surveyed 59 Korean college students learning English, trying to determine if student anxiety and motivation remained stable between different learning contexts. They found that students experience anxiety differently depending on the type of language course. All participants were enrolled both in a reading course and a conversation course. A variety of instruments were used: The Trait Anxiety Inventory (TAI), the Korean version of the Foreign Language Classroom Anxiety Scale (FLCAS), the Achievement Motivation Questionnaire (AMQ), and a background questionnaire. A pre-test and two post-tests were given in both courses, each specifically for that course. Results showed that anxiety was significantly higher in the conversation course than the reading course. Some students showed high anxiety in both courses, while others showed low anxiety in the reading course. It is telling that some students with very low anxiety in the reading course showed anxiety levels just as high in the conversation course as the high anxiety group. The learning context affects the amount of anxiety a student feels, and speaking is a task that provokes higher anxiety than other tasks. The present study seeks to determine how anxiety levels are affected by differing contexts: in speaking classroom sessions and in speaking one-on-one sessions. There is little or no research that

has sought for this type of comparison between classroom anxiety and one-on-one anxiety.

One-on-One Anxiety

Student anxiety, motivation, and attitudes have a profound impact on language learning success. In a one-on-one situation, these important components can be affected differently than in a traditional classroom. There is a new dynamic as a student sits down one-on-one with their teacher.

Weigle and Nelson (2004) conducted a study with three participants who sought help from tutors at an ESL writing center. Two tutor sessions were recorded of the three students and their tutors and they were all interviewed separately. From the interviews and analysis of recordings, they found that students generally reacted better to tutors who took on a peer-like role rather than a controlling role. These results, however, may not be applicable to other types of one-on-one situations. These tutorials were offered specifically for writing help, and the tutors were also students. Other situations might find that a different teacher role would be more effective. Even though these results may have limited application, there is value to looking at how the teacher-student relationship affects motivation in one-on-one settings.

Xiao (2012) considered the teacher-student relationship in a study with 60 students and 32 tutors of Chinese in a distance-learning context. In this program, students complete most coursework online, with about 24 hours of face-to-face tutor sessions. Participants wrote essays about the tutors' impact on the students' learning motivation. Additionally, 32 of the 60 students, and 12 of the 32 tutors were interviewed for more in-depth information. He found that 65% of students in his study expressed that they

considered the student-tutor relationship to highly impact student motivation, with having good rapport as the basis for this relationship. Furthermore, he found that student motivation was affected by their tutor's amount of experience, and the students' perception of tutor competence, responsibility, empathy, and approachability. The present study did not attempt to investigate the relationship between student and tutor, however these factors are important to consider when considering how anxiety and motivation might differ between learning contexts.

Apart from teacher characteristics, other factors in a one-on-one session, such as duration, content, and student attitudes, influence motivation and anxiety. Matthews (2010) found that motivationally effective tutoring sessions tended to be shorter, focus on target language (TL) structure explanations, and cover more rules per minute. When considering Matthew's study, it is important to consider the purpose of the tutor sessions. They were in place as an additional help to any student who wished to come. Most students asked for structural help, and there was very little use of the TL. This style of session might make results less applicable to other types of one-on-one approaches. For example, a weekly one-on-one meeting that is required for a course in which the TL is mostly spoken would probably show different results than Matthew's study. The present study implements such an approach and attempts to provide data for this context.

In addition to student, teacher, and one-on-one session factors, Lin, Chao, and Huang's (2015) study provides very interesting findings. A total of 100 students participated in their study, in which they participated in computer-based lessons that used facial recognition and other technologies to determine emotions and anxiety. They found that more than half of the 100 students experienced anxiety, including beginners and

more experienced learners. However, those with more confidence in their abilities tended to not have anxiety. Furthermore, students showed more anxiety during communicative situations and showed the most amount of anxiety while speaking to native speakers. These findings are very interesting, and applicable to many language learning environments. The findings are especially interesting for a one-on-one setting when deciding whether or not to use a native speaker as the teacher/tutor. Additionally, one-on-one programs that focus on communicative situations might consider how these activities affect student anxiety. Indeed, a program that combines a native one-on-one teacher and focuses on communicative activities might foster the highest levels of anxiety. Further research needs to be conducted to see if anxiety levels decrease if students are repeatedly put in communicative situations, including speaking with natives.

Anxiety and motivation have also been researched in contexts similar to one-on-one learning, such as distance learning or self-instruction. These methods are important to consider because one-on-one teaching approaches often include more self-instruction than traditional group teaching. Motivation becomes especially important in this context because it requires more self-management. Research shows students can feel isolated from the learning group and therefore experience a loss in motivation. Another factor that greatly influences students' success is how they feel about how learning occurs, whether it comes from oneself or is transferred from an expert (Bown, 2006). When considering the one-on-one context, it is important to decide to what degree self-instruction will be used and how this will affect students' motivation. The current study did not require students to do more self-instruction than is typically required in a traditional group class.

Summary and the Present Study

Improving students' ability to speak in the target language is an essential part of any language class. Various methods to accomplish this have been researched, and even more methods exist in the classrooms around the world. Many of the researched methods can be carried over to the one-on-one setting; however, some cannot. Topics such as interaction and reticence are different in a one-on-one dynamic. With one teacher and one student, interaction is very different than in a classroom of fifteen. Reticence also displays itself differently in a one-on-one context; relationship with the teacher becomes much more important than classroom factors. These differences create a need for studies that focus on improving speaking skills in a one-on-one context. However, searching for effective methods to teach speaking through one-on-one instruction is insufficient. Even though some studies have shown how speaking can improve in one-on-one (Smith, 2012), there is no evidence as to whether it is more effective and to what degree. Discovering how one-on-one teaching compares to classroom teaching, in terms of language learning, will provide critical knowledge to the field. The present study seeks to add to the field in this way.

Affective factors such as anxiety and motivation play an important role in the consideration of a one-on-one teaching method. Fortunately, there is a fairly large body of articles on this topic. Here, again, no comparison of methods is made. As Kim (2009) discovered, different tasks and settings result in differing levels of anxiety. Little to no research has investigated students who participate in a one-on-one setting and a classroom setting at the same time, and have their anxiety compared between the two

settings. The present study attempts to obtain such data through comparison of the same students in the two contexts.

Research Questions

1. Will two weekly 10-minute sessions of one-on-one instruction result in greater speaking gains than two weekly 50-minute sessions of group instruction?

2. How will one-on-one teaching compare to group teaching in regards to student anxiety?

3. Which teaching method will students perceive to be more effective?

Chapter 3: Methodology

Participants

The population of direct interest is beginning Chinese (Mandarin) students at the college level. Thirty-three students enrolled in Chinese 101 at Brigham Young University participated. All students enrolled in this course were asked to participate in the study, and all students consented to participate.

One of the three sections was selected randomly as the treatment group via an online number randomizer (www.random.org/lists/). Students who chose to enroll in that section became the treatment group. The other two sections participated as control groups. In order to get as many participants as possible, all aspects of the study were included in the course syllabus. This means that whether or not a student chose to participate in the study, they would still be required to complete the same work. For example, the pre-test and post-test were required and graded tests for all students. All students consented to participate in the study.

Design

A pre-/post-test design was used. The pre- and post-tests assessed speaking ability through in-person speaking prompts. Students participated in pairs. Two students met with their teaching assistant (TA) and were given the speaking prompts. The two students then had a conversation with each other in response to the prompts. The TA recorded the conversation. The pre-test was administered to all participants halfway through the semester, with the post-test at the end. The Foreign Language Classroom Anxiety Scale (FLCAS) (Horwitz, Horwitz, & Cope, 1986) was given to participants at the end of the study to determine anxiety levels between the treatment and control groups. Finally, a

preference survey was given to participants to determine student perception of method effectiveness.

The course is taught by one Chinese professor, and three TA's. The professor teaches all three sections together on Tuesdays and Thursdays. The three TA's are assigned one section each, and teach that section on Mondays, Wednesdays, and Fridays. The control groups, comprised of two sections, and the treatment group, comprised of one section, all meet at the same time, and in the same building. In order to keep instruction as similar as possible, the three TA's section assignment changed twice during the semester. For example, one TA was assigned to section 1 at the beginning of the semester, then about five weeks later switched to teaching section 2, then about five weeks later switched to teaching section 3 until the end of the semester. This way, by the end of the semester, all TA's spent equal time teaching each of the three sections. This allowed each section to receive instruction equally in terms of teaching ability, teaching style, teacher personality, teacher language ability, etc.

The control group received the instruction that is normally offered in a BYU Chinese 101 course. This includes five 50-minute class periods of about ten students in each section. The treatment group received the exact same instruction, with one difference: two of the five days were conducted one-on-one (one student meeting with one TA) instead of the entire class meeting all together. It was intended that the one-on-one sessions would last for 10 minutes instead of 50 minutes (see Table 1). However, as described in Chapter 5, each session only lasted about 5 minutes.

The content of the one-on-one session was as similar as possible to the content in the control group. This was done to prevent different teaching styles affecting student

speech gains. Some differences arose because some activities work better with an entire class and some work better one-on-one. These differences in teaching were used intentionally because the one-on-one method naturally works better with conversational activities, including more personalized feedback and adaptation to lesson plans. On the other hand, drills where the teacher calls on each student to respond to similar prompts work better with a group.

Table 1

Differences in Teaching Methods

	Monday	Tuesday	Wednesday	Thursday	Friday
Control	Speaking Group Class 50 Min	Same Instruction	Speaking Group Class 50 Min	Same Instruction	Same Instruction
Treatment	Speaking One-on-One 10 min/student		Speaking One-on-One 10 min/student		

Instrumentation

The pre- and post-tests were conducted in the middle of the semester and at the end of the semester. The reason the pre-test was given in the middle of the semester is because participants are 101 students who have little to no experience with learning Chinese. This means that students did not have the ability to participate in a speaking pre-test at the beginning of the semester. The tests consist of speech prompts for the students to respond to (see appendix A for the exact prompts). Each student met with a TA and responded to the speech prompts by having a conversation in pairs. The conversation was recorded and then analyzed.

Data analysis was conducted using the program Camtasia. The researcher and thesis advisor Dr. Matthew Christensen analyzed each sample, and came to a consensus

on each one. Speech samples received scores according to 1) fluency, 2) pronunciation, and 3) syntactic accuracy. Scores were given in each area in order to determine if there was a significant difference between student speaking ability in the treatment group and the control group.

Criteria for data analysis were as follows: Fluency was determined according to speech rate, which was calculated as the total speech time compared to the total number of syllables spoken. For example, a speech sample might have a rate of 1.5 syllables per second. When counting syllables, all words, repetitions and self-corrections were counted (Brand & Gotz, 2011). Speech rate is a commonly used measurement for speech fluency (Cucchiarini, Strik, & Boves, 2000).

Syntax accuracy was determined according to the ratio of error-free T-units to total T-units (Evans, Hartshorn, Cox, & Martin, 2014). A T-unit is defined as stand-alone phrase or as the shortest grammatically allowable sentence. For example, in English a T-unit could be: "I went to the store." A speech sample might have 80% error-free T-units to total T-units.

Pronunciation was assessed via scores in vowel/consonant pronunciation and tone pronunciation. Scores of 1-5 were given according to the pronunciation rubric, which was roughly based off of Ma's (2015) rubric (see Appendix B).

To determine qualitative information about preferences, anxiety, and motivation, participants completed two questionnaires. One was the Foreign Language Class Anxiety Scale FLCAS (Horwitz, Horwitz, & Cope, 1986) (see Appendix C), and one that determines preference, which was developed by the researcher (see Appendix D). Similar elements can be found in Dizon's (2016) perception survey. Participants took the surveys

in class and as a take-home assignment as a course requirement. This allowed for a high response rate. The anxiety survey was administered in both the classroom setting and in reference to the one-on-one setting. Students were asked to respond to questions for that specific context only. The preference survey and one-on-one FLCAS were given to students to take home and complete due to limited time during the five to ten minute one-on-one sessions.

Answers to the survey were assigned scores one to five, and levels of anxiety were determined accordingly. There were five levels on the Likert scale. Scores were matched to which level was selected on the Likert scale. For example, Strongly Disagree could be scored as one point or five points depending on the question.

Analysis

After scoring all speaking data, an analysis of covariance (ANCOVA) was run to determine if there was statistical significance between the gains of the control and treatment groups. All analyses were done using Statistical Analysis System (SAS), version 9.4. ANCOVA was used because it adjusts for pre-test scores across the four dependent variables. The dependent variables were the gains in speech rate, vowel/consonant pronunciation, tone pronunciation, and error free T-units. The pretest scores for each dependent variable were used as covariates. This was done to adjust for the differences in pre-test scores. If a student scored higher on the pretest then there is less opportunity for gain. The one-on-one treatment was the primary independent variable. Statistical significance would show if any of the dependent variables were influenced by the teaching method.

After collecting and classifying all survey data, data was summarized in an attempt to determine the relationship between each factor. Results and implications are discussed in the following chapters.

Chapter 4: Results

This chapter first presents the speech analysis results for the pre-and post-speaking tests. These results include speech rate, pronunciation, and syntactic accuracy. Results of the ANCOVA are also presented. The qualitative results are then presented from the analysis of the anxiety and preference surveys.

Speech Analysis Results

Students participated in a pre- and post-test in which they were asked to respond to speech prompts (Appendix A). Different speech prompts were used for the pre- and post-tests. The content of the prompts was not given to the students until the administration of the test. Students were paired up with a classmate and asked to have a conversation according to the requirements of the speech prompts. The tests were administered and audio-recorded by the students' TA. The audio recordings were later scored for speech rate, pronunciation (Appendix B), and error free T-units.

Results of this basic analysis showed very little difference in scores between the control group and treatment group. Two scores showed some noticeable difference between groups. One was pre-test tone pronunciation (see Table 2). The one-on-one students averaged a score of 2.5 out of 5, where the control group averaged 3.1. The other was pre/post-test gains speech rate (see Table 4). The one-on-one group averaged a loss of -0.25, where the control group averaged a loss of -0.09. This loss was likely due to the difficulty level of the post-test, and is discussed further in Chapter 5. Data showing the averages of pre-test, post-test, and pre/post-test gains is shown in Tables 2-4. See Appendix G for all speech scores.

Table 2

Pre-test Averages

	Fluency	Pronunciation		Syntax
Teaching Method	Speech rate-syllables per sec	Vowels/Consonants	Tones	Errors free T-units
Group	1.35	3.4	3.1	0.88
1 x 1	1.43	3.6	2.5	0.85

Table 3

Post-test Averages

	Fluency	Pronunciation		Syntax
Teaching Method	Speech rate-syllables per sec	Vowels/Consonants	Tones	Errors free T-units
Group	1.26	3.6	3.1	0.86
1 x 1	1.18	3.7	2.7	0.79

Table 4

Pre/Post-test Gains Averages

	Fluency	Pronunciation		Syntax
Teaching Method	Speech rate-syllables per sec	Vowels/Consonants	Tones	Errors free T-units
Group	-0.09	0.2	0	-0.03
1 x 1	-0.25	0.1	0.2	-0.06

After scoring student speech data, an analysis of covariance (ANCOVA) was performed. The results of the ANCOVA showed that there was no statistically significant

difference between the treatment group and the control group in any of the categories that were measured.

The p-value comparing treatment gains for speech rate was 0.1685 (F1,29=1.99, p=0.1685), for vowel/consonant pronunciation it was 0.7393 (F1,29=0.11, p=0.7393), for tone pronunciation it was 0.8743 (F1,29=0.03, p=0.8743), and for error free T-units it was 0.1228 (F1,29=2.53, p=0.1228)(see Table 5). None of these p-values show statistical significance.

Table 5

ANCOVA Treatment Comparison

	Num DF	Den DF	F Value	p Value
Speech Rate	1	29	1.99	0.1685
Vowel/Consonant Pronunciation	1	29	0.11	0.7393
Tone Pronunciation	1	29	0.03	0.8743
Error free T-units	1	29	2.53	0.1228

For both groups, in terms of gains from pre- to post-test, the analysis of covariance calculated a slight loss for speech rate and error free T-units, and a slight gain for the two pronunciation categories. For speech rate, the one-on-one group had a loss of -0.2377, which is considered a significant loss (t29=-2.89, p=0.0072); the control group had a loss of -0.08686, with a p-value of 0.2111 (t29=-1.28, p=0.2111). For vowel/consonant pronunciation, the one-on-one group had gains of 0.1112 (t29=0.64, p=0.5258); the control group had gains of 0.1871 (t29=1.31, p=0.2007). For tone pronunciation, the one-on-one group had gains of 0.1193 (t29=0.58, p=0.5637); the

control group had gains of 0.07630 (t29=0.46, p=0.6524). For error free T-units, the one-on-one group had a loss of -0.07613, which is considered a significant loss (t29=-2.79, p=0.0092); the control group had a loss of -0.01949 (t29=-0.87, p=0.3934) (see Table 6)

Table 6

ANCOVA Gains

	Treatment	Gains	DF	t Value	Pr > | t |
Speech Rate	1 x 1	-0.2377	29	-3.39	0.0072
	Group	-0.08686	29	-1.36	0.2111
Vowel/Consonant Pronunciation	1 x 1	0.1112	29	0.64	0.5258
	Group	0.1871	29	1.31	0.2007
Tone Pronunciation	1 x 1	0.1193	29	0.58	0.5637
	Group	0.07630	29	0.46	0.6524
Error free T-units	1 x 1	-0.07613	29	-2.79	0.0092
	Group	-0.01949	29	-0.87	0.3934

In the two areas where the one-on-one group saw statistically significant losses (speech rate and error free T-units), the control group also saw losses, but not statistically significant losses. However, a comparison of the losses did not show enough difference to indicate a statistically significant difference between the one-on-one group and the control group in speech rate, pronunciation, or error free T-units (see Table 5). This shows that even though the one-on-one class saw greater losses than the group class, the ANOCVA results still show no statistically significance between these teaching methods.

Anxiety and Preference Results

All students in the control group completed the FLCAS anxiety/motivation survey at the end of the semester (Horwitz, Horwitz & Cope, 1986) (Appendix C). The one-on-

one group completed the FLCAS survey twice; once in response to how they felt in group

classes and once in in response to one-on-one sessions. The FLCAS survey includes 33

questions that rate students' anxiety and motivation via a Likert scale (Appendix C). The

responses on the Likert scale were each given values between one to five. For example,

Strongly Disagree = 1, Disagree = 2, …Strongly Agree = 5. Students with the lowest

score show the greatest anxiety, while higher scores show less anxiety. The highest score

possible (lowest anxiety) was 165, and the lowest score possible (highest anxiety) was

33. Results show that there was very little difference between the treatment and control

groups (see Table 7).

  The treatment group showed no difference in anxiety between the group survey

and the one-on-one survey. Only one student showed a large difference, showing that

anxiety was much higher in one-on-one sessions. In comparing the treatment and control

groups, the treatment group showed slightly more anxiety, but not to any amount of

practical significance (Table 10). Practical significance is here defined as results that do

not achieve statistical significance, but can be reasonably explained to be meaningful in

some other way. See Appendix H for all anxiety scores. A correlation was also calculated

between anxiety scores and speech scores. Results showed weak to no correlation for all

variables.

Table 7

FLCAS Survey Averages

Treatment/ Control Group	Survey Category	Average Score
Treatment	One-on-one	94
Treatment	Group	97
Control	Group	109

The one-on-one group also completed a preference survey. This survey asked students to rate the following topics: 1) How effective group teaching and one-on-one teaching is for improving speaking ability, 2) If they would choose to take a class with or without one-on-one teaching, 3) In which setting they feel they improved more, and 4) How much they enjoy/feel comfortable coming to group and one-on-one classes (Appendix D). Table 11 shows how students responded to each question.

Results show that 75% of students felt the one-on-one method was effective for improving speaking ability. Half felt that one-on-one teaching helped them to improve speaking more than group teaching. More than half (67%) indicated they would choose to take a class with one-on-one teaching. A great majority (83%) said they enjoyed the one-on-one sessions, and half felt more comfortable in one-on-one sessions than group sessions.

Table 8

Student Responses to Preference Survey

1	How effective do you think class sessions are for improving your speaking ability?	Ineffective- 8%	Effective- 92%
2	How effective do you think one-on-one sessions are for improving your speaking ability?	Ineffective- 25%	Effective- 75%
3	If you could choose, would you take a class with or without one-on-one sessions	With- 67%	Without- 33%
4	Do you think you improved speaking more in the classroom sessions or in the one-on-one sessions?	Classroom- 50%	1 x 1- 50%
5	I enjoy coming to classroom sessions	Enjoy- 100%	Dislike- 0%
6	I enjoy coming to one-on-one sessions	Enjoy- 83%	Dislike- 17%
7	Do you feel more comfortable speaking in Chinese in classroom sessions or in one-on-one sessions?	Classroom- 50%	1 x 1- 50%

Chapter 5: Discussion

This chapter discusses how the study results help to answer the three research questions. This includes a discussion on why certain questions were unable to receive a complete answer, as well as additional findings, further implications, limitations, and possibilities for future research. Each research question is discussed separately followed by a conclusion.

Research Question 1

The first research question is: "Will two weekly 10-minute sessions of one-on-one instruction result in greater speaking gains than two weekly 50-minute sessions of classroom instruction?"

One-on-one teaching provides a great opportunity for helping students with their individual needs. Many practitioners would agree that one-on-one teaching is more effective than group teaching. In a group class the teacher's attention must be divided amongst the students, who all come from varying backgrounds and abilities. Even though one-on-one teaching offers a solution to this situation, there are few studies that compare group teaching and one-on-one teaching effectiveness. Furthermore, the one-on-one teaching method is difficult to implement due to required teaching time. In a group classroom, 15 students can easily be instructed in a 50-minute period. In a one-on-one situation, each of the 15 students would only be able to receive about three minutes of one-on-one instruction to keep within the same 50-minute time frame. Research Question 1 therefore attempts to ascertain if short one-on-one sessions can produce greater speaking gains than long classroom sessions.

It was discovered that one-on-one instruction did not result in greater speaking gains (see Table 5). Four areas were analyzed for speaking ability: fluency (speech rate), vowel/consonant pronunciation, tone pronunciation, and grammar accuracy (error free T-units). The actual gains averaged close to zero for all four areas (see Table 4). The negative gains were likely caused by the difference in pre/post-test task difficulty. The post-test speech prompts were much more difficult than the pre-test speech prompts. Due to task difficulty, even though speech had improved over the course of the study, categories such as speech rate decreased for some due to pauses while trying to think of the right vocabulary or grammar structure to use. It would be interesting to see how students would score if they performed the same task for the pre- and post-tests.

Although no statistical significance was found, practical significance is easily found. Practical significance is here defined as results that do not achieve statistical significance, but can be reasonably explained to be meaningful in some other way. It is true that speech gains were not greater in the one-on-one group, but it is also true that gains were not worse. Indeed, the statistical analysis showed treatment and control groups belonging to the same population. In other words, the students who received one-on-one instruction did just as well as the students who received group instruction. This is significant because it tells us that a short period of time in one-on-one teaching is equivalent to a long period of time in group teaching.

Furthermore, it was reported that the majority of one-on-one sessions were actually only about five minutes in length instead of the desired ten minutes. This resulted from time and schedule constraints. Due to this shortened time, it can be concluded that about five minutes spent in one-on-one instruction can produce the same

results as a 50-minute group session. This provides the field with quantitative data on how effective the one-on-one teaching method is.

This shortened time was a result of the difficulty for TA's to spend two hours and ten minutes twice a week in on-on-one sessions (13 students, 10 minutes each). For further research, results could be very different if it were possible to provide full 10-minute or even 15-minute sessions. If five-minute one-on-one sessions result in speaking gains similar to 50-minute group sessions, then possibly 10 to 15 minute one-on-one sessions could result in much greater language gains. The Ohio State University (OSU), for example, teaches their students for 15 minutes per session in their Individualized Instruction Center. Students who take courses through the Individualized Instruction Center are able to successfully move to a classroom course afterwards, showing that learning results are similar in the two settings (M. Christensen, personal communication, March 22, 2017). Another option for future research is teaching students two-on-one or three-on-one as it would reduce teaching time.

Something else that could have helped group classes to score so well is Brigham Young University's (BYU) Chinese teaching method. BYU's Chinese classes follow the Performed Culture teaching method (Christensen & Warnick, 2006). This method uses a communicative approach focused on student performance that is culturally appropriate. Group classes therefore attempted to get students talking as much as possible through class discussions, group work, and pair work. Research shows that activities that increase student interaction result in greater speaking gains (Saeed, Khaksari, Eng, & Ghani, 2016). The one-on-one sessions had this same focus, but only lasted about five minutes. In a normal 50-minute Chinese class at BYU, it is possible for each student to get about

four-six minutes speaking in the language (Christensen & Wu, 1993). Students also benefit from listening to the teacher and other students speak to each other. In more traditional classrooms, where a less communicative approach is taken, students would not get as much speaking time as they do in BYU's Chinese classes. With such favorable learning circumstances, the control group effectively improved speech throughout the semester. It is therefore significant that five-minute one-on-one sessions could produce similar speech gains.

Another factor to consider is students' individual study habits. Gan's study (2004) showed that self-learning techniques had a great effect on language achievement. This was not a variable considered in the present study, but is an important factor to consider and could lead to meaningful future research.

Finally, future research might consider including other factors such as varying levels of language ability. The current study only had participants from a Chinese 101 class. Adding to the scope by including participants from 200 and/or 300 level classes could make an interesting comparison. The one-on-one approach might be more effective with a certain language level. More statistical analysis could be run adjusting for different classes. Furthermore, a greater number of participants would help to generalize to the population. Finally, if it were possible to include participants studying other languages, a comparison could be made between them.

Research Question 2

The second research question is: "How will one-on-one teaching compare to classroom teaching in regards to student anxiety?"

The one-on-one group was given two identical surveys at the end of the study. The surveys measured anxiety via the FLCAS (Horwitz, Horwitz & Cope, 1986). For one survey they were asked to answer questions according to how they felt in group sessions, for the other survey they answered according to how they felt in one-on-one sessions (Appendix C). Results showed no difference between these situations (see Table 7). This was not a simple result of averaging, each student (except for one) show the same amount of anxiety in the two surveys. Only one student showed a difference in anxiety, with greater anxiety in the one-on-one context. These results suggest that anxiety does not change within these two contexts. However, it is possible that other methods of determining anxiety could have produced different results. Possibly students simply responded to surveys in response to general anxiety instead of anxiety in specific contexts. Other methods such as asking students to rate their anxiety at the end of group and one-on-one sessions might help student to better reflect how they feel in the two contexts.

Students in the control group also completed the FLCAS survey to determine anxiety within group instruction. The difference in anxiety between the treatment and control groups was very minimal. The survey included 33 questions with scores ranging from 1-5 for each one. The lowest possible score (showing highest anxiety) was 33, the highest possible score (showing lowest anxiety) was 165. The middle score of this range is therefore 99. A student would score 99 if they chose "neither agree nor disagree" on every question. This would show neither anxiety nor a lack of anxiety.

The control group showed an average anxiety score of 109, and the one-on-one group showed an average score of 94. Both of these averages are very close to 99,

showing that levels of anxiety averaged out close to the middle range discussed. This slight difference between treatment and control groups represents a small but insignificant amount.

Some practical significance may be found, however, in the middle-ranged anxiety results. Studies show that factors that affect anxiety include: size of group, acquaintance level with others, task type, and conversation topic. (Baran-Lucarz & Malgorzata, 2014). Assuming these factors also influenced the groups in the present study, a simple analysis can be made. Treatment and control groups all participated in group classes. These classes each had nine to thirteen students attending. The students become well acquainted with each other due to frequent student-to-student interaction, and relatively small class size. Tasks were almost all communicative in nature, which studies show to produce higher levels of anxiety than other task types (Kim, 2009; Lin, Chao, & Huang, 2015). Topics of conversation came from course content and included topics such as: self, family, time, buying and selling, giving and asking for directions, etc. These classroom factors combined together resulted in neither high nor low anxiety. It is particularly interesting to see how frequent communicative activities resulted in overall middle-range anxiety, even though they often produce high levels of anxiety.

Research Question 3

The third research question is: "Which teaching method will students perceive to be more effective?"

One-on-one students completed a preference survey at the end of the study. The survey showed that five out of ten students (50%) felt that one-on-one teaching was more effective, and the other half felt group teaching was more effective. To clarify these

numbers, two students marked that both teaching methods were more effective, and were therefore not used in this calculation. Also one of the thirteen students did not fill out a preference survey.

Nine out of twelve students (75%) felt one-on-one teaching is an effective teaching method. Four of twelve (33%) indicated that one-on-one teaching was effective, but group teaching was more effective. In summary, the majority of students felt one-on-one teaching was an effective teaching method, but only half of students thought it was better than group teaching. This indicates that personality, learning preference, relationship between student and teacher, and other similar factors most likely had an effect on perceived effectiveness.

Additionally, eight out of twelve (67%) said they would take a class which includes one-on-one teaching if they could choose, with ten out of twelve (83%) who said they enjoy one-on-one sessions. Finally, half of students said they feel more comfortable in one-on-one and the other half that they feel more comfortable in group classes. From this we can see that even though some students felt more comfortable in group classes, they also enjoyed one-on-one sessions, and three of these would still choose to take a class with one-on-one.

This data shows that very few students were completely against one-on-one teaching. In fact, only one student selected each response in opposition to one-on-one teaching (the same student who showed much greater anxiety in one-on-one sessions than group sessions). The other eleven had at least one positive response, with a majority of students who felt one-on-one teaching is effective, would take a class with one-on-one,

and enjoyed one-on-one sessions. This shows that student perception of the one-on-one teaching method is generally high.

Implications

Although practical significance can be found within the results of this study, the extent of its implications are limited. Results do not merit the implementation of a one-on-one method that replaces group time with one-on-one time. Despite the fact that results show five-ten minutes of one-on-one teaching can produce the same speech gains as 50-minute group sessions, logistically speaking the one-on-one method is much more difficult to implement. It requires more teaching time, scheduling the one-on-one sessions is more difficult, and other daily tasks such as giving out announcements becomes more complicated. Due to these logistical difficulties, equal speech gains are not influential enough to change current practice. More research will need to be done to determine if one-on-one teaching can produce greater learning gains than a group method.

This study does, however, help to point the direction for future comparative research. As little to no research has been done comparing one-on-one and group teaching, this study can be used to direct other research to find greater and more compelling results.

Limitations

There are many limitations to consider in this study, many of which came about due to the inherent difficulties found in the one-on-one method. The length of each one-on-one session is perhaps the greatest limitation of this study. Due to TA's time constraints, only about five minutes were spent in each session instead of the desired ten minutes. This resulted in time-on-task being cut in half during the semester. This is the

considerable challenge to implementing a one-on-one method; finding a way to schedule enough teaching time is problematic and costly. Related to this limitation is the relatively short duration of the study. Students took the pre-test in the middle of the semester, and the post-test at the end of the semester. This means the measured duration was only about seven weeks.

Another limitation of the study is that not enough information was collected from the one-on-one sessions. Various data could have been collected that was not considered, such as: the exact teaching method and materials used by TA's, the exact amount of time spent in each session, how much time each student spent speaking during sessions, and how individual student performance compared between one-on-one and group sessions. In terms of qualitative data, the study also lacks information that could be gathered from student and TA interviews, observational data, or even data obtained as a participant. Another area that was not measured was student's individual study habits and personal learning types.

Finally, the scope was also limited as it could have included other language skills such as listening, reading, and writing. The scope could also be extended to other language levels, such as 200 or 300 level classes, and other languages.

Future Research

There are a variety of ways future research can overcome the limitations of this study, and achieve more impactful implications. Firstly, research that can provide longer one-on-one sessions will be able to add valuable data to the field. Sessions that last 10, 15, or even 20 minutes can potentially provide very different results than those of the

current study. This can be especially beneficial to the field as there are so few studies that compare one-on-one to group teaching.

An option for increasing the feasibility of a one-on-one study is shortening the duration of the study. A two-week long study that uses an achievement test would be much easier to implement. During the two weeks the treatment groups can receive one-on-one sessions of 10 or 20 minutes instead of 50-minute group sessions. With such a short duration, the scope could even be extended to include scores for speaking, reading, writing, and listening.

Although a shorter duration would make it easier to accomplish the teaching time required, doing so could also reduce learning outcomes. If it were feasible, a study that provides more time in each sessions, and that also extends the duration of the study is ideal. The current study only lasted about 7 weeks, studies that last longer can obtain more reliable results. A final option to reduce the difficulty of teaching time is teaching students two-on-one or even three-on-one. This maintains an individualized approach, but is more easily accomplished.

In terms of anxiety and other qualitative data, future research might consider audio and/or video recording one-on-one sessions, interviewing students and TA's, and discovering students' individual study habits. This could provide valuable information, such as: what exactly is said in the sessions, the performance level of students in the sessions, students' willingness to communicate in sessions, how students and TA's feel about the sessions, what study techniques students use outside of class, how much time students spend studying outside of class, etc.

With so little comparative research in this area, one-on-one research has a great need for studies that add valuable data to the field and fill the research gaps. This will help to inform practitioners and leaders as to the benefits and uses to which the one-on-one method can be used to meet the needs of our students.

Conclusion

This study examines how one-on-one language teaching compares to group language teaching in terms of speech gains, anxiety, and student preference. Speech gains were analyzed through fluency, pronunciation, and syntactic accuracy. The statistical analysis shows that the one-on-one teaching method produced the same speech gains as the group teaching method. This shows that five to ten minute one-on-one sessions can produce the same speech gains as 50-minute group sessions. Although these results do not create a need to alter current language curricula, they do add valuable data to the field. Little research has been done comparing the one-on-one method to other teaching methods. Further research must be done to determine to what degree the one-on-one method should be used for the benefit of our students.

Results also show little difference in anxiety between the one-on-one and group contexts. A deeper look is needed to compare one-on-one settings to group settings in terms of anxiety. Qualitative research that compares these teaching methods can add valuable data to fill this gap. Finally, student preference shows that the majority of students consider the one-on-one method to be an effective teaching method.

This study shows that one-on-one teaching is a more time-effective teaching method than group teaching. The considerable challenge is producing enough instruction time to teach each student using this method. Hopefully future research will reveal what

great benefits can be drawn from one-on-one teaching and how to utilize this method to provide students with a better learning experience.

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Appendix A

Speech Prompts

Pre-test Prompts	Situation #1
	You are meeting for the first time in a formal situation. Exchange names, nationalities, and where you work.
	Situation #2
	Ask about the ages of each other's parents and siblings.
Post-test Prompts	1A. You have met a new student for the first time. They are also new to campus. Explain to them where their Chinese class meets relative to other buildings in the area.
	Their class is in the HRCB (Kennedy Ctr)
	Switch roles. This time you are looking for the SWKT.
	1B. You are new to campus and have met another student. You are not familiar with campus and don't know where the building is where your Chinese class meets. Ask your new friend where the building is.
	The class is in the SWKT
	2. Have the following conversation with your classmate.
	You both want to go to China. Ask each other if you have ever been before. If so, how many times. Talk about your plans when you are going to China. (pretend that you already have plans to go). Discuss when you are leaving (month, day, etc.) and when you will come home and what cities you will visit.

Appendix B

Pronunciation Rubric

Score	Vowels/Consonants	Tones
5	Mispronounced vowels/consonants are rare and cause little to no discomfort understanding speech for a native unaccustomed to speaking with a non-natives	Mispronounced tones (including tone sandhi and stress issues) are rare and cause little to no discomfort understanding speech
4	Pronunciation errors are somewhat occasional and cause a little discomfort.	Mispronounced tones are somewhat occasional and cause a little discomfort
3	Pronunciation errors occur occasionally and cause some discomfort	Tone errors occur occasionally and cause some discomfort
2	Pronunciation errors occur somewhat frequently and cause discomfort	Tone errors occur somewhat frequently and cause discomfort
1	Pronunciation errors occur frequently and cause great discomfort	Tone errors occur frequently and cause great discomfort

Appendix C

Foreign Language Classroom Anxiety Scale (FLCAS)

(Group instructions)
Instructions- For each question, please mark **ONE** box with an **X** that matches how you feel about the statement given. Respond to statements based on **group class experience only**.
(One-on-one instructions)
Instructions- For each question, please mark **ONE** box with an **X** that matches how you feel about the statement given. Respond to statements based on **one-on-one experience only**.

	Strongly Agree	Agree	Neither Agree no Disagree	Disagree	Strongly Disagree
1. I never feel quite sure of myself when I am speaking in my foreign language class.					
2. I don't worry about making mistakes in language class.					
3. I tremble when I know that I'm going to be called on in language class.					
4. It frightens me when I don't understand what the teacher is saying in the foreign language.					
5. It wouldn't bother me at all to take more foreign language classes.					
6. During language class, I find myself thinking about things that have nothing to do with the course.					
7. I keep thinking that the other students are better at language than I am.					
8. I am usually at ease during tests in my language class.					
9. I start to panic when I have to speak without preparation in language class.					
10. I worry about the consequences of failing my foreign language class.					
11. I don't understand why some people get so upset over foreign language classes.					
12. In language class, I can get so nervous I forget things I know.					
13. It embarrasses me to volunteer answers in my language class.					
14. I would not be nervous speaking the foreign language with native speakers.					
15. I get upset when I don't understand what the teacher is correcting.					

16. Even if I am well prepared for language class, I feel anxious about it.					
17. I often feel like not going to my language class.					
18. I feel confident when I speak in foreign language class.					
19. I am afraid that my language teacher is ready to correct every mistake I make.					
20. I can feel my heart pounding when I'm going to be called on in language class.					
21. The more I study for a language test, the more confused I get.					
22. I don't feel pressure to prepare very well for language class.					
23. I always feel that the other students speak the foreign language better than I do.					
24. I feel very self-conscious about speaking the foreign language in front of other students.					
25. Language class moves so quickly I worry about getting left behind.					
26. I feel more tense and nervous in my language class than in my other class.					
27. I get nervous and confused when I am speaking in my language class.					
28. When I'm on my way to language class, I feel very sure and relaxed.					
29. I get nervous when I don't understand every word the language teacher says.					
30. I feel overwhelmed by the number of rules you have to learn to speak a foreign language.					
31. I am afraid that the other students will laugh at me when I speak the foreign language.					
32. I would probably feel comfortable around native speakers of the foreign language.					
33. I get nervous when the language teacher asks questions which I haven't prepared in advance.					

Appendix D

Preference Survey

1	How effective do you think class sessions are for improving your speaking ability?	Very Ineffective	Ineffective	Effective	Very Effective
2	How effective do you think one-on-one sessions are for improving your speaking ability?	Very Ineffective	Ineffective	Effective	Very Effective
3	If you could choose, would you take a class with or without one-on-one sessions	With one-on-one		Without one-on-one	
4	Do you think you improved speaking more in the classroom sessions or in the one-on-one sessions?	In classroom		In one-on-one	
5	I enjoy coming to classroom sessions	Strongly Agree	Agree	Disagree	Strongly Disagree
6	I enjoy coming to one-on-one sessions	Strongly Agree	Agree	Disagree	Strongly Disagree
7	Do you feel more comfortable speaking in Chinese in classroom sessions or in one-on-one sessions?	In classroom		In one-on-one	

Appendix E

Pre-test Analysis

Student	Teaching Method	Fluency Speech rate- syllables per sec	Pronunciation Vowels/Conso nants	Tones	Syntax Errors free T- units
1	Group	1.37	3	4	0.91
2	Group	2.14	5	5	0.96
3	Group	1.32	4	3	0.81
4	Group	1.18	4	4	0.80
5	Group	1.82	4	4	1.00
6	Group	1.76	4	4	0.93
7	Group	1.65	4	2	0.93
8	Group	1.13	3	2	0.94
9	Group	1.19	3	2	0.83
10	Group	1.48	3	3	1
11	Group	0.76	2	2	0.82
12	Group	1.33	3	3	1.00
13	Group	1.61	4	5	1.00
14	Group	0.74	3	2	0.71
15	Group	1.76	3	3	0.92
16	Group	1.83	3	3	0.95
17	Group	1.07	3	3	0.82
18	Group	0.69	4	3	0.82
19	Group	0.89	2	2	0.68
20	1 x 1	1.25	3	2	0.87
21	1 x 1	1.59	4	4	1
22	1 x 1	1.16	3	3	0.75
23	1 x 1	1.07	4	2	0.8

24	1 x 1	1.21	3	1	0.85
25	1 x 1	1.38	3	2	0.82
26	1 x 1	1.74	3	1	0.78
27	1 x 1	1.69	3	1	0.83
28	1 x 1	0.8	3	1	0.85
29	1 x 1	0.69	4	3	0.88
30	1 x 1	2.02	5	5	1
31	1 x 1	1.3	4	3	0.71
32	1 x 1	2.7	5	4	0.94

Post-test Analysis

		Fluency	Pronunciation		Syntax
Student	Teaching Method	Speech rate- syllables per sec	Vowels/Cons onants	Tones	Errors free T-units
1	Group	1.84	3	3	0.86
2	Group	1.76	5	5	1
3	Group	1.94	3	3	0.96
4	Group	1.28	5	5	0.81
5	Group	1.9	4	4	0.94
6	Group	1.41	5	4	0.93
7	Group	1.55	4	4	0.95
8	Group	0.9	4	3	0.69
9	Group	1.52	3	3	0.68
10	Group	1.64	3	3	0.82
11	Group	0.64	3	2	0.82
12	Group	1.04	3	3	0.92
13	Group	1.44	4	4	0.89
14	Group	0.65	2	2	0.78
15	Group	1.57	3	2	0.93

16	Group	1.27	3	2	0.91
17	Group	1.03	4	3	0.89
18	Group	0.4	4	3	0.8
19	Group	0.45	3	1	0.72
20	1 x 1	1.15	4	3	0.67
21	1 x 1	1.18	5	4	0.88
22	1 x 1	1.55	4	3	0.9
23	1 x 1	0.96	3	3	0.87
24	1 x 1	0.75	3	1	0.65
25	1 x 1	1	3	2	0.67
26	1 x 1	1.23	3	1	0.69
27	1 x 1	1.46	3	2	0.8
28	1 x 1	0.69	3	2	0.64
29	1 x 1	0.64	4	4	0.74
30	1 x 1	1.31	5	4	0.92
31	1 x 1	1.46	3	2	0.91
32	1 x 1	1.97	5	4	0.91

Pre/Post-Test Gains

		Fluency	Pronunciation		Syntax
Student	Teaching Method	Speech rate- syllables per sec	Vowels/Consonants	Tones	Errors free T-units
1	Group	0.46	0	0	-0.05
2	Group	-0.37	0	0	0.04
3	Group	0.62	-2	-1	0.15
4	Group	0.11	0	1	0.01
5	Group	0.07	1	1	-0.06
6	Group	-0.35	0	0	0
7	Group	-0.1	0	3	0.02

8	Group	-0.23	1	2	-0.25
9	Group	0.33	0	1	-0.15
10	Group	0.16	1	1	-0.18
11	Group	-0.12	0	1	0
12	Group	-0.29	0	1	-0.08
13	Group	-0.17	1	0	-0.11
14	Group	-0.09	-1	-1	0.07
15	Group	-0.2	0	0	0.01
16	Group	-0.56	-1	0	-0.04
17	Group	-0.04	0	0	0.07
18	Group	-0.29	0	0	-0.02
19	Group	-0.45	0	-1	0.04
20	1 x 1	-0.1	0	1	-0.2
21	1 x 1	-0.41	1	0	-0.12
22	1 x 1	0.39	1	0	0.15
23	1 x 1	-0.11	0	0	0.07
24	1 x 1	-0.46	1	0	-0.2
25	1 x 1	-0.38	-1	1	-0.15
26	1 x 1	-0.51	0	0	-0.09
27	1 x 1	-0.23	-1	1	-0.03
28	1 x 1	-0.1	1	2	-0.21
29	1 x 1	-0.05	1	1	-0.14
30	1 x 1	-0.71	0	0	-0.08
31	1 x 1	0.16	0	0	0.2
32	1 x 1	-0.72	0	0	-0.03

Appendix F

Survey Scores

Group Survey	Question

Student	Treatment	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
1	Group	3	4	5	5	5	4	2	3	4	4	3	4	4	4	4	4	4	4	3	4	5	4	2	4	3	4	3	3	4	4	5	3	3
2	Group	4	4	5	4	5	4	4	3	4	4	2	3	4	2	3	3	4	4	3	4	5	3	4	3	4	4	4	3	4	4	4	2	4
3	Group	2	2	2	4	4	3	1	2	1	1	3	1	3	3	3	1	1	2	1	1	3	4	1	1	2	1	2	1	4	5	4	2	2
4	Group	2	3	4	2	5	4	3	4	2	4	3	2	3	2	4	4	5	2	4	3	5	4	4	3	4	2	4	3	2	4	5	2	2
5	Group	4	4	3	4	5	4	2	4	1	1	2	2	4	1	4	2	5	3	4	1	5	5	2	3	4	2	3	4	4	4	5	2	2
6	Group	4	2	4	5	5	5	3	4	4	4	4	4	4	3	4	3	5	4	4	3	4	5	4	4	3	4	4	3	3	5	4	4	
7	Group	2	4	4	4	5	3	3	2	4	2	3	2	4	2	3	2	4	3	4	4	4	4	4	3	2	4	2	4	4	4	2	3	
8	Group	3	2	4	3	4	4	2	2	3	1	1	2	3	2	3	2	3	2	4	4	4	4	2	3	2	2	3	2	4	3	4	2	3
9	Group	3	4	4	3	5	5	3	4	4	4	3	3	3	2	4	3	3	4	4	5	4	4	3	4	4	3	4	4	3	3	2	4	
10	Group	4	4	4	5	5	2	3	5	3	5	2	5	5	4	1	4	3	3	5	5	5	4	3	5	4	5	4	5	5	5	5	3	4
11	Group	4	2	3	2	5	2	2	3	4	4	3	3	4	3	1	5	4	3	4	4	5	3	3	3	3	3	3	4	4	5	2	1	4
12	Group	4	4	4	4	5	2	4	4	2	5	4	2	4	2	2	4	2	4	4	3	4	2	4	4	4	4	4	4	4	4	4	2	4
13	Group																																	
14	Group	3	3	4	3	5	3	3	4	3	4	3	3	3	4	4	3	5	4	3	4	3	2	3	4	3	4	5	5	3	2	4	4	3
15	Group	4	3	3	4	3	4	4	3	2	3	2	3	3	2	3	4	4	3	3	2	4	2	3	3	4	2	3	4	4	3	4	3	2
16	Group	4	2	4	3	5	4	3	3	3	5	4	2	3	2	3	5	4	4	3	2	5	5	4	3	4	3	3	3	4	5	5	4	2
17	Group	2	2	3	3	5	4	2	3	3	4	4	2	3	4	4	2	4	3	5	2	4	5	2	2	2	4	2	2	4	4	4	4	2
18	Group	3	4	2	3	5	1	1	5	1	1	5	2	4	3	3	2	2	1	5	3	4	3	1	3	1	1	3	2	4	2	4	3	3
19	Group																																	
20	1 x 1	4	1	3	5	5	2	2	4	2	2	2	3	2	1	2	4	3	3	4	4	5	2	3	2	2	2	4	2	2	3	1	2	
21	1 x 1	3	2	4	4	4	4	4	2	2	4	2	4	3	2	2	3	3	3	4	4	4	4	4	4	4	4	3	2	4	4	4	2	
22	1 x 1	4	2	3	2	4	4	1	2	3	5	2	2	4	2	2	4	3	3	2	2	4	5	2	2	2	2	2	2	2	4	3	2	
23	1 x 1	1	3	4	3	4	5	1	1	3	1	2	2	4	2	3	4	2	2	4	4	4	4	1	3	1	1	3	2	3	3	4	2	3
24	1 x 1	1	1	3	2	4	5	1	3	2	2	1	1	2	3	3	1	4	2	4	2	2	4	1	1	1	1	1	1	2	3	4	4	2
25	1 x 1	4	2	4	3	4	3	2	4	3	4	4	2	4	4	2	4	2	3	4	4	5	2	3	4	4	4	4	3	2	4	4	4	2
26	1 x 1	2	1	1	2	3	4	1	2	1	3	3	2	2	2	2	2	2	2	4	2	4	4	1	1	3	2	2	2	2	4	2	2	1
27	1 x 1	4	2	4	4	4	4	2	3	3	2	4	3	4	2	3	3	3	3	4	3	4	3	3	4	3	4	3	4	3	4	4	4	3	2

28	1 x 1	2 2 2 3 5 4 1 3 2 2 3 2 2 3 2 2 5 3 4 3 3 4 3 2 4 3 3 4 2 2 2 2
29	1 x 1	2 3 4 3 5 4 1 2 2 1 2 1 4 1 2 2 5 2 4 2 4 4 1 2 2 2 2 2 4 4 4 1 2
30	1 x 1	4 3 5 5 4 3 3 2 2 5 2 3 4 1 5 2 3 4 3 4 4 4 3 4 4 4 4 3 4 2 3 2 4
31	1 x 1	4 3 3 4 4 4 3 4 3 2 3 3 3 3 3 3 3 4 4 3 4 4 4 4 4 3 4 4 2 4 3 4 4 3
32	1 x 1	4 2 3 3 3 2 3 3 2 2 3 2 4 3 4 4 3 3 4 4 5 2 3 3 3 4 3 3 4 4 5 2 2

1 x 1 Survey

20	1 x 1	1 1 3 1 4 4 2 2 2 1 2 2 2 1 1 1 2 2 1 2 4 4 2 3 2 1 2 2 1 1 3 1 1
21	1 x 1	4 4 4 2 4 4 3 3 2 4 2 4 4 2 2 4 4 2 4 4 2 3 4 4 4 4 4 2 4 4 2 2
22	1 x 1	2 1 3 2 4 4 2 2 2 4 2 2 2 3 2 4 3 2 2 2 4 4 2 3 2 2 2 3 4 2 4 4 2
23	1 x 1	1 1 3 3 4 4 1 1 3 4 4 3 4 2 2 2 2 4 3 3 4 2 4 1 2 2 2 2 3 4 2 2
24	1 x 1	1 5 2 1 3 5 1 2 1 1 2 1 1 4 4 1 4 2 4 2 1 5 1 1 1 1 1 1 2 3 4 4 1
25	1 x 1	4 4 4 3 4 2 2 4 3 4 2 2 4 4 3 4 2 3 3 4 4 2 3 4 4 4 4 3 2 4 4 4 4
26	1 x 1	3 2 1 2 2 3 1 3 1 1 3 2 2 2 2 2 3 3 4 1 4 3 1 1 3 3 3 2 2 3 2 2 1
27	1 x 1	
28	1 x 1	1 4 4 2 5 5 1 2 3 3 2 1 4 2 2 1 5 3 5 3 4 4 1 2 2 2 2 2 3 3 5 2 3
29	1 x 1	3 2 3 2 5 4 2 4 2 2 3 2 3 2 2 3 5 3 4 3 4 5 2 3 3 3 4 3 3 2 2 4 2
30	1 x 1	4 2 4 3 4 4 3 2 3 4 1 3 4 1 4 2 4 3 4 5 4 4 3 4 4 4 4 3 4 2 4 2 3
31	1 x 1	3 2 4 3 4 4 3 4 4 3 3 3 4 3 4 4 3 3 4 4 4 4 4 3 3 3 4 4 3 3 4 3 4
32	1 x 1	4 4 3 4 4 3 3 3 2 1 2 3 3 3 4 2 3 3 4 4 4 4 4 4 4 4 4 3 4 4 5 3 4